## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



# NOTICE OF AN AMENDMENT TO A CERTIFICATE OF ADJUDICATION

#### APPLICATION NO. 04-4590C

Northeast Texas Municipal Water District (Owner/District) has applied to amend Certificate of Adjudication No. 04-4590 (Certificate) to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to 6,810 acre-feet of water originating from the Monticello Winfield South Mine facility in Titus County to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates. More information on the application and how to participate in the permitting process is given below.

**APPLICATION**. Northeast Texas Municipal Water District., P.O. Box 955, Hughes Springs, Texas 75656, has applied to the Texas Commission on Environmental Quality to amend Certificate of Adjudication No. 04-4590, pursuant to Texas Water Code §§ 11.122, 11.042 and Texas Commission on Environmental Quality Rules Title 30 Texas Administrative Code (TAC) § 295.1, *et seq.* Mailed notice to the downstream water right holders of record in the Cypress Creek Basin is required pursuant to Title 30 TAC § 295.161(a), and mailed notice to the Texas Parks and Wildlife Department and the Office of Public Interest Council is required pursuant to Title 30 TAC § 295.161(c).

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564, on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County.

Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes in Marion County, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin.

Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm).

Owner is also authorized interbasin transfers of 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes to the Sabine River Basin, and 20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes to the Sabine River Basin.

Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Creek Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall.

Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614.

Two special conditions apply.

The time priority of Owner's right is September 16, 1957.

Pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to 6,810 acre-feet of water from the Monticello Winfield South Mine to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes.

The water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC.

Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates.

The 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County in Zip Code 75455.

The Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if granted, would contain a special condition requiring the District to measure and record the amount of water discharged into Dragoo Creek and maintain the Development Agreement. The application, technical memoranda, and Executive Director's draft permit are available for viewing on the TCEQ web page at: <a href="https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps">https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps</a>
Alternatively you may request a copy of the documents by contacting the TCEQ Office of the

Alternatively, you may request a copy of the documents by contacting the TCEQ Office of the Chief Clerk by phone at (512) 239-3300 or by mail at TCEQ OCC, Notice Team (MC-105), P.O. Box 13087, Austin, Texas 78711.

**PUBLIC COMMENT** / **PUBLIC MEETING.** Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, at the address provided in the information section below by May 28, 2024. A public meeting is intended for the taking of public comment and is not a contested case hearing. A public meeting will be held if the Executive Director determines that there is a significant degree of public interest in the application.

**CONTESTED CASE HEARING.** The TCEQ may grant a contested case hearing on this application if a written hearing request is filed by May 28, 2024. The Executive Director may approve the application unless a written request for a contested case hearing is filed by May 28, 2024.

To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) applicant's name and permit number; (3) the statement "[I/we] request a contested case hearing;" (4) a brief and specific description of how you would be affected by the application in a way not common to the general public; and (5) the location and distance of your property relative to the proposed activity. You may also submit proposed conditions for the requested permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing to the Office of the Chief Clerk at the address provided in the information section below.

If a hearing request is filed, the Executive Director will not issue the permit and will forward the application and hearing request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

**INFORMATION.** Written hearing requests, public comments, or requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at <a href="https://www14.tceq.texas.gov/epic/eComment/">https://www14.tceq.texas.gov/epic/eComment/</a> by entering ADJ 4590 in the search field. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, at the same address.

For additional information, individual members of the general public may contact the Public Education Program at 1-800-687-4040. General information regarding the TCEQ can be found at our web site at <a href="www.tceq.texas.gov">www.tceq.texas.gov</a>. Si desea información en Español, puede llamar al 1-800-687-4040 o por el internet al <a href="http://www.tceq.texas.gov">http://www.tceq.texas.gov</a>.

Issued: April 25, 2024

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## AMENDMENT TO A CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590C

TYPE §§ 11.122, 11.042, 11.085

Owner: Northeast Texas Municipal Address: P.O. Box 955

Water District Hughes Springs, Texas

75656

Filed: August 25, 2022 Granted:

Purposes: Municipal, Domestic, Industrial, Counties: Marion, Upshur, Morris,

and Recreational Titus, and Camp

Watercourses: Dragoo Creek, Tankersley Creek, Watershed: Sabine River Basin

and Big Cypress Creek

WHEREAS, Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County; and

WHEREAS, Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564) on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County; and

WHEREAS, Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin; and

WHEREAS, Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm); and

WHEREAS, Owner is also authorized interbasin transfers of 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes to the Sabine River Basin, and 20,000 acrefeet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes to the Sabine River Basin; and

WHEREAS, Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Creek Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall; and

WHEREAS, Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614; and

WHEREAS, two special conditions apply; and

WHEREAS, the time priority of Owner's right is September 16, 1957; and

WHEREAS, pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to 6,810 acre-feet of water from the Monticello Winfield South Mine to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes; and

WHEREAS, the water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County, owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC; and

WHEREAS, the water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates; and

WHEREAS, the 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends a special condition be included in the amendment; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 04-4590, designated Certificate of Adjudication No. 04-4590C, is issued to Northeast Texas Municipal Water District subject to the following terms and conditions:

#### 1. USE

A. In addition to previous authorizations, Owner is authorized to use the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to 6,810 acre-feet of water for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will be utilized to firm up the Owner's existing water uses authorized in the Certificate without increasing the authorized diversion amounts or rates.

B. Owner is authorized to use the conveyed water in accordance with the authorizations in this certificate, as amended, to store water in and divert water from Lake O' the Pines.

#### 2. DISCHARGE

Owner will discharge up to 6,810 acre-feet of water per year at a maximum discharge rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County.

#### 3. SPECIAL CONDITIONS

- A. Owner shall measure and record the amount of water discharged into Dragoo Creek under this amendment. Owner shall account for this amount in its annual water use report to the Commission.
- B. The authorization in this amendment to convey water is issued contingent on the continued maintenance of an agreement between Owner, Luminant Generation Company, LLC, and Luminant Mining Company, LLC, or any extensions or amendments thereof, allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek. Upon expiration of such agreement, Owner shall immediately cease the discharge and use of any conveyed water under this amendment and either apply to amend the certificate or voluntarily forfeit this amendment. If Owner does not amend the certificate or forfeit the amendment, the Commission may begin proceedings to cancel this amendment. Owner shall immediately notify the Commission upon expiration or termination of an agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek and provide copies of appropriate documents effectuating such changes.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate of Adjudication No. 04-4590, as amended, except as specifically amended herein.

This amendment is issued subject to all superior and senior water right holders in the Cypress Creek Basin.

Owner agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

	For the Commission
Date Issued:	

From: Brian Sledge

**Sent:** Friday, April 19, 2024 1:04 PM

To: Jenna Rollins

Cc: Chris Kozlowski; Humberto Galvan; Michelle Smith; Cathy Daniel

Subject: RE: Northeast Texas Municipal Water District, Application No. 04-4590C Redline Draft

Amendment and Notice

Hi Jenna -

We have reviewed the edits you provided on April 16 to the above-referenced notice and draft amendment. We are satisfied with the changes and think the documents are ready to be forwarded to the Office of the Chief Clerk.

Please let me know if you need anything else from us in the meantime.

Thank you, Brian



**Brian L. Sledge** 

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
P.O. Box 66367, Austin, Texas 78766
512.579.3600 main
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512.579.3611 fax
512.773.8967 mobile

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From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

Sent: Tuesday, April 16, 2024 2:28 PM

To: Brian Sledge

**Cc:** Chris Kozlowski <chris.kozlowski@tceq.texas.gov>; Humberto Galvan <Humberto.Galvan@tceq.texas.gov> **Subject:** Northeast Texas Municipal Water District, Application No. 04-4590C Redline Draft Amendment and Notice

Dear Mr. Sledge,

TCEQ staff has agreed to make the proposed edits to the draft amendment and notice. Please see the attached redline version of the draft amendment and notice for Northeast Texas Municipal Water District, application No. 04-4590C and provide a response by 4/23/24.

Thank you,
Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

From: Brian Sledge

**Sent:** Tuesday, April 16, 2024 2:47 PM

To: Jenna Rollins

Cc: Chris Kozlowski; Humberto Galvan; Michelle Smith

Subject: RE: Northeast Texas Municipal Water District, Application No. 04-4590C Redline Draft

Amendment and Notice

Thanks, Jenna! We will review this and get back to you.

Best, Brian



--

#### **Brian L. Sledge**

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
P.O. Box 66367, Austin, Texas 78766
512.579.3600 main
512.579.3601 direct
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From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

Sent: Tuesday, April 16, 2024 2:28 PM

To: Brian Sledge

**Cc:** Chris Kozlowski <chris.kozlowski@tceq.texas.gov>; Humberto Galvan <Humberto.Galvan@tceq.texas.gov> **Subject:** Northeast Texas Municipal Water District, Application No. 04-4590C Redline Draft Amendment and Notice

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TCEQ staff has agreed to make the proposed edits to the draft amendment and notice. Please see the attached redline version of the draft amendment and notice for Northeast Texas Municipal Water District, application No. 04-4590C and provide a response by 4/23/24.

Thank you, Jenna Rollins, Project Manager Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

From: Jenna Rollins

**Sent:** Tuesday, April 16, 2024 2:28 PM

**To:** Brian Sledge

**Cc:** Chris Kozlowski; Humberto Galvan

**Subject:** Northeast Texas Municipal Water District, Application No. 04-4590C Redline Draft

Amendment and Notice

Attachments: Northeast\_Texas\_Municipal\_Water\_District\_04-4590C\_Redline\_Drafts\_4.16.24.pdf

Dear Mr. Sledge,

TCEQ staff has agreed to make the proposed edits to the draft amendment and notice. Please see the attached redline version of the draft amendment and notice for Northeast Texas Municipal Water District, application No. 04-4590C and provide a response by 4/23/24.

Thank you,
Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



# NOTICE OF AN AMENDMENT TO A CERTIFICATE OF ADJUDICATION

#### APPLICATION NO. 04-4590C

Northeast Texas Municipal Water District (Owner/District) has applied to amend Certificate of Adjudication No. 04-4590 (Certificate) to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to 6,810 acre-feet of water originating from the Monticello Winfield South Mine facility in Titus County to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates. More information on the application and how to participate in the permitting process is given below.

APPLICATION. Northeast Texas Municipal Water District., P.O. Box 955, Hughes Springs, Texas 75656, has applied to the Texas Commission on Environmental Quality to amend Certificate of Adjudication No. 04-4590, pursuant to Texas Water Code §§ 11.122, 11.042 and Texas Commission on Environmental Quality Rules Title 30 Texas Administrative Code (TAC) § 295.1, et seq. Mailed notice to the downstream water right holders of record in the Cypress Creek Basin is required pursuant to Title 30 TAC § 295.161(a), and mailed notice to the Texas Parks and Wildlife Department and the Office of Public Interest Council is required pursuant to Title 30 TAC § 295.161(c).

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564, on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County.

Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes in Marion County, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin.

Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm).

Owner is also authorized interbasin transfers of not to exceed 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes to the Sabine River Basin, and not to exceed 20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes to in the Sabine River Basin.

Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County <u>located in the Cypress Creek Basin to that portion of Harrison County</u> in the Sabine River Basin for use by the City of Marshall.

Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614.

Two Multiple special conditions apply.

The time priority of Owner's right is September 16, 1957.

Pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up to not to exceed 6,810 acre-feet of water from the Monticello Winfield South Mine to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes.

The water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC.

Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates.

The 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County in Zip Code 75455.

The Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if granted, would contain a special condition requiring the District to measure and record the amount of water discharged into Dragoo Creek and maintain the Development Agreement. The application, technical memoranda, and Executive Director's draft permit are available for viewing on the TCEQ web page at: <a href="https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps">https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps</a> Alternatively, you may request a copy of the documents by contacting the TCEQ Office of the Chief Clerk by phone at (512) 239-3300 or by mail at TCEQ OCC, Notice Team (MC-105), P.O. Box 13087, Austin, Texas 78711.

PUBLIC COMMENT / PUBLIC MEETING. Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, at the address provided in the information section below by\_\_\_\_\_\_\_. A public meeting is intended for the taking of public comment and is not a contested case hearing. A public meeting will be held if the Executive Director determines that there is a significant degree of public interest in the application.

CONTESTED CASE HEARING. The TCEQ may grant a contested case	e hearing on this application
if a written hearing request is filed by	The Executive Director
may approve the application unless a written request for a conteste	

To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) applicant's name and permit number; (3) the statement "[I/we] request a contested case hearing;" (4) a brief and specific description of how you would be affected by the application in a way not common to the general public; and (5) the location and distance of your property relative to the proposed activity. You may also submit proposed conditions for the requested permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing to the Office of the Chief Clerk at the address provided in the information section below.

If a hearing request is filed, the Executive Director will not issue the permit and will forward the application and hearing request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

INFORMATION. Written hearing requests, public comments, or requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at <a href="https://www14.tceq.texas.gov/epic/eComment/">https://www14.tceq.texas.gov/epic/eComment/</a> by entering ADJ 4590 in the search field. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, at the same address.

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Issued:

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## AMENDMENT TO A CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590C

TYPE §§ 11.122, 11.042, 11.085

Owner: Northeast Texas Municipal Address: P.O. Box 955

Water District Hughes Springs, Texas

75656

Filed: August 25, 2022 Granted:

Purposes: Municipal, Domestic, Industrial, Counties: Marion, Upshur, Morris,

and Recreational Harrison, Titus, and Camp,

and Franklin

Watercourses: Dragoo Creek, Tankersley Creek, Watersheds: Cypress Creek Basin and

and Big Cypress Creek Sabine River Basin

WHEREAS, Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County; and

WHEREAS, Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564) on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County; and

WHEREAS, Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin; and

WHEREAS, Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm); and

WHEREAS, Owner is also authorized interbasin transfers of not to exceed 18,000 acrefeet of water per year from Lake O' the Pines for industrial purposes to the Sabine River Basin, and not to exceed 20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes to in the Sabine River Basin; and

WHEREAS, Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Creek Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall; and

WHEREAS, Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614; and

WHEREAS, twomultiple special conditions apply; and

WHEREAS, the time priority of Owner's right is September 16, 1957; and

WHEREAS, pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey not to exceed up to 6,810 acre-feet of water from the Monticello Winfield South Mine to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes; and

WHEREAS, the water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County, owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC; and

WHEREAS, the water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates; and

WHEREAS, the 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends a special condition be included in the amendment; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 04-4590, designated Certificate of Adjudication No. 04-4590C, is issued to Northeast Texas Municipal Water District subject to the following terms and conditions:

#### 1. USE

A. In addition to previous authorizations, Owner is authorized to use the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey up tonot to exceed 6,810 acre-feet of water for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will be utilized to firm up the OwnerApplicant's existing water uses

authorized in the Certificate without increasing the authorized diversion amounts or rates.

B. Owner is authorized to use the conveyed water in accordance with the authorizations in this certificate, as amended, to store water in and divert water from Lake O' the Pines.

#### 2. DISCHARGE

Owner will discharge up to 6,810 acre-feet of water per year at a maximum discharge rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County.

#### 3. SPECIAL CONDITIONS

- A. Owner shall measure and record the amount of water discharged into Dragoo Creek under this amendment. Owner shall account for this amount in its annual water use report to the Commission.
- B. The authorization in this amendment to convey water is issued contingent on the continued maintenance of an agreement the Development Agreement between Owner, Luminant Generation Company, LLC, and Luminant Mining Company, LLC, or any extensions or amendments thereof, allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek. Upon expiration of such agreement the Development Agreement, Owner shall immediately cease the dischargediversion and use of any conveyed water under this amendment and either apply to amend the certificate or voluntarily forfeit this amendment. If Owner does not amend the certificate or forfeit the amendment, the Commission may begin proceedings to cancel this amendment. Owner shall immediately notify the Commission upon expiration or termination of an agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek the Development Agreement and provide copies of appropriate documents effectuating such changes.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate of Adjudication No. 04-4590, as amended, except as specifically amended herein.

This amendment is issued subject to all superior and senior water right holders in the Cypress Creek Basin.

Owner agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

For the Commission

Date Issued:



From: Brian Sledge <

**Sent:** Monday, April 15, 2024 4:16 PM

To: Jenna Rollins

Cc: Chris Kozlowski; Humberto Galvan; Michelle Smith; Cathy Daniel

**Subject:** RE: Northeast Texas Municipal Water District, 04-4590C

**Attachments:** 2024.04.15 Letter to TCEQ re Comments on Draft Permit and Notice.pdf

Jenna –

Please find attached for your review a letter setting forth our comments on the draft permit and notice on this application. We appreciate the work you and your team does. Please don't hesitate to let me or Michelle Smith of our firm know if you have any questions.

Thank you, Brian



--

#### **Brian L. Sledge**

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
P.O. Box 66367, Austin, Texas 78766
512.579.3600 main
512.579.3601 direct
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From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

Sent: Monday, April 1, 2024 2:51 PM

To: Brian Sledge

Cc: Chris Kozlowski <chris.kozlowski@tceq.texas.gov>; Humberto Galvan <Humberto.Galvan@tceq.texas.gov>

Subject: Northeast Texas Municipal Water District, 04-4590C

Dear Mr. Sledge,

Please see the attached draft permit and public notice for the Northeast Texas Municipal Water District application No. 04-4590C and provide a response by April 15, 2024.

Thank you, Jenna Rollins, Project Manager Water Rights Permitting Team Water Rights Permitting and Availability Section 512-239-1845



B. Sledge Direct: 512-579-3601 Fax: 512-579-3611

Email:

April 15, 2024

VIA E-Mail

Ms. Jenna Rollins, MC 160 TCEQ Water Rights Permitting and Availability Section Texas Commission on Environmental Quality P.O. Box 13087 Austin, Texas 78711-3087

RE: Application No. 04-4590C:

#### Dear Jenna:

Thank you for the opportunity to review the draft public notice (the "Draft Notice") and amendment to Certificate of Adjudication No. 04-4590 (the "Draft Amendment"), provided via email on April 1, 2024. On behalf of our client, the Northeast Texas Municipal Water District (the "District"), we have reviewed the draft documents and offers the following changes for your consideration and response.

- To clarify the intent of the District's application and this project, the District requests that TCEQ adjust the first paragraph of the Draft Notice to provide that the District is seeking to use the bed and banks of certain creeks "to convey **up to** 6,810 acre-feet of water" from the Monticello Winfield South Mine to Lake O' the Pines. The District may not always convey the entire storage capacity of the storage pond at the Monticello Winfield South Mine.
- The 7<sup>th</sup> and 8<sup>th</sup> paragraphs of the Draft Notice and the 5<sup>th</sup> and 6<sup>th</sup> WHEREAS clauses of the Draft Amendment are incomplete in their descriptions of the existing interbasin transfer authorizations under COA No. 04-4590. The District proposes that these paragraphs be adjusted to provide the following:

"Owner is also authorized interbasin transfers of **not to exceed**-18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes **to the Sabine River Basin**, and **not to exceed**-20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes **in to** the Sabine River Basin."

"Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion

- of Harrison County <u>located in the Cypress Creek Basin to that portion of Harrison</u> <u>County</u> in the Sabine River Basin for use by the City of Marshall."
- The District suggests that the 10<sup>th</sup> and 11<sup>th</sup> paragraphs of the Draft Notice and the 8<sup>th</sup> and 9<sup>th</sup> WHEREAS clauses of the Draft Amendment be adjusted to provide that "**Multiple Two** special conditions apply" and that the time priority of the District's existing water right is "September 16, 1957."
- To be consistent with our request in the first bullet point above, the District asks that TCEQ adjust paragraph 12 of the Draft Notice and the 10<sup>th</sup> WHEREAS clause of the Draft Amendment to provide that the District is seeking to use the bed and banks of certain creeks "to convey **not to exceed up to** 6,810 acre-feet of water" from the Monticello Winfield South Mine to Lake O' the Pines.
- On the first page of the Draft Amendment, the counties of "Marion, Upshur, Morris, Harrison, Titus, Camp, and Franklin" are listed along with the watersheds of "Cypress Creek Basin and Sabine River Basin." To the extent that Harrison and Franklin Counties and the Sabine River Basin are not involved in the transfer of water from the Monticello Winfield South Mine to Lake O' the Pines, the District suggests that TCEQ consider adjusting this portion of the Draft Amendment accordingly.
- To clarify the District's project, the District requests that Use paragraph 1.A. of the Draft Amendment be adjusted to provide that the District is authorized to use the bed and banks of certain creeks "to convey **not to exceed up to** 6,810 acre-feet of water." Also, this Use paragraph 1.A. references the "Applicant's" existing water uses when it should be the "Owner's" existing water uses.
- Special Condition paragraph 3.B. makes the Draft Amendment, once issued, "contingent on the continued maintenance of the Development Agreement between Owner, Luminant Generation Company, LLC, and Luminant Mining Company, LLC, or any extensions or amendment thereof." The current Development Agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC is meant to outline how the parties will implement the steps necessary to allow the District to legally store water on the Luminant property and discharge from that property into Dragoo Creek. The Development Agreement, among other things, contemplates the execution of an Access and Inundation Easement and a Water Storage Agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC. Such legal documents will be the long-term documents in place for this project and will allow the District to store water in off-channel ponds and discharge into Dragoo creek. Thus, the Draft Amendment, once issued, should be contingent on "the continued maintenance of the Development Agreement an agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC, or any extensions or amendments thereof, allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek." Additionally, Special Condition paragraph 3.B. of the Draft

Agreement should be adjusted to provide that "upon expiration of the Development Agreement such agreement, Owner shall immediately cease diversion the discharge and use of any conveyed water under this amendment...". Finally, Special Condition paragraph 3.B. should be adjusted to provide that the District "shall immediately notify the Commission upon expiration or termination of the Development Agreement an agreement between the District, Luminant Generation Company, LLC and Luminant Mining Company, LLC allowing the District access to and use of Luminant's property for water storage and discharge into Dragoo Creek..."

I look forward to working with you and TCEQ staff on this matter. If you have any questions, please feel free to contact me or Michelle Smith (512-589-8793 or of our firm.

Sincerely,

Brian Sledge

cc: Wayne Owen, NETMWD
Scott Mills, Luminant
Tony Smith, Carollo Engineering
Michelle Smith, SledgeLaw Group

From: Brian Sledge

**Sent:** Monday, April 15, 2024 4:10 PM

To: Jenna Rollins

Cc: Chris Kozlowski; Humberto Galvan; Michelle Smith; Cathy Daniel

Subject: RE: Northeast Texas Municipal Water District, 04-4590C

Jenna –

Please disregard the request below for an extension. I'm fixing to send you our comments.

Thanks, Brian

From: Brian Sledge [mailto:bsledge@sledgelaw.com]

Sent: Monday, April 15, 2024 1:23 PM

To: 'Jenna Rollins' < Jenna. Rollins@tceq.texas.gov>

Cc: 'Chris Kozlowski' <chris.kozlowski@tceq.texas.gov>; 'Humberto Galvan' <Humberto.Galvan@tceq.texas.gov>;

Michelle Smith Cathy Daniel

Subject: RE: Northeast Texas Municipal Water District, 04-4590C

Hey Jenna -

Would you mind giving us a one-week extension until next Monday to get our comments to you, and before you forward it to the Chief Clerk? I may can have them before 5 PM today, but still working on a couple of items and thought it would be better to be correct than quick. Please let me know at your earliest convenience.

Thanks, Brian



--

#### **Brian L. Sledge**

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
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From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

Sent: Monday, April 1, 2024 2:51 PM

To: Brian Sledge

**Cc:** Chris Kozlowski < <a href="mailto:chris.kozlowski@tceq.texas.gov">chris.kozlowski@tceq.texas.gov</a>>; Humberto Galvan < <a href="mailto:humberto.Galvan@tceq.texas.gov">humberto.Galvan@tceq.texas.gov</a>>

**Subject:** Northeast Texas Municipal Water District, 04-4590C

Dear Mr. Sledge,

Please see the attached draft permit and public notice for the Northeast Texas Municipal Water District application No. 04-4590C and provide a response by April 15, 2024.

Thank you, Jenna Rollins, Project Manager Water Rights Permitting Team Water Rights Permitting and Availability Section 512-239-1845

From: Brian Sledge

**Sent:** Tuesday, April 2, 2024 10:49 AM

To: Jenna Rollins

Cc: Chris Kozlowski; Humberto Galvan; Michelle Smith

Subject: RE: Northeast Texas Municipal Water District, 04-4590C

Thank you, Jenna. We will review this and get back to you with our comments before the deadline. We appreciate you and your team's work.

Kind regards, Brian



--

#### **Brian L. Sledge**

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
P.O. Box 66367, Austin, Texas 78766
512.579.3600 main
512.579.3601 direct
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From: Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

**Sent:** Monday, April 1, 2024 2:51 PM

To: Brian Sledge

Cc: Chris Kozlowski <chris.kozlowski@tceq.texas.gov>; Humberto Galvan <Humberto.Galvan@tceq.texas.gov>

Subject: Northeast Texas Municipal Water District, 04-4590C

Dear Mr. Sledge,

Please see the attached draft permit and public notice for the Northeast Texas Municipal Water District application No. 04-4590C and provide a response by April 15, 2024.

Thank you, Jenna Rollins, Project Manager Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

From: Jenna Rollins

**Sent:** Monday, April 1, 2024 2:51 PM

**To:** Brian Sledge

**Cc:** Chris Kozlowski; Humberto Galvan

**Subject:** Northeast Texas Municipal Water District, 04-4590C

Attachments: Northeast\_Texas\_Municipal\_Water\_District\_04-4590C\_Drafts\_Sent\_4.1.24.pdf

Dear Mr. Sledge,

Please see the attached draft permit and public notice for the Northeast Texas Municipal Water District application No. 04-4590C and provide a response by April 15, 2024.

Thank you,
Jenna Rollins, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section
512-239-1845

Jon Niermann, *Chairman*Bobby Janecka, *Commissioner*Catarina R. Gonzales, *Commissioner*Kelly Keel, *Executive Director* 



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 1, 2024

Mr. Brian Sledge Sledge Law Group, PLLC 919 Congress Avenue, Suite 460 Austin, Texas 78701 **VIA E-MAIL** 

RE: Northeast Texas Municipal Water District

ADJ 4590

CN601368368, RN103186771

Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590  $\,$ 

Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin

**Marion County** 

Dear Mr. Sledge:

Drafts, subject to revision, of the public notice, proposed amendment to Certificate of Adjudication No. 04-4590, and the related technical memoranda are attached.

Staff is recommending that the referenced application be granted in accordance with the attached drafts. Please review the drafts and contact me no later than April 15, 2024 with any comments or questions as the amendment will be forwarded to the Office of the Chief Clerk for further processing after that date.

If you have any questions concerning this matter, please contact me via email at jenna.rollins@tceq.texas.gov or by telephone at (512) 239-1845.

Sincerely,

Jenna Rollins, Project Manager Water Rights Permitting Team

enna Rollins

Water Rights Permitting and Availability Section

Attachments

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



# NOTICE OF AN AMENDMENT TO A CERTIFICATE OF ADJUDICATION

#### APPLICATION NO. 04-4590C

Northeast Texas Municipal Water District (Owner/District) has applied to amend Certificate of Adjudication No. 04-4590 (Certificate) to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey 6,810 acre-feet of water originating from the Monticello Winfield South Mine facility in Titus County to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates. More information on the application and how to participate in the permitting process is given below.

APPLICATION. Northeast Texas Municipal Water District., P.O. Box 955, Hughes Springs, Texas 75656, has applied to the Texas Commission on Environmental Quality to amend Certificate of Adjudication No. 04-4590, pursuant to Texas Water Code §§ 11.122, 11.042 and Texas Commission on Environmental Quality Rules Title 30 Texas Administrative Code (TAC) § 295.1, et seq. Mailed notice to the downstream water right holders of record in the Cypress Creek Basin is required pursuant to Title 30 TAC § 295.161(a), and mailed notice to the Texas Parks and Wildlife Department and the Office of Public Interest Council is required pursuant to Title 30 TAC § 295.161(c).

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564, on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County.

Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes in Marion County, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin.

Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm).

Owner is also authorized interbasin transfers of not to exceed 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes and not to exceed 20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes in the Sabine River Basin.

Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County in the Sabine River Basin for use by the City of Marshall.

Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614.

Multiple special conditions apply.

The time priority of Owner's right is September 6, 1957.

Pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey not to exceed 6,810 acre-feet of water to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes.

The water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC.

Water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates.

The 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County in Zip Code 75455.

The Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if granted, would contain a special condition requiring the District to measure and record the amount of water discharged into Dragoo Creek and maintain the Development Agreement. The application, technical memoranda, and Executive Director's draft permit are available for viewing on the TCEQ web page at: <a href="https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps">https://www.tceq.texas.gov/permitting/water\_rights/wr-permitting/view-wr-pend-apps</a> Alternatively, you may request a copy of the documents by contacting the TCEQ Office of the Chief Clerk by phone at (512) 239-3300 or by mail at TCEQ OCC, Notice Team (MC-105), P.O. Box 13087, Austin, Texas 78711.

PUBLIC COMMENT / PUBLIC MEETING. Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, at the address provided in the information section below by\_\_\_\_\_\_\_. A public meeting is intended for the taking of public comment and is not a contested case hearing. A public meeting will be held if the Executive Director determines that there is a significant degree of public interest in the application.

**CONTESTED CASE HEARING.** The TCEQ may grant a contested case hearing on this application

if a written hearing request is filed by	The Executive Director
may approve the application unless a written request fo	

To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) applicant's name and permit number; (3) the statement "[I/we] request a contested case hearing;" (4) a brief and specific description of how you would be affected by the application in a way not common to the general public; and (5) the location and distance of your property relative to the proposed activity. You may also submit proposed conditions for the requested permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing to the Office of the Chief Clerk at the address provided in the information section below.

If a hearing request is filed, the Executive Director will not issue the permit and will forward the application and hearing request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

INFORMATION. Written hearing requests, public comments, or requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at <a href="https://www14.tceq.texas.gov/epic/eComment/">https://www14.tceq.texas.gov/epic/eComment/</a> by entering ADJ 4590 in the search field. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, at the same address.

For additional information, individual members of the general public may contact the Public Education Program at 1-800-687-4040. General information regarding the TCEQ can be found at our web site at <a href="www.tceq.texas.gov">www.tceq.texas.gov</a>. Si desea información en Español, puede llamar al 1-800-687-4040 o por el internet al <a href="http://www.tceq.texas.gov">http://www.tceq.texas.gov</a>.

Issued:

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## AMENDMENT TO A CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590C

TYPE §§ 11.122, 11.042, 11.085

Owner: Northeast Texas Municipal Address: P.O. Box 955

Water District Hughes Springs, Texas

75656

Filed: August 25, 2022 Granted:

Purposes: Municipal, Domestic, Industrial, Counties: Marion, Upshur, Morris,

and Recreational Harrison, Titus, Camp, and

Franklin

Watercourses: Dragoo Creek, Tankersley Creek, Watersheds: Cypress Creek Basin and

and Big Cypress Creek Sabine River Basin

WHEREAS, Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Owner/District), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County; and

WHEREAS, Owner is also authorized to divert and use not to exceed 42,000 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin (authorized under Certificate of Adjudication No. 04-4564) on Cypress Creek, Cypress Creek Basin for municipal and domestic purposes in Marion County; and

WHEREAS, Owner is further authorized to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes, of which not more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin; and

WHEREAS, Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm), and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85.00 cfs (38,250 gpm); and

WHEREAS, Owner is also authorized interbasin transfers of not to exceed 18,000 acrefeet of water per year from Lake O' the Pines for industrial purposes and not to exceed 20,000 acre-feet of water per year from Lake O' the Pines, at a maximum diversion rate of 100 cfs (44,883 gpm), for municipal and industrial purposes in the Sabine River Basin; and

WHEREAS, Owner is also authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines for municipal, domestic, and industrial purposes from that portion of Harrison County in the Sabine River Basin for use by the City of Marshall; and

WHEREAS, Owner is further authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points, and to the City of Marshall's diversion point authorized under Certificate of Adjudication No. 04-4614; and

WHEREAS, multiple special conditions apply; and

WHEREAS, the time priority of Owner's right is September 6, 1957; and

WHEREAS, pursuant to a Development Agreement between Luminant Generation Company LLC, Luminant Mining Company LLC, and the District, the District seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey not to exceed 6,810 acre-feet of water to Lake O' the Pines for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes; and

WHEREAS, the water to be conveyed originates from the Monticello Winfield South Mine facility in Titus County, owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC; and

WHEREAS, the water authorized to be conveyed under this amendment will provide enhanced streamflow to support riparian habitat and will subsequently be utilized to firm up the District's existing water rights authorized in the Certificate without increasing the authorized diversion amounts or rates; and

WHEREAS, the 6,810 acre-feet of water per year will be discharged at a maximum rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends a special condition be included in the amendment; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 04-4590, designated Certificate of Adjudication No. 04-4590C, is issued to Northeast Texas Municipal Water District subject to the following terms and conditions:

#### 1. USE

A. In addition to previous authorizations, Owner is authorized to use the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey not to exceed 6,810 acre-feet of water for subsequent diversion and use for municipal, domestic, industrial, and recreational purposes. Water authorized to be conveyed under this amendment will be utilized to firm up the Applicant's existing water uses authorized in the Certificate without increasing the authorized diversion amounts or rates.

B. Owner is authorized to use the conveyed water in accordance with the authorizations in this certificate, as amended, to store water in and divert water from Lake O' the Pines.

#### 2. DISCHARGE

Owner will discharge up to 6,810 acre-feet of water per year at a maximum discharge rate of 50 cfs (22,441 gpm), at a point on Dragoo Creek, located at Latitude 33.155595° N, Longitude 95.028318° W in Titus County.

#### 3. SPECIAL CONDITIONS

- A. Owner shall measure and record the amount of water discharged into Dragoo Creek under this amendment. Owner shall account for this amount in its annual water use report to the Commission.
- B. The authorization in this amendment to convey water is issued contingent on the continued maintenance of the Development Agreement between Owner, Luminant Generation Company, LLC, and Luminant Mining Company, LLC, or any extensions or amendments thereof. Upon expiration of the Development Agreement, Owner shall immediately cease diversion and use of any conveyed water under this amendment and either apply to amend the certificate or voluntarily forfeit this amendment. If Owner does not amend the certificate or forfeit the amendment, the Commission may begin proceedings to cancel this amendment. Owner shall immediately notify the Commission upon expiration of the Development Agreement and provide copies of appropriate documents effectuating such changes.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate of Adjudication No. 04-4590, as amended, except as specifically amended herein.

This amendment is issued subject to all superior and senior water right holders in the Cypress Creek Basin.

Owner agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

	For the Commission
Date Issued:	

#### Texas Commission on Environmental Quality

#### INTEROFFICE MEMORANDUM

To: Jenna Rollins, Project Manager Date: July 6, 2023

Water Rights Permitting Team

Through Kathy Alexander, Ph.D., Policy and Technical Analyst

Water Availability Division

TG Trent Gay, Team Leader

Surface Water Availability Team

From: Andrew Garcia, Hydrologist

Surface Water Availability Team

Subject: Northeast Texas Municipal Water District

ADJ 4590 CN601368368

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress

Creek Basin Marion County

#### **HYDROLOGY REVIEW**

#### **Application Summary**

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Applicant), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

The Certificate also authorizes the Applicant to divert 42,000 acre-feet of water per year for municipal and domestic purposes from Lake O' the Pines and Lake Bob Sandlin and 161,800 acre-feet of water per year for industrial purposes from Lake O' the Pines and Lake Bob Sandlin on Cypress Creek, Cypress Creek Basin in Marion County. Applicant is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm).

Applicant seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey 6,810 acre-feet of water from an off-channel reservoir to Lake O' the Pines for municipal, domestic, industrial, and recreational purposes in the Cypress Creek Basin. Water authorized to be conveyed under this amendment will be utilized to firm up existing water uses authorized in COA 04-4590 without increasing the authorized diversion amounts or rates.

The application was declared administratively complete on August 25, 2022.

#### **Hydrology Review**

Resource Protection Staff did not recommend that the application be subject to instream flow requirements. See Resource Protection staff's June 20, 2023 memorandum.

The application does not request a new appropriation of water; therefore, a water availability analysis is not necessary. However, the application must be reviewed to ensure no water rights are affected by the request.

Regarding the request to use the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey water from an off-channel reservoir, the application included the information required in 30 Texas Administrative Code (TAC) §295.113. Staff evaluated the Applicant's estimated conveyance losses and found them adequate.

The Applicant submitted an analysis using a water availability model (WAM) indicating that the conveyed water could increase the firm yield of its existing water rights under the Certificate. Staff reviewed the applicant's WAM and found it provides support for the requested amendment.

Provided the Applicant accounts for the conveyed water and the amount of water to be diverted, staff's opinion is that this amendment will have no impact on other water rights.

#### Conclusion

Staff can support granting the application provided the following special conditions are included in the amendment:

1. Owner shall measure and record the amount of water discharged into Dragoo Creek under this amendment. Owner shall account for this amount in its annual water use report to the Commission.

Andrew Garcia, Hydrologist

# **Texas Commission on Environmental Quality**

#### INTEROFFICE MEMORANDUM

Jenna Rollins, Project Manager **Date:** June 20, 2023 To:

Water Rights Permitting Team

Leslie Patterson, Team Leader Through:

Resource Protection Team

Trent Jennings, Water Conservation Specialist From:

Resource Protection Team

Subject: Northeast Texas Municipal Water District

> ADJ 4590 CN601368368

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress

Creek Basin Marion County

#### APPLICATION SUMMARY

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Applicant), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

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Applicant seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey 6,810 acre-feet of water from an off-channel reservoir to Lake O' the Pines for municipal, domestic, industrial, and recreational purposes to firm up the Applicant's existing water rights in the Cypress Creek Basin. Water authorized by this amendment will be utilized to firm up existing water uses authorized in Certificate of Adjudication No. 04-4590 without increasing diversion amounts or rates.

#### WATER CONSERVATION REVIEW

Pursuant to Title 30 Texas Administrative Code §295.9, water conservation and drought contingency plans are not required to be submitted for this application. Northeast Texas Municipal Water District, 04-4590C Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin Page 2 of 2

The application is consistent with the 2021 Region D Water Plan and the 2022 State Water Plan because there is nothing in the water plans that conflicts with issuing this proposed amendment.

#### **RECOMMENDATIONS**

Resource Protection Staff have no recommendations regarding the proposed amendment, if granted.

Trent Jennings
Trent Jennings, Water Conservation Specialist

# **Texas Commission on Environmental Quality**

INTEROFFICE MEMORANDUM

**To:** Jenna Rollins, Project Manager **Date:** June 20, 2023

Water Rights Permitting Team

Through: Leslie Patterson, Team Leader

Resource Protection Team

**From:** George Gable, Aquatic Scientist

Resource Protection Team

**Subject:** Northeast Texas Municipal Water District

ADJ 4590 CN601368368

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress

Creek Basin Marion County

Environmental reviews of water right applications are conducted in accordance with applicable provisions of the Texas Water Code (TWC) and the administrative rules of the Texas Commission on Environmental Quality (TCEQ). The provisions applicable to environmental reviews can vary according to the type and the location of the authorization requested.

#### **APPLICATION SUMMARY**

Certificate of Adjudication No. 04-4590 (Certificate) authorizes Northeast Texas Municipal Water District (Applicant), among other things, to store 251,000 acre-feet of water in Lake O' the Pines, owned by the United States and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreational purposes in Marion County.

The Certificate also authorizes the Applicant to divert 42,000 acre-feet of water per year for municipal and domestic purposes from Lake O' the Pines and Lake Bob Sandlin and 161,800 acre-feet of water per year for industrial purposes from Lake O' the Pines and Lake Bob Sandlin on Cypress Creek, Cypress Creek Basin in Marion County. Applicant is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm).

Applicant seeks to amend Certificate of Adjudication No. 04-4590 to authorize the use of the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey 6,810 acre-feet of water from an off-channel reservoir to Lake O' the Pines for municipal, domestic, industrial, and recreational purposes to firm up the Applicant's existing water rights in the Cypress Creek Basin. Water authorized by this amendment will be utilized to firm up existing water uses authorized in Certificate of Adjudication No. 04-4590 without increasing diversion amounts or rates.

Northeast Texas Municipal Water District, ADJ 4590C Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin Page 2 of 4

#### **ENVIRONMENTAL ANALYSIS**

**Aquatic and Riparian Habitats:** Dragoo Creek an intermittent stream with perennial pools, Tankersley Creek a perennial stream, and Big Cypress Creek a perennial stream are located in the Northern Post Oak Savanna and the Tertiary Uplands ecoregions (Griffith et al. 2007).

The checklist for the Cypress River Basin identified 53 species of ichthyofauna occurring within Lake O' the Pines hydrologic unit (United States Geologic Survey code 11140305 (Hendrickson and Cohen 2015). The bluehead shiner (*Pteronotropis hubbsi*), paddlefish (*Polyodon spathula*), a crustacean (*Orconectes maletae*), Louisiana pigtoe (*Pleurobema riddellii*), southern hickorynut (*Obovaria arkansasensis*), and alligator snapping turtle (*Macrochelys temminckii*), high-interest aquatic species, have been determined to occur in Marion County (TPWD 2015). This amendment is not expected to have an effect on any high-interest aquatic or aquatic-dependent species, because water discharged into Dragoo Creek will provide enhanced streamflow within the Cypress Creek Basin to support instream riparian habitat for high interest species including *P. spathula*.

The TCEQ regulates bed and banks authorizations to convey water under the authority of TWC §11.042. That provision allows the commission to place special conditions in the authorization to "maintain instream uses and freshwater inflows to bays and estuaries." "Streamflow, which is strongly correlated with many critical physicochemical characteristics of rivers such as water temperature, channel geomorphology and habitat diversity, can be considered the 'master variable' that limits the distribution and abundance of riverine species and regulates the ecological integrity of flowing water systems" (Resh et al. 1988; Power et al. 1995; Poff et al. 1997). Maintaining the natural flow regime, or streamflow variability, plays a critical role in sustaining native biodiversity and ecosystem integrity in rivers (Poff et al. 1997). The TCEQ desktop methodology for determining environmental flow restrictions, excluding basins with adopted environmental flow standards, is the Lyons Method. The Lyons Method establishes minimum flows of 40% of the median monthly flows for October through February and 60% of the median monthly flows for March through September in order to protect aquatic habitat (Bounds et al. 1979). This methodology produces flow numbers for each month of the year to mimic natural flow patterns (Bounds et al. 1979). Resource Protection staff do not recommend a streamflow restriction because the Applicant requests only to use the bed and banks of Dragoo Creek, Tankersley Creek, and Big Cypress Creek to convey 6,810 acre-feet of water from an off-channel reservoir to Lake O' the Pines for subsequent diversion of 6,469.50 acre-feet of water The Applicant does not request to change diversion or discharge amounts, rates, or points. The Applicant's request is not expected to adversely impact aquatic and riparian habitats in the area.

**Recreational Uses:** Dragoo Creek has a presumed primary contact recreation 1 use (TCEQ 2022a). According to Appendix G of the Texas Surface Water Quality

Northeast Texas Municipal Water District, ADJ 4590C Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin Page 3 of 4

Standards, Tankersley Creek from the confluence with Big Cypress Creek upstream to the confluence with tributary 0.25 km upstream of IH 30 has a secondary contact recreation 1 use. Big Cypress Creek Below Lake Bob Sandlin (Segment 0404) has a designated secondary contact recreation 1 use. The Applicant's request should not adversely impact recreational uses.

**Water Quality:** Dragoo Creek has a presumed limited aquatic life use (TCEQ 2022a). According to Appendix D of the Texas Surface Water Quality Standards, Tankersley Creek has a designated high aquatic life use. Big Cypress Creek Below Lake Bob Sandlin (Segment 0404) has a designated intermediate aquatic life use. Dragoo Creek from the confluence with Tankersley Creek to the headwaters approximately 2 mi NW of US 67 was identified in the Texas Integrated Report with concern for non-attainment for bacteria and screening levels of dissolved oxygen (TCEQ 2022b). Tankersley Creek from the confluence with Big Cypress Creek upstream to the headwaters in Titus County was identified in the Texas Integrated Report with concern for non-attainment of impaired macrobenthic community and concern for screening levels of depressed dissolved oxygen, impaired habitat, nitrate, and chlorophyll-a. Tankersley Creek was also identified in the Texas Integrated Report as non-supporting for bacteria. The Applicant's request should not adversely impact water quality.

**Freshwater Inflows:** Freshwater inflows are critical for maintaining the historical productivity of bays and estuaries along the Gulf Coast. The proposed project site is located near the Texas and Louisiana border and is significantly more than 200 river miles from the Gulf Coast. The project should not impact Texas bays and estuaries because the stream does not flow to a bay or estuary in Texas.

#### **RECOMMENDATIONS**

Resource Protection staff have no recommendations regarding this proposed amendment, if granted.

#### LITERATURE CITED

Bounds RL, Lyons BW, Travis CD. 1979. Statewide Fishery Management Recommendations: Existing Reservoir and Stream Management Recommendations, Statewide Minimum Streamflow Recommendations. Federal Aid Project F-30-R-4. Austin (TX): Texas Parks and Wildlife Department.

Griffith GE, Bryce SA, Omernik JM, Rogers AC. 2007. Ecoregions of Texas - Project Report to Texas Commission on Environmental Quality. Reston (VA): U.S. Geological Survey. Report No.: AS-199. 125p.

Northeast Texas Municipal Water District, ADJ 4590C Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin Page 4 of 4

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Power ME, Sun A, Parker M, Dietrich WE, Wootton JT. 1995. Hydraulic food-chain models: an approach to the study of food-web dynamics in large rivers. BioScience. 45:159-167.

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TCEQ. 2022a. Texas Surface Water Quality Standards §§307.1-307.10. Austin (TX): Texas Commission on Environmental Quality.

TCEQ. 2022b. Texas Integrated Report of Surface Water Quality. Austin (TX): Texas Commission on Environmental Quality.

TPWD. 2015. Texas Parks and Wildlife Department, Wildlife Division, Diversity and Habitat Programs. TPWD County Lists of Protected Species and Species of Greatest Conservation Need [Internet]. Austin (TX): Titus County, revised January 4, 2023. [2023 January 20]. Available from http://tpwd.texas.gov/gis/rtest/.

Geroge W Gable AV
George Gable, Aquatic Scientist

# **TCEQ Interoffice Memorandum**

TO: Office of the Chief Clerk

Texas Commission on Environmental Quality

THRU: Chris Kozlowski, Team Leader

Water Rights Permitting Team

FROM: Jenna Rollins, Project Manager

Water Rights Permitting Team

DATE: August 25, 2022

SUBJECT: Northeast Texas Municipal Water District

ADJ 4590

CN601368368, RN103186771

Application No. 04-4590C to Amend Certificate of Adjudication

No. 04-4590

Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress

Creek Basin Marion County

The application and partial fees were received on June 22, 2022. Additional fees were received on August 17, 2022. The application was declared administratively complete and accepted for filing with the Office of the Chief Clerk on August 25, 2022. Mailed notice to the downstream water right holders of record in the Cypress Creek Basin is required pursuant to Title 30 Texas Administrative Code (TAC) § 295.161(a), and mailed notice to the Texas Parks and Wildlife Department and the Office of Public Interest Council is required pursuant to Title 30 TAC § 295.161(c).

All fees have been paid and the application is sufficient for filing.

Jenna Rollins, Project Manager

Water Rights Permitting Team

Jenna Rollins

Water Rights Permitting and Availability Section

Jon Niermann, Chairman Emily Lindley, Commissioner Bobby Janecka, Commissioner Toby Baker, Executive Director



#### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 25, 2022

Mr. Brian Sledge Sledge Law Group, PLLC 919 Congress Avenue, Suite 460 Austin, Texas 78701

VIA E-MAIL

RE: Northeast Texas Municipal Water District

ADJ 4590

CN601368368, RN103186771

Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590

Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin

Marion County

Dear Mr. Sledge:

This acknowledges receipt, on August 17, 2022, of additional fees in the amount of \$12.22 (Receipt No. M220396, copy attached).

The application was declared administratively complete and filed with the Office of the Chief Clerk on August 25, 2022. Staff will continue processing the application for consideration by the Executive Director.

Please be advised that additional information may be requested during the technical review phase of the application process.

If you have any questions concerning the application, please contact me via email at jenna.rollins@tceq.texas.gov or by phone at 512-239-1845.

Sincerely,

Jenna Rollins, Project Manager Water Rights Permitting Team

Jenna Rollins

Water Rights Permitting and Availability Section

Attachment



#### TCEQ - A/R RECEIPT REPORT BY ACCOUNT NUMBER

Fee Description	Fee Code Account# Account Name	Ref#1 Ref#2 Paid In By	Check Number Card Auth. User Data	CC Type Tran Code Rec Code	Slip Key	Tran Date	Tran Amount
NOTICE FEES-WUP- WATER USE PERM	PTGU PTGU NOTICE FEES WUP WATER USE PERMITS	M220396 ADJ4590 SLEDGEWAY GROUP PLLC	2594 081722 VHERNAND	N CK	BS00096857 D2803295	17-AUG-22	-\$12.22
				Total	(Fee Code):		-\$12.22

Page 1 of 3



AUG 19 2022

#### **Jenna Rollins**

From: Brian Sledge

Sent: Wednesday, August 10, 2022 3:16 PM

To: Jenna Rollins
Cc: Cathy Daniel

**Subject:** RE: Northeast Texas Municipal Water District, 04-4590C

Hi Jenna -

Thanks for your letter. We thought we had identified all of the fees for this project with y'all's water rights team, but we will get a check in the mail to you for this remaining \$12.22.

Please let me know if you have other questions on this application.

Kind regards, Brian



--

#### **Brian L. Sledge**

SledgeLaw Group, PLLC
Attorneys at Law · Governmental Relations
919 Congress Ave. Ste. 460, Austin, Texas 78701
512.579.3600 main
512.579.3601 direct
512.579.3611 fax
512.773.8967 mobile

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**From:** Jenna Rollins [mailto:Jenna.Rollins@tceq.texas.gov]

Sent: Tuesday, August 9, 2022 11:13 AM

To:

Subject: Northeast Texas Municipal Water District, 04-4590C

Dear Mr. Sledge,

Please see the attached request for information letter for the Northeast Texas Municipal Water District application No. 04-4590C.

Best regards, Jenna Rollins, Project Manager Water Rights Permitting Team Water Rights Permitting and Availability Section 512-239-1845 Jon Niermann, *Chairman*Emily Lindley, *Commissioner*Bobby Janecka, *Commissioner*Toby Baker, *Executive Director* 



#### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 9, 2022

**VIA-EMAIL** 

Mr. Brian Sledge Sledge Law Group, PLLC 919 Congress Avenue, Suite 460 Austin, Texas 78701

RE: Northeast Texas Municipal Water District

ADJ 4590

CN601368368, RN103186771

Application No. 04-4590C to Amend Certificate of Adjudication No. 04-4590 Texas Water Code §§ 11.042, 11.122, Requiring Limited Mailed Notice

Dragoo Creek, Tankersley Creek, and Big Cypress Creek, Cypress Creek Basin

Marion County

Dear Mr. Sledge:

This acknowledges receipt, on June 22, 2022, of the referenced application and fees in the amount of \$112.50 (Receipt No. M218597, copy attached).

Additional fees are required before the application can be declared administratively complete.

Remit fees in the amount of \$12.22 as described below. Please make checks payable to the TCEO or Texas Commission on Environmental Quality.

Filing Fee (Amendment)	\$ 100.00
Recording Fee	\$ 12.50
Notice Fee (\$0.94 x 13 downstream water right holders)	\$ 12.22
TOTAL FEES	\$ 124.72
FEES RECEIVED	\$ 112.50
BALANCE DUE	\$ 12.22

Please provide the requested fees by September 8, 2022 or the application may be returned pursuant to 30 Texas Administrative Code § 281.18.

If you have any questions concerning this matter, please contact me via email at jenna.rollins@tceq.texas.gov or by telephone at (512) 239-1845.

Sincerely,

Jenna Rollins

Jenna Rollins, Project Manager Water Rights Permitting Team

Water Rights Permitting and Availability Section

Attachment

# TCEQ 24-JUN-22 11:47 AM

#### TCEQ - A/R RECEIPT REPORT BY ACCOUNT NUMBER

Fee Description	Fee Code Account# Account Name	Ref#1 Ref#2 Paid In By	Check Number Card Auth. User Data	CC Type Tran Code Rec Code	Slip Key Document#	Tran Date	Tran Amount
WTR USE PERMITS	WUP WUP WATER USE PERMITS	M218597 SLEDGELAW	2581 062422 RHDAVIS	N CK	BS00095700 D2802956	24-JUN-22	-\$112.50
	WUP WUP WATER USE PERMITS	GROUP PLLC M218598 ADJ141573 MURR,	10450 062422 RHDAVIS	N CK	BS00095700 D2802956	24-JUN-22	-\$100.00
	WUP WUP WATER USE PERMITS	DOROTHY M218599 ADJ141599 MURR,	10451 062422 RHDAVIS	N CK	BS00095700 D2802956	24-JUN-22	-\$100.00
		DOROTHY	MIDITO ID		(Fee Code):		-\$312.50
				Grand Total	:		-\$12,543.75

Page 6 of 6



JUN 27 2022

Water Availability Division

# Northeast Texas Municipal Water District

Application for a Bed and Banks Authorization on the Big Cypress Creek Basin



June 22, 2022

Brooke McGregor, MC 160 TCEQ Water Availability Division Texas Commission on Environmental Quality P.O. Box 13087 Austin, Texas 78711-3087

RE: Application for a Bed and Banks Authorization on the Big Cypress Creek Basin

Dear Brooke:

Enclosed please find an original application to amend Certificate of Adjudication No. 04-4590 to add an authorization to use the bed and banks of Dragoo Creek, Tankersley Creek and Cypress Creek to transport water released from an off-channel storage pond to Lake O' the Pines. Also included is a check for \$112.50 to cover filing fees. A copy of this application is being sent via email for your use.

I look forward to working with you and TCEQ staff on this matter. If you have any questions, please feel free to contact me or Michelle Smith (512-589-8793 or

Sincerely,

Brian Sledge

cc: Walt Sears, NETMWD
Sid Stroud, Luminant
Tony Smith, Carollo Engineering
Michelle Smith, SledgeLaw Group

#### **Attachments**

- 1. Application to Amend COA 04-4590 to add a bed and banks authorization
- 2. NETMWD Signatory Authority
- 3. Technical Information Report
- 4. Maps
  - a. Maps Showing Project Details
  - b. USGS Map of Discharge
- 5. Water Availability Analysis Information
  - a. 2019 Tankersley Creek Study
    - i. Appendices
    - ii. TM1 WAM Data
  - b. 2021 Update to Water Availability Analysis
    - i. Attachment 1 WAM Files
    - ii. Attachment 2 Flood Mapping
- 6. Development Agreement for access to storage ponds
- 7. Water Quality Information
  - a. Water Quality Sampling Summary
  - b. Existing TPDES Permit No. WQ0002697000 for the Monticello Lignite Mining Area
- 8. NETMWD Water Conservation and Drought Contingency Plans
  - a. Water Conservation Plan
  - b. Drought Contingency Plan
- 9. COA 04-4590

#### **Table of Contents**

- 1. Application to Amend COA 04-4590 to add a bed and banks authorization
- 2. NETMWD Signatory Authority
- 3. Technical Information Report
- 4. Maps
  - a. Maps Showing Project Details
  - b. USGS Map of Discharge
- 5. Water Availability Analysis Information
  - a. 2019 Tankersley Creek Study
    - i. Appendices
    - ii. TM1 WAM Data
  - b. 2021 Update to Water Availability Analysis
    - i. Attachment 1 WAM Files
    - ii. Attachment 2 Flood Mapping
- 6. Development Agreement for access to storage ponds
- 7. Water Quality Information
  - a. Water Quality Sampling Summary
  - b. Existing TPDES Permit No. WQ0002697000 for the Monticello Lignite Mining Area
- 8. NETMWD Water Conservation and Drought Contingency Plans
  - a. Water Conservation Plan
  - b. Drought Contingency Plan
- 9. COA 04-4590

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

### TCEQ WATER RIGHTS PERMITTING APPLICATION

### ADMINISTRATIVE INFORMATION CHECKLIST

Complete and submit this checklist for each application. See Instructions Page. 5.

APPLICANT(S): Northeast Texas Municipal Water District

Indicate whether the following items are included in your application by writing either Y (for yes) or N (for no) next to each item (all items are <u>not</u> required for every application).

Y/N		Y/N	RECEIVED
Yes	Administrative Information Report	Yes	_ <b>Worksheet 3.0</b>
NA	_ Additional Co-Applicant Information	NA	_ Additional W.S 3.0 To react point Division
NA	_ Additional Co-Applicant Signature Pages	NA	Recorded Deeds for Diversion Points
Yes	Written Evidence of Signature Authority	NA	Consent For Diversion Access
Yes	_ Technical Information Report	Yes	Worksheet 4.0
Yes	_ USGS Map (or equivalent)	NA	_ TPDES Permit(s)
Yes	Map Showing Project Details	NA	WWTP Discharge Data
NA	Original Photographs	NA	Groundwater Well Permit
Yes	Water Availability Analysis	NA	Signed Water Supply Contract
Yes	Worksheet 1.0	Yes	Worksheet 4.1
NA	Recorded Deeds for Irrigated Land	Yes	Worksheet 5.0
NA	Consent For Irrigation Land	Yes	Addendum to Worksheet 5.0
NA	Worksheet 1.1	Yes	Worksheet 6.0
NA	Addendum to Worksheet 1.1	Yes	Water Conservation Plan(s)
NA	Worksheet 1.2	Yes	Drought Contingency Plan(s)
NA	Additional W.S 2.0 for Each Reservoir	Yes	Documentation of Adoption
NA	Dam Safety Documents	NA	Worksheet 7.0
NA	Notice(s) to Governing Bodies	NA	Accounting Plan
NA	Recorded Deeds for Inundated Land	Yes	Worksheet 8.0
NA	Consent For Inundation Land	Yes	Fees
	•		

#### ADMINISTRATIVE INFORMATION REPORT

The following information is required for all new applications and amendments.

\*\*\*Applicants are strongly encouraged to schedule a pre-application meeting with TCEQ Staff to discuss Applicant's needs prior to submitting an application. Call the Water Rights Permitting Team to schedule a meeting at (512) 239-4600.

### 1. TYPE OF APPLICATION (Instructions, Page. 6)

Indicate by marking X next to the following authorizations you are seeking

*If you are seeking an amendment to an existing water rights authorization, you
XBed and Banks
Amendment to a Water Right *
New Appropriation of State Water
marcate, by marking 14 next to the following authorizations you are seeking.

\*If you are seeking an amendment to an existing water rights authorization, you must be the owner of record of the authorization. If the name of the Applicant in Section 2, does not match the name of the current owner(s) of record for the permit or certificate or if any of the co-owners is not included as an applicant in this amendment request, your application could be returned. If you or a co-applicant are a new owner, but ownership is not reflected in the records of the TCEQ, submit a change of ownership request (Form TCEQ-10204) prior to submitting the application for an amendment. See Instructions page. 6. Please note that an amendment application may be returned, and the Applicant may resubmit once the change of ownership is complete.

Please summarize the authorizations or amendments you are seeking in the space below or attach a narrative description entitled "Summary of Request."

NETMWD seeks to amend its existing water right in Lake O' the Pines (COA 04-4590) to add an authorization to use the bed and banks of Dragoo Creek, Tankersley Creek and Big Cypress Creek to transport up to 6,469.5 acre-feet of water released from an off-channel storage pond to Lake O' the Pines. This transportation amount represents the storage capacity of the off-channel storage pond (6,810 acre-feet) reduced by an assumed 5% to account for channel losses. The off-channel storage pond from which water will be discharged (identified on the attached maps as the "GR-20 Pond") is located on the Monticello Winfield South Mine property near Winfield, Texas, is currently owned by Luminant Generation Company, LLC and Luminant Mining Company, LLC (collectively, "Luminant"), and is subject to the reclamation requirements of the Railroad Commission of Texas. Once reclamation is complete, the GR-20 Pond will have a storage capacity of approximately 6,810 acre-feet of water. Pursuant to a Development Agreement executed in 2021 (attached), Luminant will grant NETMWD an Access and Inundation Easement and a Water Storage Agreement authorizing NETMWD to utilize the GR-20 Pond and associated ponds and facilities for water storage and discharge into Dragoo Creek. Water transported from the GR-20 Pond to Lake O' the Pines will be utilized to firm up existing water uses authorized in COA 04-4590 without increasing diversion amounts or rates. Additionally, such water discharged into Dragoo Creek will provide enhanced streamflow within the Cypress Creek Basin to support instream riparian habitat.

# 2. APPLICANT INFORMATION (Instructions, Page. 6)

Applicant				
Indicate the number of Ap (Include a copy of this sec	oplicants/Co-Applicants 1 ction for each Co-Applicant, if any)			
What is the Full Legal Name of the individual or entity (applicant) applying for this permit				
Northeast Texas Municipal Water District				
	y, the legal name must be spelled exactly as filed with the Texas or in the legal documents forming the entity.)			
You may search for your C	y a customer with the TCEQ, what is the Customer Number (CN)'N on the TCEQ website at ov/crpub/index.cfm?fuseaction=cust.CustSearch			
CN : CN601368368				
CN : C1400 1300300	( leave blank if you do not yet have a CN).			
application is signed by an evidence that they meet the	of the person or persons signing the application? Unless an individual applicant, the person or persons must submit writteness signatory requirements in 30 TAC § 295.14.			
First/Last Name: Walt Sears				
Title: Executive Director  Have you provided written 295.14, as an attachment to	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at ZipLookupAction!input.action.			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears Mailing Address: P.O. B	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at (ZipLookupAction!input.action.			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at 'ZipLookupAction!input.action.			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears Mailing Address: P.O. B	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at (ZipLookupAction!input.action.  Sox 955  State: Texas ZIP Code: 75656			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears  Mailing Address: P.O. B City: Hughes Springs	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at (ZipLookupAction!input.action.  Sox 955  State: Texas ZIP Code: 75656			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears  Mailing Address: P.O. B City: Hughes Springs	evidence meeting the signatory requirements in 30 TAC § of this application? Y/N Yes  ling address as recognized by the US Postal Service (USPS)? You the USPS website at (ZipLookupAction!input.action.  Sox 955  State: Texas ZIP Code: 75656  pe of Applicant:			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears Mailing Address: P.O. BCity: Hughes Springs  Indicate an X next to the type Individual	evidence meeting the signatory requirements in 30 TAC § of this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at (ZipLookupAction!input.action.  Sox 955  State: Texas ZIP Code: 75656  pe of Applicant:Sole Proprietorship-D.B.A.			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears Mailing Address: P.O. BCity: Hughes Springs  Indicate an X next to the type Individual Partnership	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at /ZipLookupAction!input.action.  Sox 955 State: Texas ZIP Code: 75656 pe of Applicant: Sole Proprietorship-D.B.A Corporation			
Have you provided written 295.14, as an attachment to What is the applicant's mai may verify the address on thttps://tools.usps.com/go/Name: Walt Sears  Mailing Address: P.O. B City: Hughes Springs  Indicate an X next to the type Individual Partnership Trust	evidence meeting the signatory requirements in 30 TAC § this application? Y/N Yes ling address as recognized by the US Postal Service (USPS)? You the USPS website at YZipLookupAction!input.action.  Sox 955  State: Texas ZIP Code: 75656  pe of Applicant: Sole Proprietorship-D.B.A. CorporationEstate			

# 3. APPLICATION CONTACT INFORMATION (Instructions, Page. 9)

If the TCEQ needs additional information during the review of the application, who should be contacted? Applicant may submit their own contact information if Applicant wishes to be the point of contact.

First and Last Name: Bria	an Sledge	
Title: Attorney		
Organization Name: Slee	dgeLaw Group PLLC	
	ongress Avenue, Sui	te 460
· ·	State: Texas	
Phone Number: 512-57		
Fax Number:		
E-mail Address		

# 4. WATER RIGHT CONSOLIDATED CONTACT INFORMATION (Instructions, Page. 9)

This section applies only if there are multiple Owners of the same authorization. Unless otherwise requested, Co-Owners will each receive future correspondence from the Commission regarding this water right (after a permit has been issued), such as notices and water use reports. Multiple copies will be sent to the same address if Co-Owners share the same address. Complete this section if there will be multiple owners and all owners agree to let one owner receive correspondence from the Commission. Leave this section blank if you would like all future notices to be sent to the address of each of the applicants listed in section 2 above.

I/We authorize all future notices be received on my/our behalf at the following:

First and Last Name:			
Title:			
Mailing Address:			
City:	State:	ZIP Code:	
Phone Number:			
Fax Number:			
E-mail Address:			

### 5. MISCELLANEOUS INFORMATION (Instructions, Page. 9)

a. The application will not be processed unless all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol by all applicants/co-applicants. If you need assistance determining whether you owe delinquent penalties or fees, please call the Water Rights Permitting Team at (512) 239-4600, prior to submitting your application.

1.	Does Applicant or Co-Applicant owe any fees to the TCEQ? <b>Yes</b> / <b>No</b> No		
	If <b>yes</b> , provide the following information:		
	Account number:	Amount past due:	
2.	Does Applicant or Co-Applicant owe any penalties t	to the TCEQ? Yes / No No	
	If <b>yes</b> , please provide the following information:		
	Enforcement order number:	Amount past due:	

- b. If the Applicant is a taxable entity (corporation or limited partnership), the Applicant must be in good standing with the Comptroller or the right of the entity to transact business in the State may be forfeited. See Texas Tax Code, Subchapter F. Applicants may check their status with the Comptroller at <a href="https://mycpa.cpa.state.tx.us/coa/">https://mycpa.cpa.state.tx.us/coa/</a>
  Is the Applicant or Co-Applicant in good standing with the Comptroller? Yes / No NA
- c. The commission will not grant an application for a water right unless the applicant has submitted all Texas Water Development Board (TWDB) surveys of groundwater and surface water use if required. See TWC §16.012(m) and 30 TAC § 297.41(a)(5). Applicants should check survey status on the TWDB website prior to filing: https://www3.twdb.texas.gov/apps/reports/WU/SurveyStatus\_PriorThreeYears

Applicant has submitted all required TWDB surveys of groundwater and surface water? **Yes / No** Yes

# 6. SIGNATURE PAGE (Instructions, Page. 11)

Applicant:

<sub>T</sub> Walt Sears

**Executive Director and General Manager** 

(Typed or printed name)

(Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under Title 30 Texas Administrative Code §295.14 to sign and submit this document and I have submitted written evidence of my signature authority.

Signature:

(Use blue ink)

Date: 6-6-2022

Subscribed and Sworn to before me by the said

on this

day of

, 20<u>22</u>

My commission expires on the

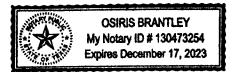
day of lecem per

, 20 23

Notary Public

[SEAL]

County, Texas



If the Application includes Co-Applicants, each Applicant and Co-Applicant must submit an original, separate signature page

#### RESOLUTION NO. 2021-02

THE STATE OF TEXAS

100 KM 501

NORTHEAST TEXAS MUNICIPAL WATER DISTRICT

A RESOLUTION AUTHORIZING THE EXECUTION OF A DEVELOPMENT AGREEMENT AND RELATED DOCUMENTS WITH LUMINANT GENERATION COMPANY, LLC AND LUMINANT MINING COMPANY, LLC. AND TO FILE APPLICATIONS WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RELATED TO THE AGREEMENT

WHEREAS, the Northeast Texas Municipal Water District (the "District") is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creck Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Laminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together "Luminant") own property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property having been permitted for mining operations is no longer operated as a mine and is going through redument on pursuant to the Railroad Commission of Texas requirements ("Reclamation"); and

WHEREAS, the Property comains certain final mining pits that upon completion of Reclamation will have the capacity to imnound and store water which can then be pumped into tributaries of the Basia case "Mining Pietro and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface raine pits for the use as water storage reservoirs to enhance the su, o's available water supply; and

WHEREAS, the District, under the direction of the Board of Directors, has been in negotiations with Luminum about the use of its Mining Pits for water supply purposes; and

WHEREAS, the District has found that the water from the Mining Pits, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interest and welfare of the public and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin; and

WHEREAS, the District and Luminant have negotiated a Development Agreement under which the District will acquire the right to store water in and release water from the Mining Pits to tributaries of the Basin for the furtherance of the above purposes (the "Development Agreement"); and

WHEREAS, the District now desires to execute the Development Agreement and to authorize its Executive Director, on behalf of the District, to prepare and execute such Development Agreement and all associated documents.

NOW, THEREFORE, THE BOARD OF DIRECTORS IN ITS REGULAR MEETING RESOLVES THAT:

- 1. The above recitals are true and correct.
- 2. The Board of Directors of the District hereby direct the Executive Director to prepare and execute the Development Agreement with Luminant,
- 3. The Executive Director of the District is further authorized to take any and all action necessary to implement this Development Agreement, including but not limited to the execution of all other documents associated with or necessary to implement the terms of the Development Agreement and the filing of any water rights or other applications with the Texas Commission on Environmental Quality for the necessary authorizations to implement the terms of the Development Agreement.
- 4. The Executive Director of the District is further authorized to take any and all action necessary to coordinate with Luminant as may be required in order to implement the terms of the Development Agreement.

THIS RESOLUTION ADOPTED BY THE DISTRICT BOARD OF DIRECTORS IN A REGULAR MEETING ON MAY 24, 2021.

Bv:

1

# TECHNICAL INFORMATION REPORT WATER RIGHTS PERMITTING

This Report is required for applications for new or amended water rights. Based on the Applicant's responses below, Applicants are directed to submit additional Worksheets (provided herein). A completed Administrative Information Report is also required for each application.

Applicants are REQUIRED to schedule a pre-application meeting with TCEQ Permitting Staff to discuss Applicant's needs and to confirm information necessary for an application prior to submitting such application. Please contact the Water Availability Division at (512) 239-4600 or WRPT@tceq.texas.gov to schedule a meeting.

Date of pre-application meeting: 10/6/21; 3/18/22; and 5/31/22

# 1. New or Additional Appropriations of State Water. Texas Water Code (TWC) § 11.121 (Instructions, Page. 12)

**State Water is:** The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state. TWC § 11.021.

a.	Applicant requests	a new appropriation	(diversion o	r impoundment)	of State	Water? Y	/ <b>N</b> No.
----	--------------------	---------------------	--------------	----------------	----------	----------	----------------

b.	<ul> <li>Applicant requests an amendment</li> </ul>	it to an existing water r	ight requesting	an increase	in the
	appropriation of State Water or a	n increase of the overall	l or maximum c	ombined div	version
	rate? $Y / N_{No.}$ (If yes, indicated)	ite the Certificate or Per	mit number:	)	

If Applicant answered yes to (a) or (b) above, does Applicant also wish to be considered for a term permit pursuant to TWC  $\S$  11.1381? Y /  $N_{No.}$ 

c.	Applicant requests to extend an	n existing Term authorization o	or to make the right permanent?
	$Y / N_{No.}$ (If yes, indicate	the Term Certificate or Permit	number:)

If Applicant answered yes to (a), (b) or (c), the following worksheets and documents are required:

- Worksheet 1.0 Quantity, Purpose, and Place of Use Information Worksheet
- **Worksheet 2.0 Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir requested in the application)
- **Worksheet 3.0 Diversion Point Information Worksheet** (submit one worksheet for each diversion point and/or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach requested in the application)
- Worksheet 5.0 Environmental Information Worksheet
- Worksheet 6.0 Water Conservation Information Worksheet
- Worksheet 7.0 Accounting Plan Information Worksheet
- Worksheet 8.0 Calculation of Fees
- Fees calculated on Worksheet 8.0 see instructions Page. 34.
- Maps See instructions Page. 15.
- **Photographs** See instructions **Page. 30**.

Additionally, if Applicant wishes to submit an alternate source of water for the project/authorization, see Section 3, Page 3 for Bed and Banks Authorizations (Alternate sources may include groundwater, imported water, contract water or other sources).

Additional Documents and Worksheets may be required (see within).

# 2. Amendments to Water Rights. TWC § 11.122 (Instructions, Page. 12)

This section should be completed if Applicant owns an existing water right and Applicant requests to amend the water right. If Applicant is not currently the Owner of Record in the TCEQ Records, Applicant must submit a Change of Ownership Application (TCEQ-10204) prior to submitting the amendment Application or provide consent from the current owner to make the requested amendment. If the application does not contain consent from the current owner to make the requested amendment, TCEQ will not begin processing the amendment application until the Change of Ownership has been completed and will consider the Received Date for the application to be the date the Change of Ownership is completed. See instructions page. 6.

Water Right (Certificate or Permit) number you a	re requesting to amend: COA 04-4590
Applicant requests to sever and combine existing Certificates into another Permit or Certificate?	
List of water rights to sever	Combine into this ONE water right

a. Applicant requests an amendment to an existing water right to increase the amount of the appropriation of State Water (diversion and/or impoundment)?  $Y / N_{No.}$ 

If yes, application is a new appropriation for the increased amount, complete Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.

b. Applicant requests to amend existing Term authorization to extend the term or make the water right permanent (remove conditions restricting water right to a term of years)?  $\mathbf{Y} / \mathbf{N}$  No.

If yes, application is a new appropriation for the entire amount, complete Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.

- c. Applicant requests an amendment to change the purpose or place of use or to add an additional purpose or place of use to an existing Permit or Certificate? Y /  $N_{No.}$  If yes, submit:
  - Worksheet 1.0 Quantity, Purpose, and Place of Use Information Worksheet
  - Worksheet 1.2 Notice: "Marshall Criteria"
- d. Applicant requests to change: diversion point(s); or reach(es); or diversion rate? Y /  $N_{No.}$  If yes, submit:
  - **Worksheet 3.0 Diversion Point Information Worksheet** (submit one worksheet for each diversion point or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach)
  - **Worksheet 5.0 Environmental Information** (Required for <u>any</u> new diversion points that are not already authorized in a water right)
- e. Applicant requests amendment to add or modify an impoundment, reservoir, or dam? Y / N No.

*If yes, submit:* **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir)

f. Other - Applicant requests to change any provision of an authorization not mentioned above? Y / NNO. If yes, call the Water Availability Division at (512) 239-4600 to discuss.

#### Additionally, all amendments require:

- Worksheet 8.0 Calculation of Fees; and Fees calculated see instructions Page. 34
- Maps See instructions Page. 15.
- Additional Documents and Worksheets may be required (see within).

### 3. Bed and Banks. TWC § 11.042 (Instructions, Page 13)

a. Pursuant to contract, Applicant requests authorization to convey, stored or conserved water to the place of use or diversion point of purchaser(s) using the bed and banks of a watercourse? TWC § 11.042(a). Y/N No.\_\_\_\_

If yes, submit a signed copy of the Water Supply Contract pursuant to 30 TAC §§ 295.101 and 297.101. Further, if the underlying Permit or Authorization upon which the Contract is based does not authorize Purchaser's requested Quantity, Purpose or Place of Use, or Purchaser's diversion point(s), then either:

- 1. Purchaser must submit the worksheets required under Section 1 above with the Contract Water identified as an alternate source; or
- 2. Seller must amend its underlying water right under Section 2.
- b. Applicant requests to convey water imported into the state from a source located wholly outside the state using the bed and banks of a watercourse? TWC § 11.042(a-1). Y /  $N_{No.}$

*If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps and fees from the list below.* 

c. Applicant requests to convey Applicant's own return flows derived from privately owned groundwater using the bed and banks of a watercourse? TWC § 11.042(b). Y / N No.

*If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.* 

d. Applicant requests to convey Applicant's own return flows derived from surface water using the bed and banks of a watercourse? TWC § 11.042(c). Y / NNo.

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, Maps, and fees from the list below.

\*Please note, if Applicant requests the reuse of return flows belonging to others, the Applicant will need to submit the worksheets and documents under Section 1 above, as the application will be treated as a new appropriation subject to termination upon direct or indirect reuse by the return flow discharger/owner.

e. Applicant requests to convey water from any other source, other than (a)-(d) above, using the bed and banks of a watercourse? TWC § 11.042(c). Y /  $N_{\text{Yes.}}$ 

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below. Worksheets and information:

- Worksheet 1.0 Quantity, Purpose, and Place of Use Information Worksheet
- Worksheet 2.0 Impoundment/Dam Information Worksheet (submit one worksheet for each impoundment or reservoir owned by the applicant through which water will be conveyed or diverted)
- **Worksheet 3.0 Diversion Point Information Worksheet** (submit one worksheet for the downstream limit of each diversion reach for the proposed conveyances)

- Worksheet 4.0 Discharge Information Worksheet (for each discharge point)
- Worksheet 5.0 Environmental Information Worksheet
- Worksheet 6.0 Water Conservation Information Worksheet
- Worksheet 7.0 Accounting Plan Information Worksheet
- Worksheet 8.0 Calculation of Fees; and Fees calculated see instructions Page. 34
- Maps See instructions Page. 15.
- Additional Documents and Worksheets may be required (see within).

# 4. General Information, Response Required for all Water Right Applications (Instructions, Page 15)

a. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement (not required for applications to use groundwater-based return flows). Include citations or page numbers for the State and Regional Water Plans, if applicable. Provide the information in the space below or submit a supplemental sheet entitled "Addendum Regarding the State and Regional Water Plans":

The state and regional water plans generally do not address every possible change in individual water rights. This application is consistent with the 2021 Region D Water Plan and the 2022 State Water Plan because there is nothing in the plans that conflict with this application.

b. Did the Applicant perform its own Water Availability Analysis? Y / N Yes.

If the Applicant performed its own Water Availability Analysis, provide electronic copies of any modeling files and reports.

c. Does the application include required Maps? (Instructions Page. 15)  $_{Y}$  /  $_{N}$  Yes.

# WORKSHEET 1.0 Quantity, Purpose and Place of Use

# 1. New Authorizations (Instructions, Page. 16)

Submit the following information regarding quantity, purpose and place of use for requests for new or additional appropriations of State Water or Bed and Banks authorizations:

Quantity (acre- feet) (Include losses for Bed and Banks)	State Water Source (River Basin) or Alternate Source *each alternate source (and new appropriation based on return flows of others) also requires completion of Worksheet 4.0	Purpose(s) of Use	Place(s) of Use  *requests to move state water out of basin also require completion of Worksheet 1.1 Interbasin Transfer
6,469.5 ac. ft.	Alternate Source (water from off-channel storage)	Municipal, Industrial, Domestic and Recreation	Cypress Creek Basin

6,469.5 acre-feet Total amount of water (in acre-feet) to be used annually (*include losses for Bed and Banks applications*)

If the Purpose of Use is Agricultural/Irrigation for any amount of water, provide:

₹.	Location Information Regarding the Lands to l	oe Irrigated	
	<ul><li>i) Applicant proposes to irrigate a total of all of or part of a larger tract(s) which</li></ul>	is described in a sup	plement attached to this
	application and contains a total of	acres in	County, TX.
	ii) Location of land to be irrigated: In th		Original Survey No.

A copy of the deed(s) or other acceptable instrument describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds.

If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

# 2. Amendments - Purpose or Place of Use (Instructions, Page. 12)

a. Complete this section for each requested amendment changing, adding, or removing Purpose(s) or Place(s) of Use, complete the following:

Quantity (acre- feet)	Existing Purpose(s) of Use	Proposed Purpose(s) of Use*	Existing Place(s) of Use	Proposed Place(s) of Use**

<sup>\*</sup>If the request is to add additional purpose(s) of use, include the existing and new purposes of use under "Proposed Purpose(s) of Use."

Changes to the purpose of use in the Rio Grande Basin may require conversion. 30 TAC § 303.43.

b.	For any request which adds Agricultural purpose	of use or changes the place of use for
	Agricultural rights, provide the following location	information regarding the lands to be
	irrigated:	
	i Applicant proposes to irrigate a total of	acres in any one year. This acreage is

ı.	Applicant proposes to irrigate a total or	acres in any one year. This acreage is
		described in a supplement attached to this
	application and contains a total of County, TX.	acres in
ii.	Location of land to be irrigated: In the	Original Survey No.

ii.	Location of land to be irrigated:	In the	Original Survey No.
	, Abstract No		•

A copy of the deed(s) describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds. If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other legal right for Applicant to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

- c. Submit Worksheet 1.1, Interbasin Transfers, for any request to change the place of use which moves State Water to another river basin.
- d. See Worksheet 1.2, Marshall Criteria, and submit if required.
- e. See Worksheet 6.0, Water Conservation/Drought Contingency, and submit if required.

<sup>\*\*</sup>If the request is to add additional place(s) of use, include the existing and new places of use under "Proposed Place(s) of Use."

# WORKSHEET 1.1 INTERBASIN TRANSFERS, TWC § 11.085

Submit this worksheet for an application for a new or amended water right which requests to transfer State Water from its river basin of origin to use in a different river basin. A river basin is defined and designated by the Texas Water Development Board by rule pursuant to TWC § 16.051.

Applicant requests to transfer State Water to another river basin within the State? Y / N\_\_\_\_\_

1.	Interbasin Transfer Request (Instructions, Page. 20)
a. Pro	vide the Basin of Origin
b. Pro	vide the quantity of water to be transferred (acre-feet)
c. Pro	vide the Basin(s) and count(y/ies) where use will occur in the space below:

# 2. Exemptions (Instructions, Page. 20), TWC § 11.085(v)

Certain interbasin transfers are exempt from further requirements. Answer the following:

- a. The proposed transfer, which in combination with any existing transfers, totals less than 3,000 acre-feet of water per annum from the same water right. Y/N\_
- b. The proposed transfer is from a basin to an adjoining coastal basin? Y/N
- c. The proposed transfer from the part of the geographic area of a county or municipality, or the part of the retail service area of a retail public utility as defined by Section 13.002, that is within the basin of origin for use in that part of the geographic area of the county or municipality, or that contiguous part of the retail service area of the utility, not within the basin of origin? Y/N\_\_
- d. The proposed transfer is for water that is imported from a source located wholly outside the boundaries of Texas, except water that is imported from a source located in the United Mexican States? Y/N

# 3. Interbasin Transfer Requirements (Instructions, Page. 20)

For each Interbasin Transfer request that is not exempt under any of the exemptions listed above Section 2, provide the following information in a supplemental attachment titled "Addendum to Worksheet 1.1, Interbasin Transfer":

- a. the contract price of the water to be transferred (if applicable) (also include a copy of the contract or adopted rate for contract water);
- b. a statement of each general category of proposed use of the water to be transferred and a detailed description of the proposed uses and users under each category;
- c. the cost of diverting, conveying, distributing, and supplying the water to, and treating the water for, the proposed users (example expert plans and/or reports documents may be provided to show the cost):

- d. describe the need for the water in the basin of origin and in the proposed receiving basin based on the period for which the water supply is requested, but not to exceed 50 years (the need can be identified in the most recently approved regional water plans. The state and regional water plans are available for download at this website: (http://www.twdb.texas.gov/waterplanning/swp/index.asp);
- e. address the factors identified in the applicable most recently approved regional water plans which address the following:
  - (i) the availability of feasible and practicable alternative supplies in the receiving basin to the water proposed for transfer;
  - (ii) the amount and purposes of use in the receiving basin for which water is needed;
  - (iii) proposed methods and efforts by the receiving basin to avoid waste and implement water conservation and drought contingency measures;
  - (iv) proposed methods and efforts by the receiving basin to put the water proposed for transfer to beneficial use;
  - (v) the projected economic impact that is reasonably expected to occur in each basin as a result of the transfer; and
  - (vi) the projected impacts of the proposed transfer that are reasonably expected to occur on existing water rights, instream uses, water quality, aquatic and riparian habitat, and bays and estuaries that must be assessed under Sections 11.147, 11.150, and 11.152 in each basin (*if applicable*). If the water sought to be transferred is currently authorized to be used under an existing permit, certified filing, or certificate of adjudication, such impacts shall only be considered in relation to that portion of the permit, certified filing, or certificate of adjudication proposed for transfer and shall be based on historical uses of the permit, certified filing, or certificate of adjudication for which amendment is sought;
- f. proposed mitigation or compensation, if any, to the basin of origin by the applicant; and
- g. the continued need to use the water for the purposes authorized under the existing Permit, Certified Filing, or Certificate of Adjudication, if an amendment to an existing water right is sought.

# WORKSHEET 1.2 NOTICE. "THE MARSHALL CRITERIA"

This worksheet assists the Commission in determining notice required for certain **amendments** that do not already have a specific notice requirement in a rule for that type of amendment, and that do not change the amount of water to be taken or the diversion rate. The worksheet provides information that Applicant **is required** to submit for amendments such as certain amendments to special conditions or changes to off-channel storage. These criteria address whether the proposed amendment will impact other water right holders or the on- stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

This worksheet is **not required for Applications in the Rio Grande Basin** requesting changes in the purpose of use, rate of diversion, point of diversion, and place of use for water rights held in and transferred within and between the mainstems of the Lower Rio Grande, Middle Rio Grande, and Amistad Reservoir. See 30 TAC § 303.42.

This worksheet is **not required for amendments which are only changing or adding diversion points, or request only a bed and banks authorization or an IBT authorization**. However, Applicants may wish to submit the Marshall Criteria to ensure that the administrative record includes information supporting each of these criteria

### 1. The "Marshall Criteria" (Instructions, Page. 21)

Submit responses on a supplemental attachment titled "Marshall Criteria" in a manner that conforms to the paragraphs (a) – (g) below:

- a. <u>Administrative Requirements and Fees.</u> Confirm whether application meets the administrative requirements for an amendment to a water use permit pursuant to TWC Chapter 11 and Title 30 Texas Administrative Code (TAC) Chapters 281, 295, and 297. An amendment application should include, but is not limited to, a sworn application, maps, completed conservation plan, fees, etc.
- b. <u>Beneficial Use.</u> Discuss how proposed amendment is a beneficial use of the water as defined in TWC § 11.002 and listed in TWC § 11.023. Identify the specific proposed use of the water (e.g., road construction, hydrostatic testing, etc.) for which the amendment is requested.
- c. <u>Public Welfare</u>. Explain how proposed amendment is not detrimental to the public welfare. Consider any public welfare matters that might be relevant to a decision on the application. Examples could include concerns related to the well-being of humans and the environment.
- d. <u>Groundwater Effects.</u> Discuss effects of proposed amendment on groundwater or groundwater recharge.

- e. <u>State Water Plan.</u> Describe how proposed amendment addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. The state and regional water plans are available for download at:\_
  <a href="http://www.twdb.texas.gov/waterplanning/swp/index.asp">http://www.twdb.texas.gov/waterplanning/swp/index.asp</a>.
- f. <u>Waste Avoidance</u>. Provide evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined in TWC § 11.002. Examples of evidence could include, but are not limited to, a water conservation plan or, if required, a drought contingency plan, meeting the requirements of 30 TAC Chapter 288.
- g. <u>Impacts on Water Rights or On-stream Environment</u>. Explain how the proposed amendment will not impact other water right holders or the on-stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

## WORKSHEET 2.0 Impoundment/Dam Information

This worksheet **is required** for any impoundment, reservoir and/or dam. Submit an additional Worksheet 2.0 for each impoundment or reservoir requested in this application.

If there is more than one structure, the numbering/naming of structures should be consistent throughout the application and on any supplemental documents (e.g., maps).

1	. Storage Information (Instructions, Page. 21)
a.	Official USGS name of reservoir, if applicable:
b.	Provide amount of water (in acre-feet) impounded by structure at normal maximum operating level:
c.	The impoundment is on-channelor off-channel(mark one)
	<ul> <li>i. Applicant has verified on-channel or off-channel determination by contacting Surface Water Availability Team at (512) 239-4600? Y / N</li> <li>ii. If on-channel, will the structure have the ability to pass all State Water inflows that Applicant does not have authorization to impound? Y / N</li> </ul>
ł.	Is the impoundment structure already constructed? $Y/N$
	i. For already constructed <b>on-channel</b> structures:
	1. Date of Construction:
	2. Was it constructed to be an exempt structure under TWC § 11.142? Y / N a. If Yes, is Applicant requesting to proceed under TWC § 11.143? Y / N b. If No, has the structure been issued a notice of violation by TCEQ? Y / N
	3. Is it a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure? Y/N a. If yes, provide the Site No and watershed project name; b. Authorization to close "ports" in the service spillway requested? Y/N
	ii. For <b>any</b> proposed new structures or modifications to structures:
	<ol> <li>Applicant must contact TCEQ Dam Safety Section at (512) 239-0326, prior to submitting an Application. Applicant has contacted the TCEQ Dam Safety Section regarding the submission requirements of 30 TAC, Ch. 299? Y/NProvide the date and the name of the Staff Person</li> </ol>
	<ul> <li>2. As a result of Applicant's consultation with the TCEQ Dam Safety Section, TCEQ has confirmed that: <ul> <li>a. No additional dam safety documents required with the Application. Y / N</li> <li>b. Plans (with engineer's seal) for the structure required. Y / N</li> <li>c. Engineer's signed and sealed hazard classification required. Y / N</li> <li>d. Engineer's statement that structure complies with 30 TAC, Ch. 299 Rules required. Y / N</li> </ul> </li> </ul>

		body oz reservo submit	f each county ir to be const a copy of all	and municipa ructed, will b the notices a	ality in whic e located. (3 nd certified	h the reserv 30 TAC § 295 mailing card	nber of the gove oir, or any part 5.42). Applicant ls with this	of the
i	ii.	Additional	information 1	equired for <b>c</b>	n-channel s	storage:		
					nel reservoii	r at normal r	naximum opera	nting
		area ab calculat Applica If yes, t ( <i>If assis</i>	ove the on-chate the drainage and has calculate drainage and tance is neede	annel dam or e area they m ited the drain rea is_ ed, call the Su	reservoir.  ay do so at age area. Y sq. m  rface Water	If Applicant their option	wishes to also	rainage
a. On Wa	itercoi	ırse (if on-	channel) (USG	S name):				
b. Zip Co	ode:							
a. On Watercourse (if on-channel) (USGS name):								
si in o d r d. A poin	ubmit nunda * If the or will locume ight to	ted describ ted. Applicant be built an entation ev use the la	oing the tract t is not curren id sole owner videncing con ind described	(s) that inclu atly the sole of of all lands asent or other	de the struc owner of the to be inund r document	cture and al e land on wl lated, Applic ation suppo	l lands to be hich the structu ant must subm rting Applican	ıre is iit t's
La	atitude	9	°N, L	ongitude		°W.		
*1	Provid		•	•			o at least six de	cimal
•	i. I			l to calculate	the location	ı (examples:	Handheld GPS	Device,
;	ii. N	Iap submit	-	arly identifie ated. See ins	s the Impou ructions Pa	ındment, dar ge. 15. <b>Y</b> / N	m (where applic	cable),

## WORKSHEET 3.0 DIVERSION POINT (OR DIVERSION REACH) INFORMATION

This worksheet **is required** for each diversion point or diversion reach. Submit one Worksheet 3.0 for **each** diversion point and two Worksheets for **each** diversion reach (one for the upstream limit and one for the downstream limit of each diversion reach).

The numbering of any points or reach limits should be consistent throughout the application and on supplemental documents (e.g., maps).

1.	Divers	sion Information (Instructions, Page. 24	4)
a.	This Works	heet is to add new (select 1 of 3 below):	
	2Upst	rsion Point No. ream Limit of Diversion Reach No. nstream Limit of Diversion Reach No.	
b.		Rate of Diversion for <b>this new point</b> 1,300 gpm (gallons per minute)	_cfs (cubic feet per second)
c.	If yes, su	oint share a diversion rate with other points? <b>Y / N</b> Submit Maximum Combined Rate of Diversion for all eaches cfs or gpm	
d.	** An inc	nents, is Applicant seeking to increase combined decrease in diversion rate is considered a new approposon of Section 1, New or Additional Appropriation of	riation and would require
e.		e appropriate box to indicate diversion location ar cation is existing or proposed):	nd indicate whether the
	Check one		Write: Existing or Proposed
		Directly from stream	
	<b>✓</b>	From an on-channel reservoir	Existing.
		From a stream to an on-channel reservoir	
		Other method (explain fully, use additional sheets if necessary)	
f.	above the di	e Application information provided, Staff will calc version point (or reach limit). If Applicant wishes ea, you may do so at their option.	
	Applicant ha	as calculated the drainage area. $Y / N_{N0}$	
	(If assista	e drainage area issq. miles. Ince is needed, call the Surface Water Availability T Ing application)	Feam at (512) 239-4600, prior to

2	2. Diversion Location (Instru	ictions, Page 25)	
a.	a. On watercourse (USGS name): Cypre	ess Creek	
b.	o. Zip Code: 75657		
c.	c. Location of point: In the	Original Survey No County, Texas.	, Abstract
	No.  Diversion will be pursuant to the authorization  A copy of the deed(s) with the recording submitted describing tract(s) that includes the submitted describing tract(s) the submitted describing tract(s) that includes the submitted describing tract(s) the submitted describing trac	ing information from the co	
	For diversion reaches, the Commission the Applicant does not own or have contented to provide deeds, or consent the specific points when specific diversional documents may include, but are not location to the Applicant	onsent or a legal right to ac i, or other documents suppo rsion points within the reacl limited to a recorded easem	cess, the Applicant will be rting a legal right to use h are utilized. Other ent, a land lease, a
d.	. Point is at: Latitude^^N  Provide Latitude and Longi decimal places	N, Longitude°W itude coordinates in decimal	V. I degrees to at least six
e.	. Indicate the method used to calculate Mapping Program): COA 04-4590	the location (examples: Hand	
f.	Map submitted must clearly identify e Page. 15.	ach diversion point and/or r	each. See instructions
g.	If the Plan of Diversion is complicated map, attach additional sheets that full	and not readily discernable y explain the plan of diversio	from looking at the on.

## WORKSHEET 4.0 DISCHARGE INFORMATION

This worksheet required for any requested authorization to discharge water into a State Watercourse for conveyance and later withdrawal or in-place use. Worksheet 4.1 is also required for each Discharge point location requested. **Instructions Page. 26.** Applicant is responsible for obtaining any separate water quality authorizations which may be required and for insuring compliance with TWC, Chapter 26 or any other applicable law.

• • • • • • • • • • • • • • • • • • • •
a. The purpose of use for the water being discharged will be Existing uses in COA 04-4590 (municipal, domestic, industrial, recreation).
b. Provide the amount of water that will be lost to transportation, evaporation, seepage, channel or other associated carriage losses 5 % (% or amount) and explain the method of calculation: General industry practice and standard.
c. Is the source of the discharged water return flows? Y / $N_{No.}$ If yes, provide the following information:
<ol> <li>The TPDES Permit Number(s)(attach a copy of the current TPDES permit(s))</li> </ol>
2. Applicant is the owner/holder of each TPDES permit listed above? Y / N
PLEASE NOTE: If Applicant is not the discharger of the return flows, or the Applicant is not the water right owner of the underlying surface water right, or the Applicant does not have a contract with the discharger, the application should be submitted under Section 1, New or Additional Appropriation of State Water, as a request for a new appropriation of state water. If Applicant is the discharger, the surface water right holder, or the contract holder, then the application should be submitted under Section 3, Bed and Banks.
3. Monthly WWTP discharge data for the past 5 years in electronic format. (Attach and label as "Supplement to Worksheet 4.0").
4. The percentage of return flows from groundwater, surface water?
5. If any percentage is surface water, provide the base water right number(s)
d. Is the source of the water being discharged groundwater? Y / N No. If yes, provide the following information:
1. Source aquifer(s) from which water will be pumped:
2. If the well has not been constructed, provide production information for wells in the same aquifer in the area of the application. See <a href="http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp">http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp</a> . Additionally, provide well numbers or identifiers
3. Indicate how the groundwater will be conveyed to the stream or reservoir.
4. A copy of the groundwater well permit if it is located in a Groundwater Conservation District (GCD) or evidence that a groundwater well permit is not required.
di. Is the source of the water being discharged a surface water supply contract? Y / $N_{No.}$ If yes, provide the signed contract(s).
dii. Identify any other source of the water Off-channel storage pond pursuant to attached Development Agreement.

## WORKSHEET 4.1 DISCHARGE POINT INFORMATION

This worksheet is required for **each** discharge point. Submit one Worksheet 4.1 for each discharge point. If there is more than one discharge point, the numbering of the points should be consistent throughout the application and on any supplemental documents (e.g., maps). **Instructions, Page 27.** 

### For water discharged at this location provide:

a.	The amount of water that will be discharged at this point is 6,810 per year. The discharged amount should include the amount needed for use and compensate for any losses.	_acre-feet . to
b.	Water will be discharged at this point at a maximum rate of 50cfs or	gpm.
c.	Name of Watercourse as shown on Official USGS maps: Dragoo Creek	
	Zip Code <u>75455</u>	
e.	Location of point: In theOriginal Survey No, Abstract	
	No, County, Texas.	
f.	Point is at: Latitude 33.155595 °N, Longitude -95.028318 °W.	
	*Provide Latitude and Longitude coordinates in decimal degrees to at least six places	decimal
g.	Indicate the method used to calculate the discharge point location (examples: Hat GPS Device, GIS, Mapping Program): Coordinate System NAD 1927 State Plane Texas North Central	ndheld ——

Map submitted must clearly identify each discharge point. See instructions Page. 15.

### **WORKSHEET 5.0 ENVIRONMENTAL INFORMATION**

### 1. **Impingement and Entrainment**

Ind aqu	s section is required for any new diversion point that is not already authorized. icate the measures the applicant will take to avoid impingement and entrainment of atic organisms (ex. Screens on any new diversion structure that is not already norized in a water right). Instructions, Page 28.
2.	New Appropriations of Water (Canadian, Red, Sulphur, and Cypress Creek Basins only) and Changes in Diversion Point(s)
Sulp	section is required for new appropriations of water in the Canadian, Red, thur, and Cypress Creek Basins and in all basins for requests to change a rsion point. <b>Instructions, Page 30.</b>
	cription of the Water Body at each Diversion Point or Dam Location. (Provide an ronmental Information Sheet for each location),
a. Id	entify the appropriate description of the water body.
	□ Stream
	□ Reservoir
	Average depth of the entire water body, in feet:
	□ Other, specify:
b. Fle	ow characteristics
	If a stream, was checked above, provide the following. For new diversion locations, check one of the following that best characterize the area downstream of the diversion (check one).
	$\square$ Intermittent – dry for at least one week during most years
	☐ Intermittent with Perennial Pools – enduring pools
	□ Perennial - normally flowing
	Check the method used to characterize the area downstream of the new diversion location.
	□ USGS flow records
TCEQ-	☐ Historical observation by adjacent landowners  10214C (02/01/2022) Water Rights Permitting Availability Technical Information Sheet Page 17 of 23

☐ Personal observation
☐ Other, specify:
c. Waterbody aesthetics
Check one of the following that best describes the aesthetics of the stream segments affected by the application and the area surrounding those stream segments.  □ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional
<ul> <li>Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored</li> </ul>
$\square$ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid
$\hfill \Box$ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored
d. Waterbody Recreational Uses
Are there any known recreational uses of the stream segments affected by the application?
☐ Primary contact recreation (swimming or direct contact with water)
$\square$ Secondary contact recreation (fishing, canoeing, or limited contact with water)
☐ Non-contact recreation
e. Submit the following information in a Supplemental Attachment, labeled Addendum to Worksheet 5.0:
1. Photographs of the stream at the diversion point or dam location. Photographs should be in color and show the proposed point or reservoir and upstream and downstream views of the stream, including riparian vegetation along the banks. Include a description of each photograph and reference the photograph to the mapsubmitted with the application indicating the location of the photograph and the direction of the shot.
2. If the application includes a proposed reservoir, also include:
i. A brief description of the area that will be inundated by the reservoir.

If a United States Army Corps of Engineers (USACE) 404 permit is required, provide the project number and USACE project manager.

A description of how any impacts to wetland habitat, if any, will be mitigated if the reservoir is greater than 5,000 acre-feet.

ii.

iii.

### 3. Alternate Sources of Water and/or Bed and Banks Applications

This section is required for applications using an alternate source of water and bed and banks applications in any basins. **Instructions**, page 31.

- a. For all bed and banks applications:
  - i. Submit an assessment of the adequacy of the quantity and quality of flows remaining after the proposed diversion to meet instream uses and bay and estuary freshwater inflow requirements. This application only requests to discharge and subsequently divert off-channel stored water. The amount of water diverted will not exceed the amount of water discharged, less losses, therefore there should be no changes to downstream instream flows or
- b. For all alternate source applications:
  - i. If the alternate source is treated return flows, provide the TPDES permit number\_\_\_\_
  - ii. If groundwater is the alternate source, or groundwater or other surface water will be discharged into a watercourse provide:
    Reasonably current water chemistry information including but not limited to the following parameters in the table below. Additional parameters may be requested if there is a specific water quality concern associated with the aquifer from which water is withdrawn. If data for onsite wells are unavailable; historical data collected from similar sized wells drawing water from the same aquifer may be provided. However, onsite data may still be required when it becomes available. Provide the well number or well identifier. Complete the information below for each well and provide the Well Number or identifier.
    Please see attached Water Quality Information.

Parameter	Average Conc.	Max Conc.	No. of	Sample Type	Sample
			Samples		Date/Time
Sulfate, mg/L		į			
Chloride,					
mg/L					
Total					
Dissolved					
Solids, mg/L					
pH, standard					
units					
Temperature*,					
degrees					
Celsius		·			

<sup>\*</sup> Temperature must be measured onsite at the time the groundwater sample is collected.

iii.	If groundwater will be used, provide the depth of the well_	and the name
	of the aquifer from which water is withdrawn	

## WORKSHEET 6.0 Water Conservation/Drought Contingency Plans

This form is intended to assist applicants in determining whether a Water Conservation Plan and/or Drought Contingency Plans is required and to specify the requirements for plans. **Instructions, Page 31.** 

The TCEQ has developed guidance and model plans to help applicants prepare plans. Applicants may use the model plan with pertinent information filled in. For assistance submitting a plan call the Resource Protection Team (Water Conservation staff) at 512-239-4600, or e-mail wras@tceq.texas.gov. The model plans can also be downloaded from the TCEQ webpage. Please use the most up-to-date plan documents available on the webpage.

### 1. Water Conservation Plans

- a. The following applications must include a completed Water Conservation Plan (30 TAC § 295.9) for each use specified in 30 TAC, Chapter 288 (municipal, industrial or mining, agriculture including irrigation, wholesale):
  - 1. Request for a new appropriation or use of State Water.
  - 2. Request to amend water right to increase appropriation of State Water.
  - 3. Request to amend water right to extend a term.
  - 4. Request to amend water right to change a place of use.

    \*does not apply to a request to expand irrigation acreage to adjacent tracts.
  - 5. Request to amend water right to change the purpose of use. \*applicant need only address new uses.
  - 6. Request for bed and banks under TWC § 11.042(c), when the source water is State Water.

\*including return flows, contract water, or other State Water.

- b. If Applicant is requesting any authorization in section (1)(a) above, indicate each use for which Applicant is submitting a Water Conservation Plan as an attachment:
  - 1. X Municipal Use. See 30 TAC § 288.2. \*\*
  - 2. X Industrial or Mining Use. See 30 TAC § 288.3.
  - 3. \_\_\_\_Agricultural Use, including irrigation. See 30 TAC § 288.4.
  - 4. X Wholesale Water Suppliers. See 30 TAC § 288.5. \*\*

\*\*If Applicant is a water supplier, Applicant must also submit documentation of adoption of the plan. Documentation may include an ordinance, resolution, or tariff, etc. See 30 TAC §§ 288.2(a)(1)(J)(i) and 288.5(1)(H). Applicant has submitted such documentation with each water conservation plan? Y /  $N_{\text{Yes.}}$ 

c. Water conservation plans submitted with an application must also include data and information which: supports applicant's proposed use with consideration of the plan's water conservation goals; evaluates conservation as an alternative to the proposed

appropriation; and evaluates any other feasible alternative to new water development. See 30 TAC § 288.7. Applicant has included this information in each applicable plan? Y / N  $\underline{\hspace{1.5cm}^{\text{Yes.}}}$ 

### 2. Drought Contingency Plans

- a. A drought contingency plan is also required for the following entities if Applicant is requesting any of the authorizations in section (1) (a) above indicate each that applies:
  - 1. X Municipal Uses by public water suppliers. See 30 TAC § 288.20.
  - 2. \_\_\_\_Irrigation Use/ Irrigation water suppliers. See 30 TAC § 288.21.
  - 3. X Wholesale Water Suppliers. See 30 TAC § 288.22.
- b. If Applicant must submit a plan under section 2(a) above, Applicant has also submitted documentation of adoption of drought contingency plan (*ordinance*, *resolution*, *or tariff*, *etc. See 30 TAC § 288.30*) **Y** / **N**Yea

## WORKSHEET 7.0 ACCOUNTING PLAN INFORMATION WORKSHEET

The following information provides guidance on when an Accounting Plan may be required for certain applications and if so, what information should be provided. An accounting plan can either be very simple such as keeping records of gage flows, discharges, and diversions; or, more complex depending on the requests in the application. Contact the Surface Water Availability Team at 512-239-4600 for information about accounting plan requirements, if any, for your application. **Instructions, Page 34.** 

### 1. Is Accounting Plan Required

Accounting Plans are generally required:

- For applications that request authorization to divert large amounts of water from a single point where multiple diversion rates, priority dates, and water rights can also divert from that point;
- For applications for new major water supply reservoirs;
- For applications that amend a water right where an accounting plan is already required, if the amendment would require changes to the accounting plan;
- For applications with complex environmental flow requirements;
- For applications with an alternate source of water where the water is conveyed and diverted; and
- For reuse applications.

### 2. Accounting Plan Requirements

#### a. A **text file** that includes:

- 1. an introduction explaining the water rights and what they authorize;
- 2. an explanation of the fields in the accounting plan spreadsheet including how they are calculated and the source of the data;
- 3. for accounting plans that include multiple priority dates and authorizations, a section that discusses how water is accounted for by priority date and which water is subject to a priority call by whom; and
- 4. Should provide a summary of all sources of water.

### b. A **spreadsheet** that includes:

- 1. Basic daily data such as diversions, deliveries, compliance with any instream flow requirements, return flows discharged and diverted and reservoir content;
- 2. Method for accounting for inflows if needed;
- 3. Reporting of all water use from all authorizations, both existing and proposed;
- 4. An accounting for all sources of water:
- 5. An accounting of water by priority date;
- 6. For bed and banks applications, the accounting plan must track the discharged water from the point of delivery to the final point of diversion;
- 7. Accounting for convevance losses:
- 8. Evaporation losses if the water will be stored in or transported through a reservoir. Include changes in evaporation losses and a method for measuring reservoir content resulting from the discharge of additional water into the reservoir;
- 9. An accounting for spills of other water added to the reservoir; and
- 10. Calculation of the amount of drawdown resulting from diversion by junior rights or diversions of other water discharged into and then stored in the reservoir.

## WORKSHEET 8.0 CALCULATION OF FEES

This worksheet is for calculating required application fees. Applications are not Administratively Complete until all required fees are received. **Instructions, Page. 34** 

### 1. NEW APPROPRIATION

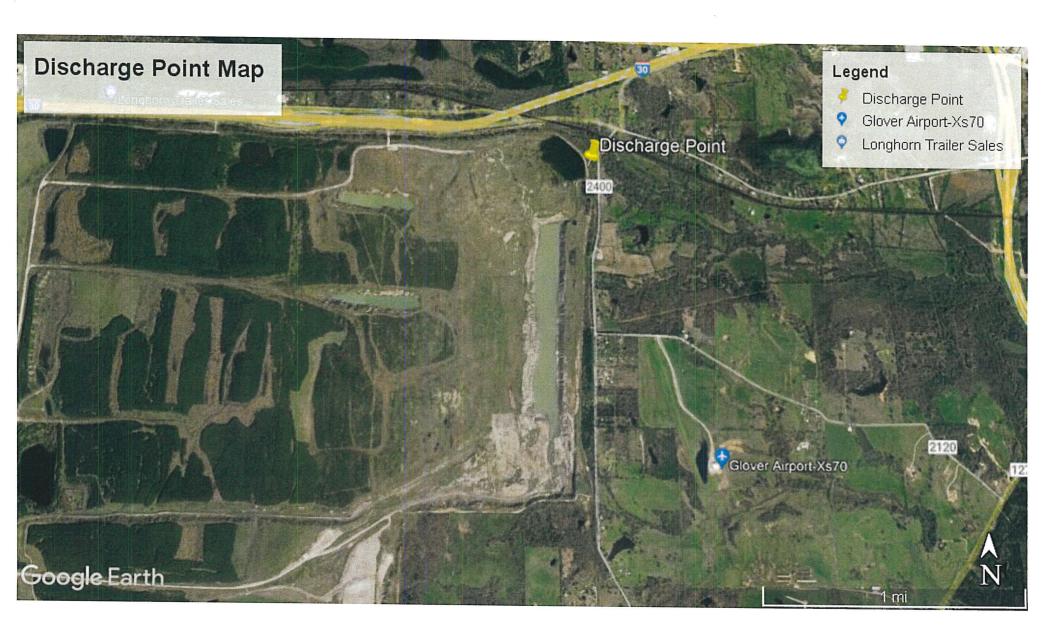
	Description	Amount (\$)
	Circle fee correlating to the total amount of water* requested for any new appropriation and/or impoundment. Amount should match total on Worksheet 1, Section 1. Enter corresponding fee under <b>Amount (\$).</b>	
	<u>In Acre-Feet</u>	1
Filing Fee	a. Less than 100 \$100.00	
_	b. 100 - 5,000 \$250.00	
	c. 5,001 - 10,000 \$500.00	
	d. 10,001 - 250,000 \$1,000.00	
	e. More than 250,000 \$2,000.00	
Recording Fee		\$25.00
Agriculture Use Fee	Only for those with an Irrigation Use.  Multiply 50¢ xNumber of acres that will be irrigated with State Water. **	
	Required for all Use Types, excluding Irrigation Use.	
Use Fee	Multiply \$1.00 xMaximum annual diversion of State Water in acrefeet. **	
Decreational Stare se	Only for those with Recreational Storage.	
Recreational Storage Fee	Multiply \$1.00 xacre-feet of in-place Recreational Use State Water to be stored at normal max operating level.	
	Only for those with Storage, excluding Recreational Storage.	
Storage Fee	Multiply $50 \ x$ acre-feet of State Water to be stored at normal max operating level.	
Mailed Notice	Cost of mailed notice to all water rights in the basin. Contact Staff to determine the amount (512) 239-4600.	
	TOTAL	S

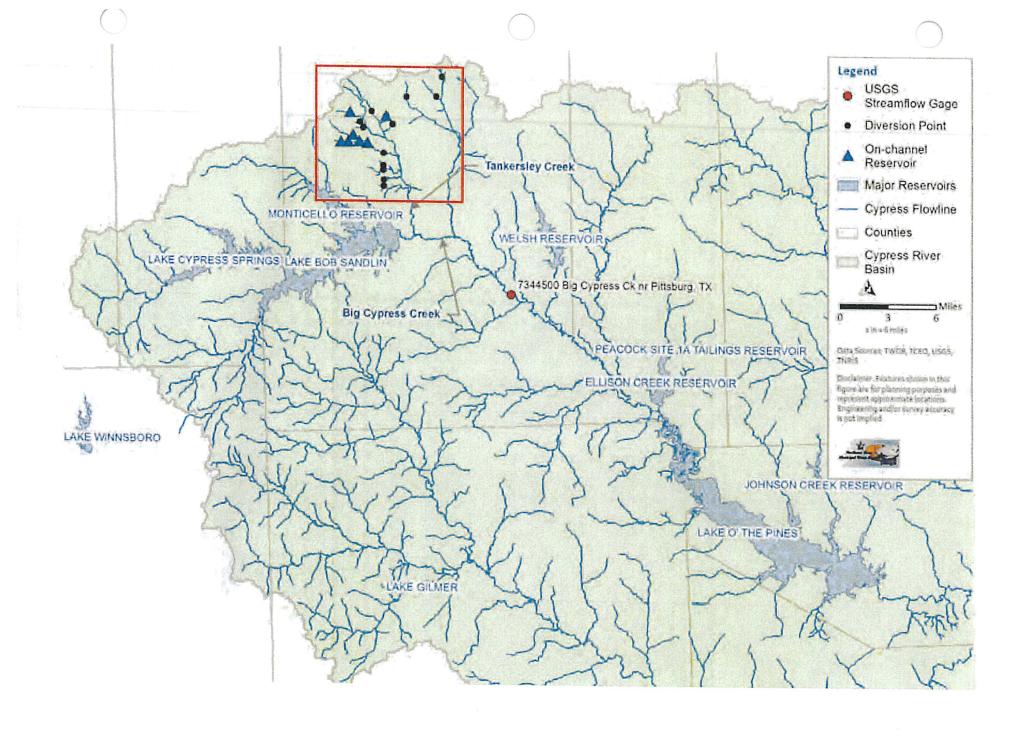
### 2. AMENDMENT OR SEVER AND COMBINE

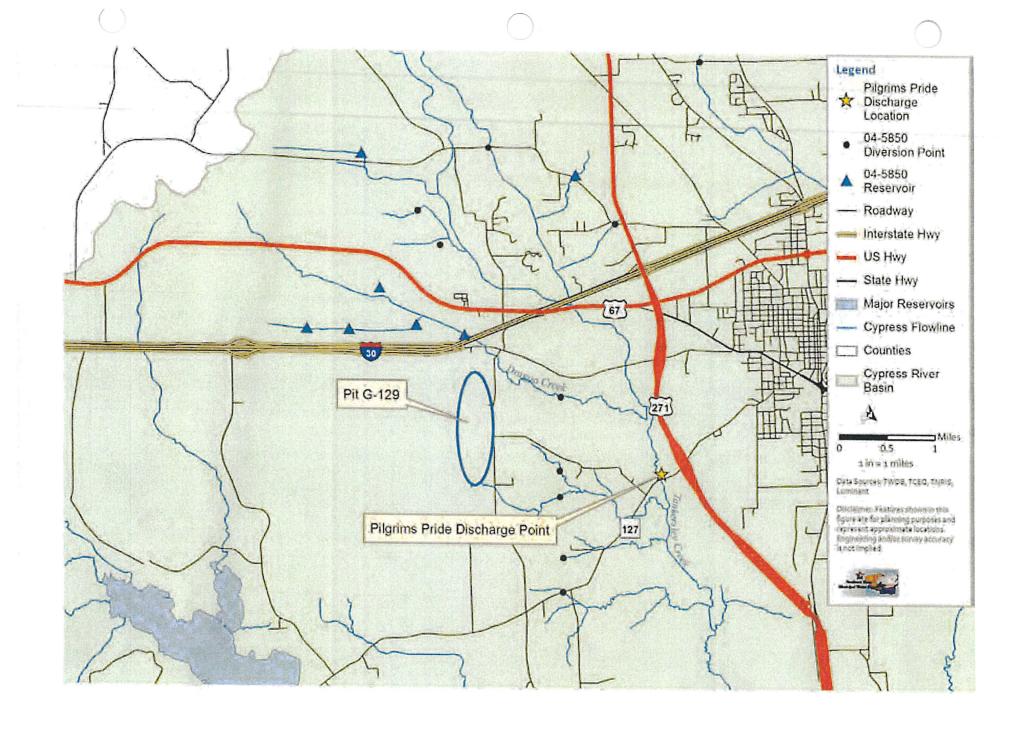
	Description	Amount (\$)
Filing For	Amendment: \$100	
Filing Fee	<b>OR</b> Sever and Combine: \$100 x of water rights to combine	
Recording Fee		\$12.5
Mailed Notice	Additional notice fee to be determined once application is submitted.	
•	TOTAL INCLUDED	\$

### 3. BED AND BANKS

	Description	Amount (\$)
Filing Fee		\$100.00
Recording Fee		\$12.50
<b>Mailed Notice</b>	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	\$ 112.50

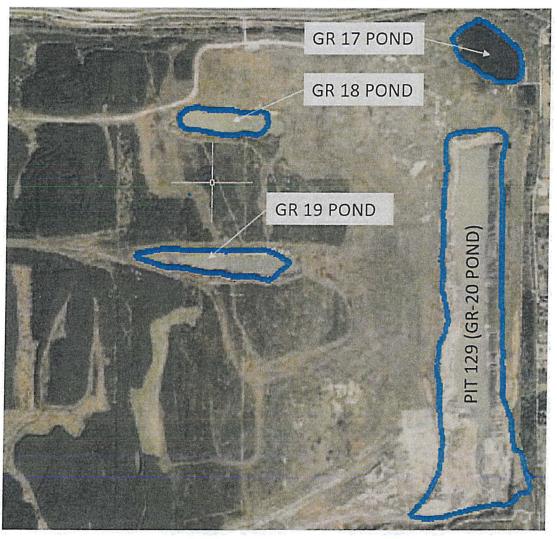


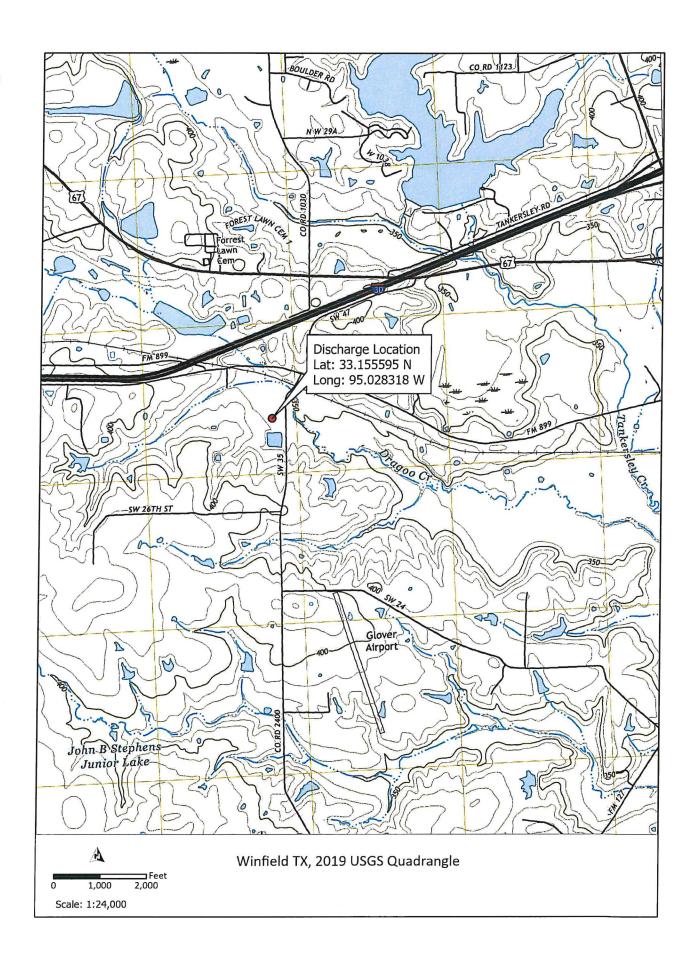






### G AREA Pit 129 POND NAMES AND LOCATIONS







Northeast Texas Municipal Water District

### Technical Memorandum 1 TANKERSLEY CREEK RESERVOIR STUDY

FINAL | February 2019

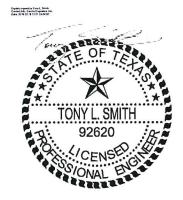




Northeast Texas Municipal Water District

# Technical Memorandum 1 TANKERSLEY CREEK RESERVOIR STUDY

FINAL | February 2019



### Contents

Section 1 - Executive Summary	1
Section 2 - Introduction	2
2.1 Background	2
2.1.1 Scope	3
Section 3 - Water Quantity Characterization	5
3.1 Regulatory Setting	5
3.2 Watershed Characteristics	5
3.3 Streamflow Characteristics	7
3.3.1 USGS Gage 07344500, Big Cypress Creek near Pittsburg, Texas	7
3.3.2 Synthetic Hydrologic Records for Key Locations	22
3.4 Impoundment Characteristics	23
3.5 Water Availability Modeling	25
3.5.1 Description	25
3.5.2 WAM Modifications	26
3.5.3 Scenarios	27
3.5.4 Model Results	27
3.5.5 Potential Supply Benefits	42
Section 4 - Water Quality Characterization	42
Section 5 - Conclusions and Recommendations	47
Section 6 - References	47
Appendices	
Appendix A Relevant Permits	
Appendix B Pond G-129 Area and Capacity Data	
Appendix C WAM Modifications	
Appendix D Report on Water Quality Sampling from Water Monitoring Solutions	s, Inc.



Tables		
Table 1	Drainage Area at Key Project Locations (sq. mi.)	6
Table 2	Summary Statistics of Daily Mean Streamflow (cfs) at Big Cypress Creek near Pittsburg, USGS 07344500	8
Table 3	Summary Statistics of Daily Mean Gage Height (ft) at Big Cypress Creek near Pittsburg, USGS 07344500	8
Table 4	Summary Statistics of Daily Mean Discharge (cfs) by Month for Big Cypress Creek near Pittsburg, 1944–2017	18
Table 5	Summary Statistics of Daily Mean Gage Height (ft) by Month for Big Cypress Creek near Pittsburg, 1989–2015	19
Table 6	Summary Statistics of Daily Mean Streamflow (cfs)	23
Table 7	Lake O' The Pines Firm Yield for System Operations	42
Table 8	Texas Surface Water Quality Standards (30 TAC §307)	43
Table 9	Water Quality Sampling Results for the Luminant Mine Pit1	43
Figures		
Figure 1	Upper Cypress Basin with Major Reservoirs and WR 04-5850 Diversions and Impoundments Identified	3
Figure 2	Aerial Imagery of Existing Luminant Pit G-129	4
Figure 3	Map of Project Vicinity	4
Figure 4	Pit G-129 Watershed Analysis	6
Figure 5	Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017	9
Figure 6	Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 2011–2017	10
Figure 7	Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015	11
Figure 8	Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 2014–2015	12
Figure 9	Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg	14
Figure 10	Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg	15
Figure 11	Flow Duration Curve for Big Cypress Creek near Pittsburg, 1944–2017	16
Figure 12	Flow Duration Curve for Big Cypress Creek near Pittsburg, 2011–2017	17
Figure 13	Monthly Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017	20



Figure 14	Monthly Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015	21
Figure 15	Boxplot of Annual Discharge for Big Cypress Creek near Pittsburg, 1944–2017	22
Figure 16	Comparison of Daily Average Flow Statistics between Big Cypress Creek near Pittsburg, Tankersley Creek, and Dragoo Creek	23
Figure 17	Planned Final Bathymetry for Pit G-129 (as provided by Luminant for this study)	24
Figure 18	Elevation-Area-Capacity Chart for Pit G-129	25
Figure 19	WAM Modifications and Analysis Points	26
Figure 20	Regulated Flow Duration Curves Downstream of Pit G-129 for Baseline Scenario	28
Figure 21	Regulated Flow Heat Map Downstream of Pit G-129 for Baseline Scenario	29
Figure 22	Monthly Statistics of Regulated Flow Downstream of Pit G-129 for Baseline Scenario	30
Figure 23	Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario	31
Figure 24	Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario	31
Figure 25	Regulated Flow Heat Map at Pilgrim's Pride Discharge for Baseline Scenario	32
Figure 26	Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge for Baseline Scenario	33
Figure 27	Regulated Flow Duration Curves at Big Cypress Creek near Pittsburg for Baseline Scenario	34
Figure 28	Regulated Flow Heat Map at Big Cypress Creek near Pittsburg for Baseline Scenario	35
Figure 29	Monthly Statistics of Regulated Flow at Big Cypress Creek near Pittsburg for Baseline Scenario	36
Figure 30	Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Low Flow Threshold Scenario	37
Figure 31	Regulated Flow Heat Map at Pilgrim's Pride Discharge with 1,200 ac-ft/month Threshold	39
Figure 32	Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge with 1,200 ac-ft/month Threshold	40
Figure 33	Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek	41



Figure 34	Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek	41
Figure 35	Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Sulfate	44
Figure 36	Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Nitrate	45
Figure 37	Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Phosphorus	46
Figure 38	Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Chlorophyll 2	46

### **Abbreviations**

7Q2 annual lowest mean discharge for 7 consecutive days with a 2-year recurrence

interval

ac acre

ac-ft/yr acre-feet per year
Carollo Carollo Engineers, Inc.

cf cubic feet

cfs cubic feet per second

F Fahrenheit

ft feet

μg/L micrograms per liter
 mg/L milligrams per liter
 mgd million gallons per day
 MPN Most Probable Number

msl mean sea level

psi pounds per square inch

SWQM Surface water quality monitoring

TCEQ Texas commission on Environmental Quality

TDS Total dissolved solids

μS/cm microsiemens/centimeter

USGS United States Geological Survey

WAM Water availability model
WWTP wastewater treatment plant



### Section 1

### **EXECUTIVE SUMMARY**

Streamflow in the Cypress Creek Basin varies drastically by season with periods of extreme low flow and dry conditions occurring during the summer months. An assessment of the potential use of an existing Luminant lignite mining pit as storage indicates the pit can provide an adequate quantity of water to meet potential downstream environmental and supplemental supply uses. After closure, Pit G-129 is estimated to have a storage capacity of 5,355 ac-ft in its final configuration.

A modified Full Authorization Water Availability Model was created by adding the proposed Pit G-129, impounding and operationally releasing flows downstream to determine the firm yield of the project and model potential impacts of the project on downstream flows. The model was run with and without the project to generate a baseline of simulated monthly flows at all control points in the model, thus allowing comparison of results with the pit storage project in operation. The firm yield of the pit was calculated using the Cypress Basin WAM and determined to be up to 480 ac-ft/yr. The pit has the capability to discharge up to 236 ac-ft per month (3.9 cfs) during the summer months and other low flow periods with potential to provide up to 900 ac-ft/yr of additional firm yield in Lake O' The Pines.

Additional study would be necessary to determine the ecological benefits from the discharge amounts derived herein. Specifically, hydraulic and habitat modeling would be necessary to determine the extent to which the additional flow would impact mesohabitat conditions for critical biology, and the geomorphology and connectivity of the downstream watershed. That said, the results of this study are encouraging in the sense that additional water could be made available during critical low-flow, drought conditions that could provide both water supply and environmental downstream benefits.

Based on this analysis of the historical water quality in the portion of the Cypress Creek Basin that would receive supplemental flow from the Luminant mine pit, i.e., Segments 0404 and 0403, the addition of flow from the pit is not expected to adversely impact water quality in the watershed.



### Section 2

### INTRODUCTION

Carollo Engineers, Inc. has completed a high-level assessment of the potential use of an existing lignite mining pit as storage to provide an adequate quantity and quality of water supply to meet potential downstream uses. Such uses may include, but are not be limited to, the following:

- "Beneficial" uses as defined by the State of Texas to bolster downstream water supplies and provide instream environmental benefits to the ecology of Tankersley and Big Cypress Creeks;
- Possible benefits to the stream through dilution of phosphates related to existing nutrient loadings to Big Cypress Creek (possibly through extension of programs related to reintroduction of Paddlefish); and.
- Supplementing downstream surface water supply.

### 2.1 Background

Luminant Mining Co. LLC (Luminant) is the current owner of Water Right (WR) 04-5850 permitting the diversion and use of not to exceed 50 acre-feet per year (ac-ft/yr) for lignite surface mining purposes, primarily dust suppression and other mining activities, and to maintain seven existing reservoirs within the Tankersley Creek and Hart Creek watersheds in the Monticello Lignite Mining Area in Titus County, Texas. Luminant's final pit at the Monticello G-Area, G-129, referred to hereafter as the "pit", is not presently one of these seven permitted reservoirs, but does have the capability to store water when not manually dewatered.

The Tankersley Creek watershed includes Dragoo Creek, several unnamed tributaries, and Tankersley Creek, itself a tributary of Big Cypress Creek in the Cypress Creek Basin. Figure 1 is a map of the upper Cypress Basin depicting the locations of major reservoirs, i.e., Lake Bob Sandlin and Lake O' The Pines, Tankersley and Big Cypress Creeks, and WR 04-5850 permitted impoundments and diversions. Aerial imagery of the local area is shown in Figure 2 highlighting Luminant's existing mine, denoted by the yellow circle. Figure 3 depicts the local area of interest, including permitted diversion and impoundment locations as represented by the Texas Commission on Environmental Quality (TCEQ) for WR 04-5850.

The Northeast Texas Municipal Water District (NETMWD) is the holder of substantial water rights and supplies downstream of Tankersley Creek. The primary sources of NETMWD supplies are surface water stored in Lake O' The Pines and Lake Bob Sandlin, as permitted in CoA 04-4590 as amended (refer to Appendix A for a copy of this certificate). The stated mission of NETMWD is "to protect the water quality in the Cypress Basin and to provide a sufficient supply of water to Northeast Texas." The pending closure of the existing Luminant pit presents a potential opportunity to use available storage in the pit to bolster both downstream instream flows and permitted water supplies in the basin.



Pilgrim's Pride Corporation holds a TPDES permit (No. WQ003017000) to treat and discharge a daily average of not more than 3.5 mgd of wastewater from the Southwest Wastewater Treatment Plant (WWTP) near Mount Pleasant to Tankersley Creek at the location shown in Figure 3. The permit limits the annual maximum load of total phosphorus of this discharge to not more than 44,650 lbs/year. A copy of the most recent TPDES permit is included in Appendix A.

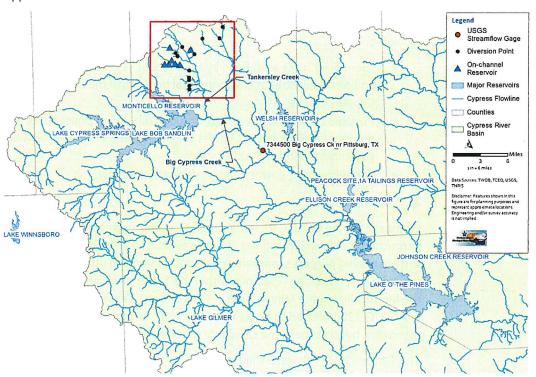


Figure 1 Upper Cypress Basin with Major Reservoirs and WR 04-5850 Diversions and Impoundments Identified

### 2.1.1 Scope

To investigate the potential efficacy for use of the pit by NETMWD, it is necessary to give consideration to both the quantity and quality of water available if the pit is to be used as storage, as well as the quality of water given the past use of the pit for coal mining and production.

The scope of work reported upon herein has thus focused upon the two elements of quantity and quality. Information has been compiled and observations collected in terms of both quantity and quality for analysis and evaluation. The results of these analyses provide a high-level assessment of the capability of the existing Luminant pit identified in Figure 2 to effectively address identified downstream objectives.





Figure 2 Aerial Imagery of Existing Luminant Pit G-129

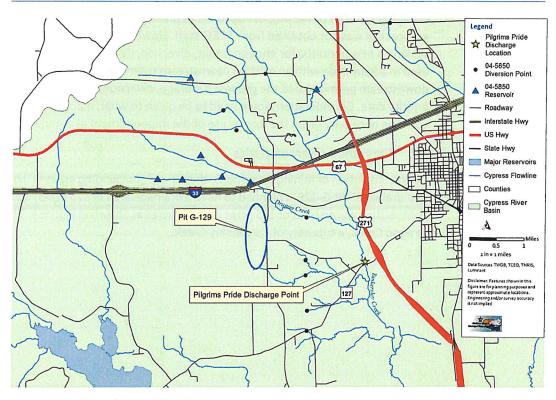


Figure 3 Map of Project Vicinity



For the water quantity characterization, the characteristics of the watershed, pit, and streamflow at identified key locations have been developed in order to provide a context for potential instream benefits from possible pumping of stored water from the pit. In order to derive the amount of water potentially available from use of the pit as surface water storage, a Water Availability Model (WAM) was then employed. Based on the results of the WAM, flows from storage are then quantified in the context of firm supply, streamflow (at various locations), and relative to key discharges in the stream.

For the characterization of water quality, an evaluation of the available information base was performed. Multiple surveys of the stored water in the existing pit were also performed in order to appropriately represent the water quality characteristics of the stored water in the pit relative to the receiving stream.

### Section 3

### WATER OUANTITY CHARACTERIZATION

### 3.1 Regulatory Setting

Informal communications were held with TCEQ staff to discuss at a high level the salient characteristics of the existing pit and potential approaches considered herein. Use of the latest Cypress Creek Basin WAM was confirmed to support the assessment of availability. Without divulging specifics of the proposed project at present, detailed information on permitting approaches was not obtained from TCEQ staff. However, in general options discussed included seeking a new permit(s) for impoundment, diversion, discharge and use of bed and banks to be used in conjunction with an existing downstream reservoir, or possible amendment of the downstream permit to add the proposed storage, diversion, and bed and banks use with a junior priority date. Consideration would need to be given to what, if any, additional requirements could be necessary given the former use of the impoundment as a mining pit.

#### 3.2 Watershed Characteristics

Upon completion of mining operations, the pit and surrounding areas will be graded for stability and drainage. Pit G-129 is planned to have a drainage area of 475 acres, with additional contributing watersheds of 145 acres and 192 acres as shown in Figure 4. The pit discharges to Dragoo Creek, a tributary of Tankersley Creek.



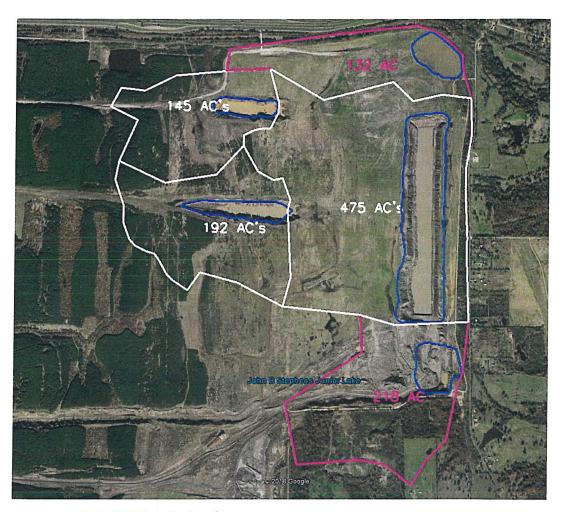


Figure 4 Pit G-129 Watershed Analysis

The contributing drainage area has also been determined for Tankersley Creek at the Pilgrim's Pride Southwest WWTP discharge location in order to estimate streamflow statistics at this location and allow for an evaluation of the potential water quality benefits to be gained through increased flow and dilution. Drainage areas for these locations and for the USGS gaging station on Big Cypress Creek near Pittsburg (USGS Gage 07344500) are shown in Table 1.

Table 1 Drainage Area at Key Project Locations (sq. mi.)

Location	Contributing Drainage Area (sq. miles)			
Big Cypress Creek near Pittsburg Gage Location	370			
Tankersley Creek at Pilgrim's Pride Discharge	21.9			
Pit G-129 Discharge to Dragoo Creek	1.27			



#### 3.3 Streamflow Characteristics

In order to appropriately assess the potential impacts from potentially available flow from use of the Luminant pit as a source of stored water, it is necessary to characterize the characteristics of streamflows and discharges in the receiving stream. Typically, streamflow measurements are made through use of streamflow gaging stations, normally operated by the U.S. Geological Survey (USGS). As there is no USGS gage located directly on Tankersley Creek, it is thus necessary to first characterize the hydrology of the nearest downstream gage proximate to the proposed project.

### 3.3.1 USGS Gage 07344500, Big Cypress Creek near Pittsburg, Texas

The USGS streamflow gaging station for Big Cypress Creek near Pittsburg, Texas (USGS 07344500) has been in operation since 1943, with daily mean streamflow observations available starting April 1, 1943. The gaging station is located at Latitude 33°01'15", Longitude 94°52'55" (North American Datum of 1927) at the downstream side of the bridge on Highway 11 in Titus County, Texas (see Figure 1). The vertical datum of the gage is 247.49 feet above NGVD29. The contributing drainage area is 370 square miles. The gaging station is located approximately 9 miles downstream of Lake Bob Sandlin, and flows have been regulated since July 1970.

Records of streamflow for complete water years (October through September) are available for 48 years through September 2017. Daily mean gage height records for complete water years are available for 11 years from 1989 to 2015. Various statistics were computed for the available streamflow and gage height data using mean daily observations as wells as monthly and annual time steps. Summary statistics of daily mean observations are presented in Tables 2 and 3 for streamflow and gage height, respectively. Statistics were calculated for the entire period of record (using data for complete water years) and for a more recent period for comparison based on extended periods of missing data. The record of observations for streamflow and gage height do not overlap except for portions of the more recent record, so different time periods were used for analysis. Time series charts of mean daily discharge for the two time periods are presented in Figures 5 and 6. The ordinate axis of these charts has been truncated at 200 cfs so that greater detail is visible during lower flow periods, which account for about 75 percent of the observations. Time series charts of mean daily gage height for the two time periods are presented in Figures 7 and 8, in order to facilitate potential future considerations of instream effects of the project. These time series charts illustrate the periods of missing data in the records.



Table 2 Summary Statistics of Daily Mean Streamflow (cfs) at Big Cypress Creek near Pittsburg, USGS 07344500

Start Date	End Date	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter- Quartile Range	Max
10/1/1943	9/30/2017	17,533	0	7.3	11	37	191	388	180	48,900
10/1/2010	9/30/2017	2,557	1.72	8.42	9.99	19.1	63	147	53.0	26,000

Table 3 Summary Statistics of Daily Mean Gage Height (ft) at Big Cypress Creek near Pittsburg, USGS 07344500

Start Date	End Date	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter- Quartile Range	Max
10/1/1988	9/30/2015	4,019	4.12	4.91	5.13	6.01	9.68	11.4	4.55	21.2
10/1/2013	9/30/2015	730	4.12	4.51	4.7	5.62	7.41	9.53	2.71	15.5

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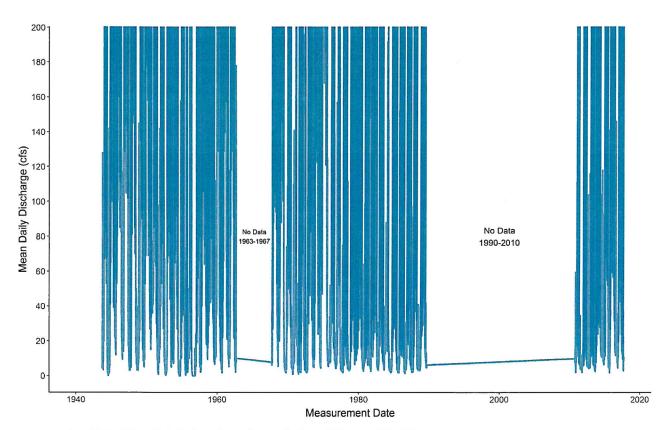


Figure 5 Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017

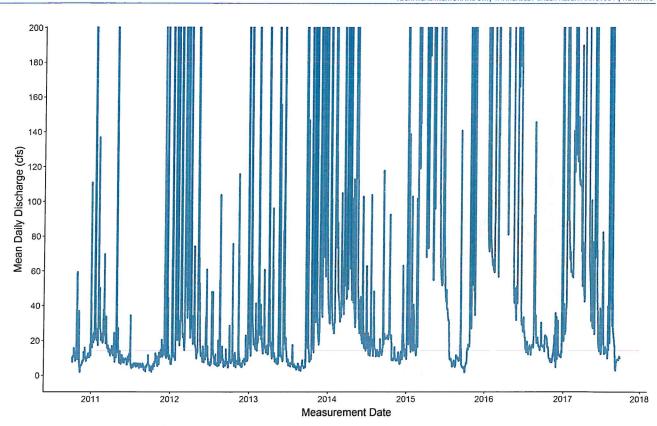


Figure 6 Time Series of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 2011–2017

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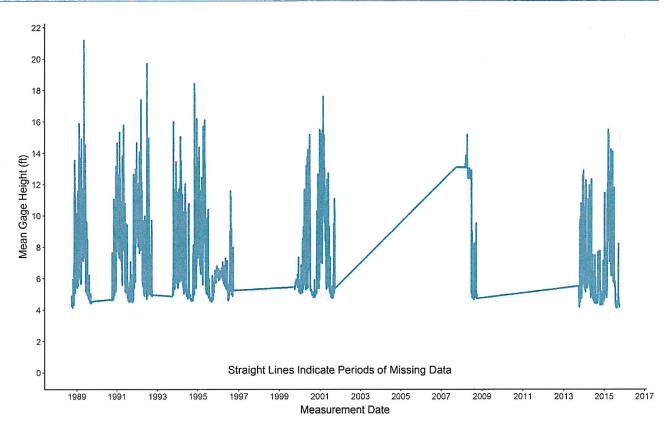


Figure 7 Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015

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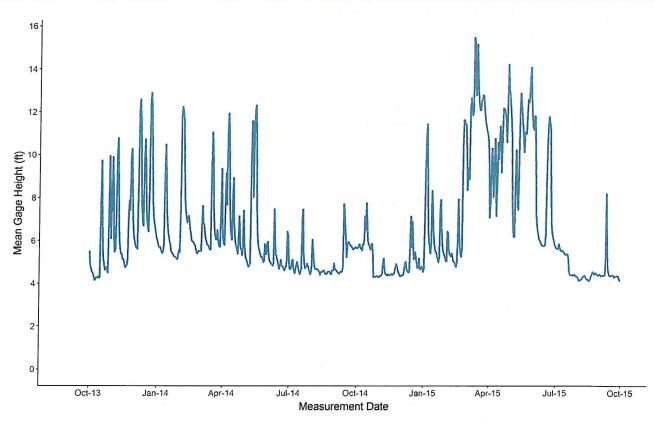


Figure 8 Time Series of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 2014–2015

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Discharge data are typically summarized by measures of location (mean or median) and variability (standard deviation or interquartile range). The median, or 50th percentile, is the central value of the distribution when the data are ranked in order of magnitude. For analysis of streamflow data, the median is preferable to the mean because it is not strongly influenced by the relative few extreme observations - such as short-duration high flow events. The 75th, 50th (median) and 25th percentiles split the data into four equal-sized quarters. The 75th percentile, also called the upper quartile, is a value which exceeds no more than 75 percent of the data and is exceeded by no more than 25 percent of the data. The 25th percentile, or lower quartile, is a value which exceeds no more than 25 percent of the data and is exceeded by no more than 75 percent. The interquartile range (IQR), defined as the 75th percentile minus the 25th percentile, measures the range of the central 50 percent of the data. Unlike the standard deviation, the IQR is not strongly influenced by outlying values, so IQR is the preferred measure of the variability of streamflow data (Helsel and Hirsch, 2002).

Summary statistics are presented using boxplots, also known as box-and-whisker plots, providing visual summaries of the median (center line of the box), IQR (box height), quartile skew (relative size of the box halves), and outliers (not shown). Whiskers are lines drawn from the ends of the box to the last observation within one step (1.5 times the height of the box, i.e., 1.5 times the IQR) beyond either end of the box. Boxplots allow for visual comparison of groups of data.

Boxplots for mean daily discharge and mean daily gage height are presented in Figures 9 and 10, respectively. These boxplots clearly show the decline in median and higher flows observed in the more recent record. However, it should be noted that the recent period of streamflow observations comprises only seven years of observations, including a period of extended severe drought with five years below the median and three years at or below the 10<sup>th</sup>-percentile. The recent period also includes the year with the highest total annual flow observed in 2016. Flow duration curves are presented in Figures 11 and 12 for the two time periods. These curves allow for inspection of the overall behavior of flows at the gage location; however, temporal trends are lost when portrayed in terms of frequency.

Discharge data for Big Cypress Creek were also summarized by month to analyze the seasonal variation in flows. Summary statistics of daily mean observations by month are presented in Tables 4 and 5 for streamflow and gage height, respectively. Table 4 also includes a summary of annual discharge in acre-feet. Monthly boxplots for mean daily discharge and mean daily gage height are presented in Figures 13 and 14, respectively. These figures illustrate the seasonality of flow with discharge being much higher in the winter and spring months (December through May) and much lower flows occurring during the summer and fall (June through November). The boxplot in Figure 15 illustrates the large variation in total annual discharge, with the highest years being more than 50 times greater than the lowest.

In Texas, the seven-day, two-year low-flow (7Q2) is often applied as a low-flow frequency statistic for water quality analyses and permitting. The 7Q2 is defined as the annual lowest mean discharge for 7 consecutive days with a 2-year recurrence interval. The 7Q2 for Big Cypress Creek near Pittsburg based on the complete period of record was calculated to be 3.64 cfs, or about 50 percent of the lower hexile flow reported in Table 2.



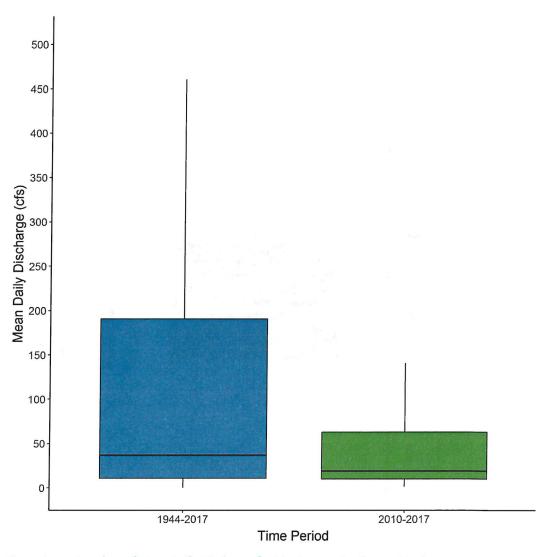


Figure 9 Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg



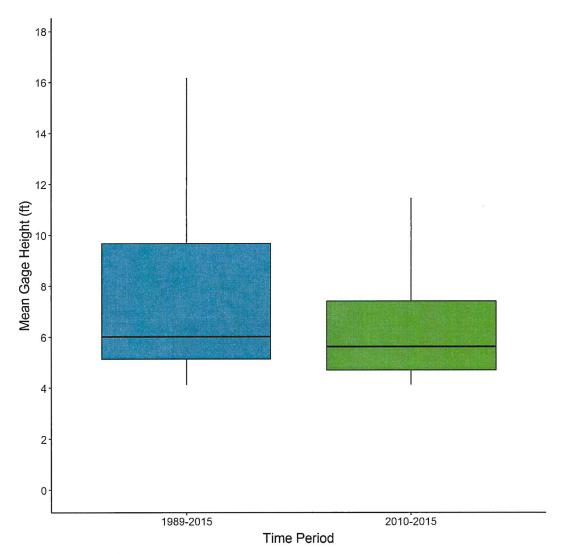


Figure 10 Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg



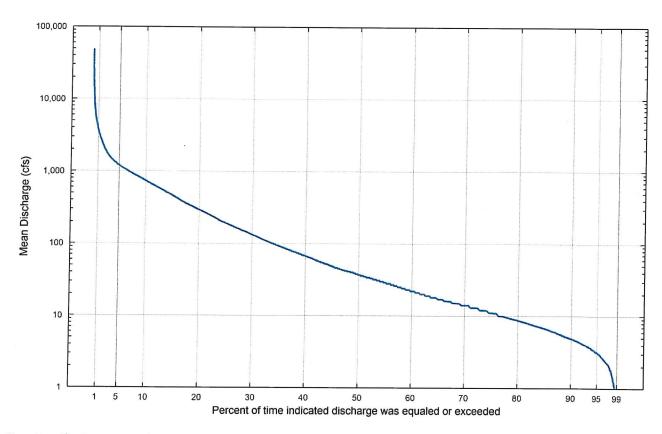


Figure 11 Flow Duration Curve for Big Cypress Creek near Pittsburg, 1944–2017

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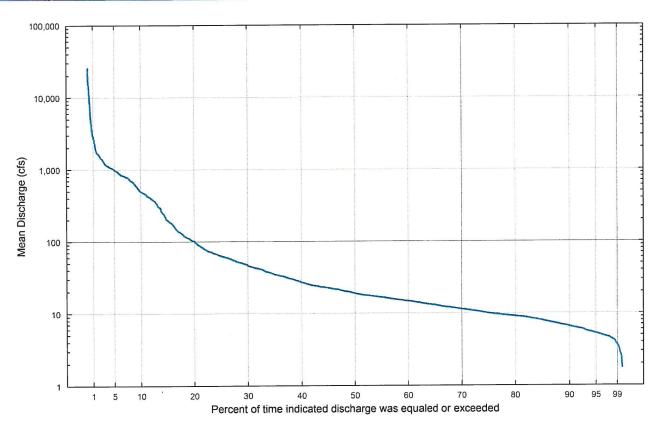


Figure 12 Flow Duration Curve for Big Cypress Creek near Pittsburg, 2011–2017

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Table 4 Summary Statistics of Daily Mean Discharge (cfs) by Month for Big Cypress Creek near Pittsburg, 1944–2017

Month	N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
January	1488	5.4	20	29	88.5	352	589	323	8,920
February	1357	11.5	37	60	147	500	730	440	15,500
March	1488	11.3	44	65.5	198	601	868	536	48,900
April	1440	6.1	25	39	140	479	733	440	31,300
May	1488	3.9	17	28	84.5	450	835	422	21,200
June	1440	0.5	9.0	13	33.8	132	277	119	21,000
July	1488	0	5.0	6.47	13	35	60	29	2,200
August	1488	0	3.2	4.2	7.3	15	20	11	686
September	1440	0	3.0	3.9	7.39	17.4	29	14	7,140
October	1488	0	3.9	5.2	11	29.2	48	24	12,500
November	1440	0	8.0	10	28	97	208	87	9,250
December	1488	1.3	14	19	67	262	536	243	26,000
Annual (AF)	48	11,700	89,100	123,000	175,400	250,300	308,400	127,300	596,000



Table 5 Summary Statistics of Daily Mean Gage Height (ft) by Month for Big Cypress Creek near Pittsburg, 1989–2015

N (days)	Min	Lower Hexile	Lower Quartile	Median	Upper Quartile	Upper Hexile	Inter-Quartile Range	Max
341	4.67	5.51	5.92	8.45	11.4	11.9	5.45	15.2
312	4.78	5.88	6.31	8.56	11.5	12.3	5.21	15.9
341	5.33	6.15	6.66	9.33	12.1	13.0	5.41	17.6
330	5.03	5.69	5.83	7.69	10.6	11.7	4.76	15.7
341	4.78	5.40	5.59	8.45	11.3	12.4	5.71	21.2
330	4.61	5.04	5.15	5.71	8.74	11.2	3.59	19.7
341	4.27	4.77	4.83	5.12	5.7	7.26	0.87	15.2
341	4,12	4.61	4.68	4.86	5.13	5.31	0.45	12.2
330	4.14	4.57	4.65	4.96	5.36	5.69	0.71	11.1
341	4.13	4.61	4.68	5.14	5.86	7.60	1.18	16.0
330	4.32	5.02	5.45	6.12	9.46	11.2	4.00	18.4
341	4.37	5.47	5.68	6.91	11.3	12.3	5.60	16.2
	341 312 341 330 341 330 341 341 330 341 330	341 4.67 312 4.78 341 5.33 330 5.03 341 4.78 330 4.61 341 4.27 341 4.12 330 4.14 341 4.13 330 4.32	N (days)         Min         Hexile           341         4.67         5.51           312         4.78         5.88           341         5.33         6.15           330         5.03         5.69           341         4.78         5.40           330         4.61         5.04           341         4.27         4.77           341         4.12         4.61           330         4.14         4.57           341         4.13         4.61           330         4.32         5.02	N (days)         Min         Hexile         Quartile           341         4.67         5.51         5.92           312         4.78         5.88         6.31           341         5.33         6.15         6.66           330         5.03         5.69         5.83           341         4.78         5.40         5.59           330         4.61         5.04         5.15           341         4.27         4.77         4.83           341         4.12         4.61         4.68           330         4.14         4.57         4.65           341         4.13         4.61         4.68           330         4.32         5.02         5.45	N (days)         Min         Hexile         Quartile         Median           341         4.67         5.51         5.92         8.45           312         4.78         5.88         6.31         8.56           341         5.33         6.15         6.66         9.33           330         5.03         5.69         5.83         7.69           341         4.78         5.40         5.59         8.45           330         4.61         5.04         5.15         5.71           341         4.27         4.77         4.83         5.12           341         4.12         4.61         4.68         4.86           330         4.14         4.57         4.65         4.96           341         4.13         4.61         4.68         5.14           330         4.32         5.02         5.45         6.12	N(days)         Min         Hexile         Quartile         Median         Quartile           341         4.67         5.51         5.92         8.45         11.4           312         4.78         5.88         6.31         8.56         11.5           341         5.33         6.15         6.66         9.33         12.1           330         5.03         5.69         5.83         7.69         10.6           341         4.78         5.40         5.59         8.45         11.3           330         4.61         5.04         5.15         5.71         8.74           341         4.27         4.77         4.83         5.12         5.7           341         4.12         4.61         4.68         4.86         5.13           330         4.14         4.57         4.65         4.96         5.36           341         4.13         4.61         4.68         5.14         5.86           330         4.32         5.02         5.45         6.12         9.46	N(days)         Min         Hexile         Quartile         Wedian         Quartile         Opper Hexile           341         4.67         5.51         5.92         8.45         11.4         11.9           312         4.78         5.88         6.31         8.56         11.5         12.3           341         5.33         6.15         6.66         9.33         12.1         13.0           330         5.03         5.69         5.83         7.69         10.6         11.7           341         4.78         5.40         5.59         8.45         11.3         12.4           330         4.61         5.04         5.15         5.71         8.74         11.2           341         4.27         4.77         4.83         5.12         5.7         7.26           341         4.12         4.61         4.68         4.86         5.13         5.31           330         4.14         4.57         4.65         4.96         5.36         5.69           341         4.13         4.61         4.68         5.14         5.86         7.60           330         4.32         5.02         5.45         6.12	N (days)         Min         Hexile         Quartile         Median         Quartile         Upper Hexile         Range           341         4.67         5.51         5.92         8.45         11.4         11.9         5.45           312         4.78         5.88         6.31         8.56         11.5         12.3         5.21           341         5.33         6.15         6.66         9.33         12.1         13.0         5.41           330         5.03         5.69         5.83         7.69         10.6         11.7         4.76           341         4.78         5.40         5.59         8.45         11.3         12.4         5.71           330         4.61         5.04         5.15         5.71         8.74         11.2         3.59           341         4.27         4.77         4.83         5.12         5.7         7.26         0.87           341         4.12         4.61         4.68         4.86         5.13         5.31         0.45           330         4.14         4.57         4.65         4.96         5.36         5.69         0.71           341         4.13         4.61



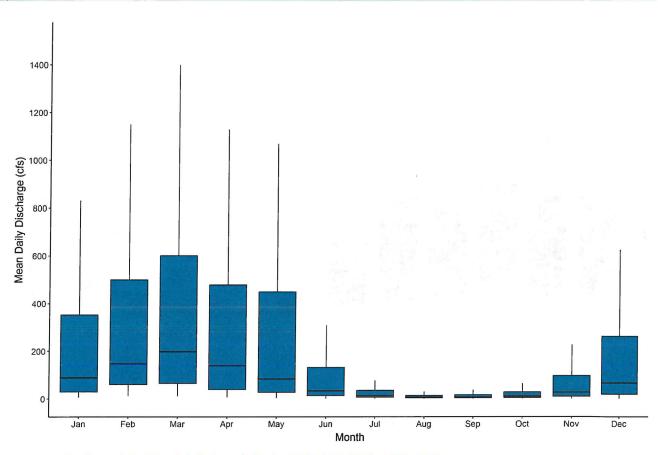


Figure 13 Monthly Boxplots of Mean Daily Discharge for Big Cypress Creek near Pittsburg, 1944–2017

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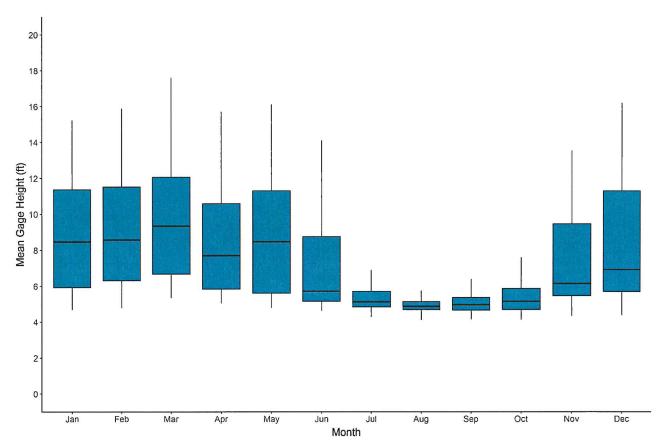


Figure 14 Monthly Boxplots of Mean Daily Gage Height for Big Cypress Creek near Pittsburg, 1989–2015

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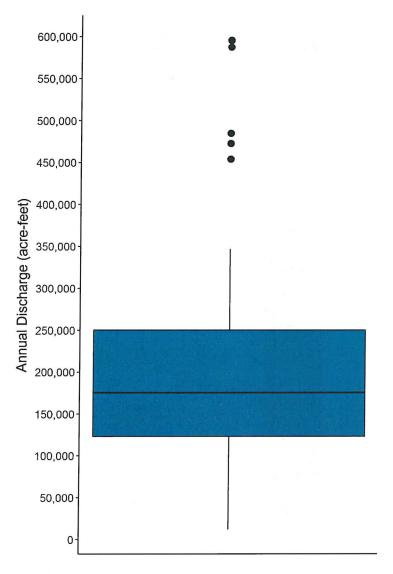


Figure 15 Boxplot of Annual Discharge for Big Cypress Creek near Pittsburg, 1944–2017

## 3.3.2 Synthetic Hydrologic Records for Key Locations

Synthetic hydrologic records have been developed from the observed daily average flows at the USGS gage location using a drainage area ratio method. Using this method, a daily average flow at the upstream location was estimated from the gaged flow by multiplying the gaged flow by the drainage area ratio of the upstream location to the gage location. A comparison of summary flow statistics for the observed and estimated hydrologic records is provided in Table 6. Figure 16 illustrates the relative magnitudes of various flow statistics at these locations (note the ordinate-axis has been truncated at 50 cfs).



Location	Maximum	Upper Hexile	Average	Median	Lower Hexile	Minimum
USGS Gage 07344500	48,900	384	286	37	7.3	0
Tankersley Creek at Pilgrim's Pride Discharge	2,890	22.7	16.9	2.2	0.4	0
Pit G-129 Discharge to Dragoo Creek	168	1.3	1.0	0.1	0	0

Table 6 Summary Statistics of Daily Mean Streamflow (cfs)

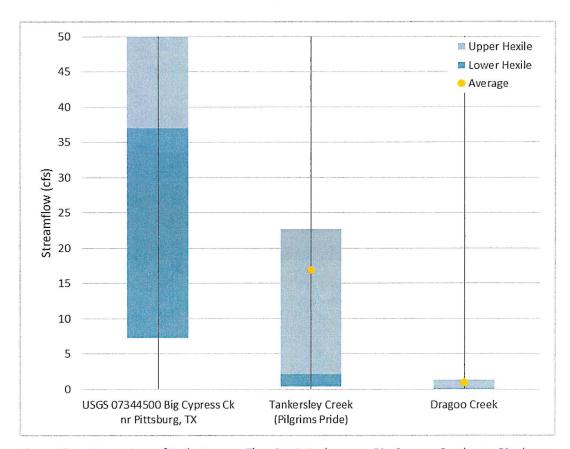


Figure 16 Comparison of Daily Average Flow Statistics between Big Cypress Creek near Pittsburg, Tankersley Creek, and Dragoo Creek

# 3.4 Impoundment Characteristics

At the outset of this study, several calls were held between Carollo and Luminant staff. Through the course of these discussions, Luminant indicated that the final configuration of the pit, were it to be ultimately used for the purposes described herein, would likely differ from the existing configuration because the pit would need to be finalized to stabilize side slopes and optimize storage volume. Luminant noted and provided data for three final discharge ponds representing the best projection of the water quality expected at Pit G-129 once reclamation is complete and the pit is filled to capacity.



The estimated final pit configuration was also provided by Luminant (see Figure 17) along with tabular data that were used to develop a relationship between the final pit configurations elevation, area, and capacity for quantifying the storage capability of the final pit. This relationship was then utilized to formulate inputs into subsequent modeling of water availability and storage, reported in detail later herein.

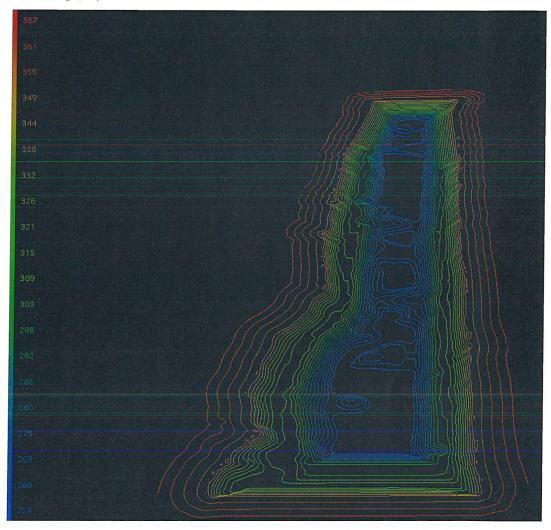


Figure 17 Planned Final Bathymetry for Pit G-129 (as provided by Luminant for this study)

As currently configured, pit G-129 has a volume of 5,480 ac-ft with a surface area of 81.7 acres. Average natural discharge from the pit to Tankersley Creek is 1.1 mgd, but discharge can be increased to 2.2 mgd for one year.

After closure of the mining operations, Pit G-129 will have a planned storage capacity of 5,355 ac-ft and surface area of 98 acres when full. Relations for storage volume and surface area with elevation are shown in Figure 18.



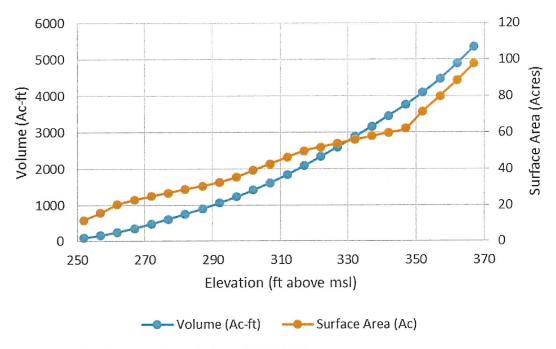


Figure 18 Elevation-Area-Capacity Chart for Pit G-129

## 3.5 Water Availability Modeling

#### 3.5.1 Description

The official Water Availability Model (WAM) for the Cypress Creek Basin was obtained from TCEQ and used to evaluate water availability, firm supply, and reliability of potential and existing water rights. The input files for Cypress Basin WAM Run 3 were obtained on August 17, 2018 with a version date of June 18, 2015. Information from the Cypress Basin WAM Run 8 dated January 13, 2010 was also utilized in developing the model scenarios described in the following sections.

The hydrologic analysis period for the Cypress Creek Basin WAM spans from January 1948 to December 1998. The specific WAM scenarios employed for this effort were the Full Authorization (Run 3) and Current Conditions (Run 8) models with minor modifications as described below. The Full Authorization model represents full implementation of existing water rights, 100 percent reuse, and original reservoir storage capacities. WAM Run 3 represents the current state of water development from a legal, regulatory standpoint because it depicts conservative conditions that would be expected if all users fully exercised their current legal surface water permits. This scenario is used and maintained by TCEQ specifically for surface water right permitting and regulatory determinations of water availability.

The Current Conditions (WAM Run 8) model shows the amount of water that would remain available for appropriation if all permitted water rights holders withdrew the amount of water they are currently using, based generally on the maximum use in a recent ten-year period and minimum return flows over a recent five-year period; thus, return flows are included in this scenario as a means of depicting a more realistic characterization of water availability. A third scenario also evaluated as part of this analysis is a hybrid of the Full Authorization and Current Conditions models using the Full Authorization model and adding current return flows upstream of Lake O' The Pines.



The most recent version of the Water Rights Analysis Package (WRAP) simulation software, developed and maintained by Texas A&M University, dated May 2018, was used for all analyses in this study (Wurbs, 2018). WRAP performs priority-based water accounting computations for each water right and control point in monthly time steps throughout the period of analysis. This water accounting system tracks the effects of reservoir storage, net reservoir evaporation, instream flow requirements, diversions, and return flows on streamflow data.

WRAP simulates specified water management and use scenarios using a repetition of historical hydrology represented by sequences of monthly naturalized streamflows and reservoir net evaporation—precipitation rates covering the hydrologic period of analysis (Wurbs, 2018). Naturalized flows can be characterized as those flows that would have occurred historically, in the absence of water management activities such as consumptive diversions and discharges back to the watercourse.

#### 3.5.2 WAM Modifications

The TCEQ WAM input files for Run 3 and Run 8 scenarios were modified for this study to include the impoundment location and additional key locations regarding discharges and flow analysis. These locations were added to the WAM as control points, shown in Figure 19, specifically located at the impoundment location, the Pilgrim's Pride Southwest WWTP TPDES permitted discharge location on Tankersley Creek, and at a location on Tankersley Creek immediately upstream of the confluence with Big Cypress Creek. These additional control points allow model results to be processed and impacts of the project quantified at these locations. Detailed WAM modifications are provided in Appendix C.

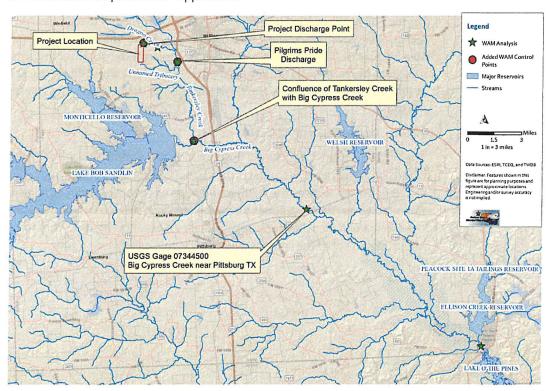


Figure 19 WAM Modifications and Analysis Points



#### 3.5.3 Scenarios

The Baseline WAM against which all other scenarios are compared is the TCEQ Run 3 model with the addition of the three aforementioned Control Points. This scenario provides a history of regulated flows in the basin that represents water availability with full implementation of all water rights. A modified Run 3 model was created by adding in the proposed Pit G-129 impounding and operationally releasing flows into Dragoo Creek to determine the firm yield of the project and evaluate impacts of the project on downstream flows. The Run 3 model was run with and without the project to generate a baseline of simulated monthly flows at all control points in the model, thus allowing comparison of results with the pit storage project in operation. Additional simulations, referred to herein as optimized release scenarios, were developed from the Run 3 model to evaluate discharge from the pit at critical periods of low flow in the receiving stream. The details for these simulations are explained in subsequent sections of this report.

The scenarios developed to evaluate current conditions, i.e., WAM Run 8, were created by adding the permitted TPDES Discharges (return flows) using the values specified in CI (Constant Inflow) records from the Cypress WAM Run 8 input files dated January 13, 2010. For the Current Conditions scenario, Pilgrim's Pride return flows were set equal to the 10-year minimum discharge from the Pilgrim's Pride Southwest WWTP; for the Permitted Conditions scenario, Pilgrim's Pride return flows were set equal to the permitted discharge of 3.5 mgd. Similar to the Run 3 model, these scenarios were run with and without the project to allow quantitative assessment of the downstream impacts of the project.

#### 3.5.4 Model Results

For the Full Authorization (Run 3) scenario, the firm yield of the pit was calculated to be 480 ac-ft/yr, which could allow for a constant diversion and discharge of approximately 40 ac-ft/month. The following paragraphs summarize the potential impacts and benefits of the project at the three selected key locations: (1) downstream of Pit G-129; (2) on Tankersley Creek at Pilgrim's Pride Discharge; and (3) at USGS Gage 07344500 on Big Cypress Creek near Pittsburg.

#### 3.5.4.1 Downstream of Pit G-129

The WAM-simulated (regulated) flow duration curves downstream of Pit G-129 are shown in Figure 20. At higher flows, greater than about the 30<sup>th</sup>-percentile, impoundment of water in Pit G-129 generally reduces the volume of flow as water is taken into storage in the pit. At lower flows, however, the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream for about 11 percent of the months when flow would otherwise be zero.



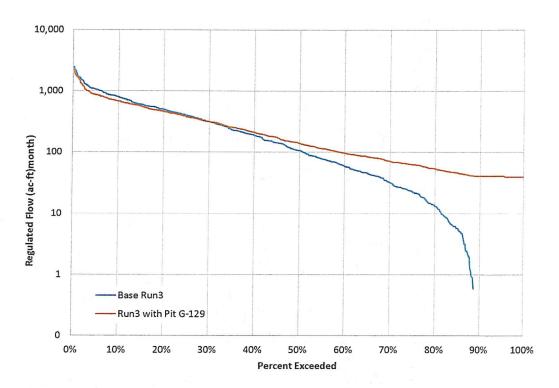


Figure 20 Regulated Flow Duration Curves Downstream of Pit G-129 for Baseline Scenario

Two additional figures are provided to help visualize the downstream impacts of impoundment and discharge. Figure 21 is a heat map showing the relative percentage change in regulated flow downstream of Pit G-129 for each month of the historical simulation period, and Figure 22 shows monthly statistics of the regulated flows with and without the project. From the heat map in Figure 21, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of 18 percent. Conversely, the project provides an average increase in monthly flow of 32 percent annually with increased flows occurring in 91 percent of the summer and fall months that are typically characterized by lower flows. During the summer months of July, August, and September, 100 percent of the modeled regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 70 percent of the months.

The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 22. The most striking example is the month of August where the median flow with the project (48 ac-ft/month) is greater than the upper hexile (83<sup>rd</sup>-percentile) flow without the project (44 ac-ft/month).



	Month 1				5				9	10		1
ar	The second secon	2	3	304	0%	6 49%	7 66%	8 87%	82%	83%	57%	549
48	1% 5%	-1% 7%	-3% -24%	-3% -14%	-1%	35%	49%	75%	51%	2%	18%	-7
49	THE CHARGE STREET, SHIP STREET, SAN	NOT STATE OF STREET	Carried Species, Annual Control	-14%	-1%	-3%	30%	41%	-20%	44%	51%	46
50	-24% 13%	-21% -23%	-3% -2%	7%	10%	31%	33%	93%	68%	74%	54%	45
51 52	14%	27%	11%	-24%	-17%	10%	71%	95%	100%	98%	39%	10
53	17%	12%	16%	-14%	-24%	73%	27%	68%	36%	76%	50%	13
55 54	7%	19%	37%	39%	7%	25%	97%	100%	100%	66%	63%	37
55	40%	21%	11%	10%	60%	77%	98%	62%	75%	38%	88%	66
56	65%	8%	46%	61%	23%	98%	100%	100%	100%	100%	95%	87
57	78%	39%	11%	3%	-46%	-25%	73%	85%	35%	14%	-29%	-5
58	-19%	18%	-16%	-25%	-25%	-12%	-7%	42%	6%	50%	10%	21
59	42%	-13%	-18%	-16%	8%	43%	31%	60%	64%	66%	46%	7
60	-25%	-14%	-15%	37%	43%	23%	17%	84%	31%	32%	32%	-30
61	-16%	-16%	-17%	-7%	39%	-10%	14%	62%	59%	70%	16%	-18
62	-16%	-16%	-17%	-13%	-3%	34%	49%	90%	46%	56%	25%	26
63	20%	28%	15%	19%	12%	63%	100%	100%	100%	89%	100%	76
64	62%	41%	18%	17%	28%	60%	100%	52%	49%	71%	68%	47
65	24%	5%	11%	26%	10%	18%	87%	86%	85%	100%	94%	100
66	59%	27%	35%	2%	-44%	37%	95%	93%	53%	57%	44%	33
67	25%	35%	27%	9%	8%	10%	65%	83%	76%	95%	42%	13
68	7%	11%	-36%	-15%	-29%	-18%	40%	62%	16%	56%	17%	7
69	6%	-29%	-22%	-17%	-22%	51%	81%	88%	87%	87%	55%	34
70	23%	12%	-32%	-20%	20%	41%	79%	81%	90%	62%	56%	60
71	49%	23%	29%	56%	63%	89%	32%	47%	92%	81%	34%	5
72	7%	19%	26%	50%	60%	30%	18%	87%	100%	49%	16%	10
73	8%	8%	-38%	-30%	11%	-19%	63%	74%	41%	13%	-23%	-19
74	-18%	-10%	20%	-24%	21%	-20%	75%	37%	-22%	-4%	-23%	-21
75	-16%	-23%	-22%	-17%	-23%	-6%	46%	54%	88%	81%	73%	61
76	60%	28%	7%	13%	-28%	47%	18%	75%	82%	100%	100%	45
77	47%	6%	-25%	-23%	45%	68%	100%	74%	100%	100%	46%	48
78	22%	21%	10%	58%	21%	100%	100%	100%	100%	100%	45%	56
979	6%	9%	-35%	-25%	-19%	12%	33%	-7%	-22%	72%	27%	-6
980	-20%	-18%	-8%	-20%	-18%	39%	100%	100%	48%	63%	58%	32
81	49%	23%	21%	62%	5%	-36%	22%	100%	100%	9%	21%	60
982	26%	14%	15%	12%	-27%	8%	38%	100%	100%	100%	22%	2
983	19%	-16%	-21%	-3%	9%	38%	100%	100%	100%	82%	100%	51
984	44%	18%	17%	34%	100%	100%	100%	100%	100%	7%	14%	8
85	23%	4%	7%	-26%	-26%	28%	100%	100%	100%	32%	23%	5
86	36%	-29%	34%	9%	-13%	-16%	100%	100%	86%	84%	47%	19
87	18%	-5%	-26%	34%	100%	33%	66%	100%	100%	100%	16%	-26
88	-20%	-18%	-17%	-9%	73%	100%	100%	100%	100%	99%	6%	14
189	11%	-29%	-19%	-17%	-23%	-14%	47%	100%	100%	100%	100%	79
90	10%	8%	-27%	-22%	-20%	16%	100%	45%	40%	64%	8%	-21
91	-22%	-20%	-15%	-15%	-22%	-15%	45%	100%	65%	28%	9%	-21
92	-13%	-19%	-22%	26%	17%	-20%	-21%	14%	27%	100%	13%	-22
93	-22%	-17%	-20%	-15%	-5%	-3%	94%	68%	77%	6%	22%	-11
94	-5%	-19%	-19%	18%	-10%	32%	-19%	100%	100%	12%	-23%	-21
95	-24%	22%	-15%	-19%	-20%	30%	47%	97%	89%	100%	100%	65
96	35%	47%	44%	27%	51%	36%	69%	22%	26%	17%	8%	9
97	11%	-34%	-22%	-21%	-6%	-15%	21%	44%	100%	60%	33%	13
98	-22%	-18%	-16%	19%	88%	100%	100%	100%	17%	14%	15%	(

Figure 21 Regulated Flow Heat Map Downstream of Pit G-129 for Baseline Scenario



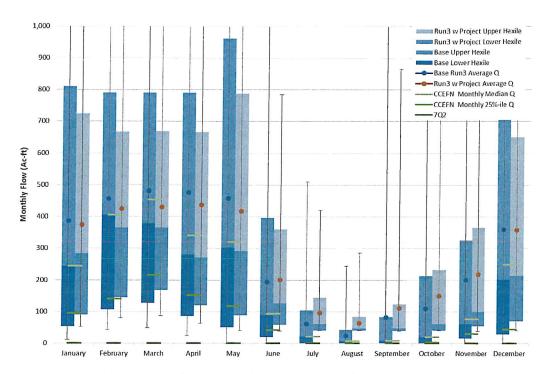


Figure 22 Monthly Statistics of Regulated Flow Downstream of Pit G-129 for Baseline Scenario

#### 3.5.4.2 Tankersley Creek at Pilgrim's Pride Discharge

The WAM-simulated (regulated) flow duration curves for Tankersley Creek at the Pilgrim's Pride discharge location are shown in Figure 23, with scaled views presented in Figure 24. At higher flows, greater than about the 23<sup>rd</sup>-percentile, impoundment of water in Pit G-129 generally reduces the volume of flow as water is taken into storage in the pit, as shown in Figure 24(a). A transition from high flow to low flow occurs in the range from about the 25<sup>th</sup>-percentile to the 40<sup>th</sup>-percentile, as shown in Figure 24(b) where the impoundment does not have a significant impact on flows. At lower flows, from about the median flow and lower as shown in Figure 24(c), the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream. In this scenario, constant discharge from the pit provides a continuous baseflow for about 11 percent of the months when flow would otherwise be zero. Note that discharges from the Pilgrim's Pride Southwest WWTP are not included in the Run 3 simulations.

From the heat map in Figure 25, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of only 4 percent. Conversely, the project provides an average increase in monthly flow of 23 percent with increased flows occurring in 91 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 50 percent of the months.



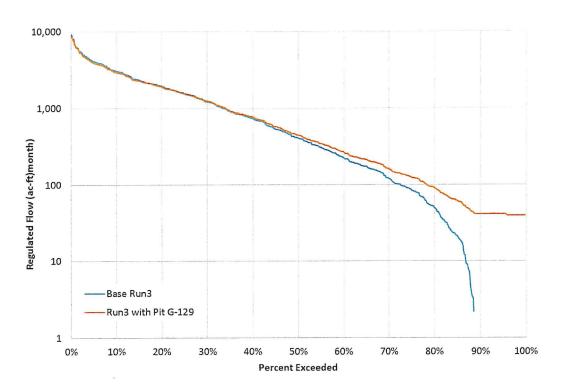


Figure 23 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario

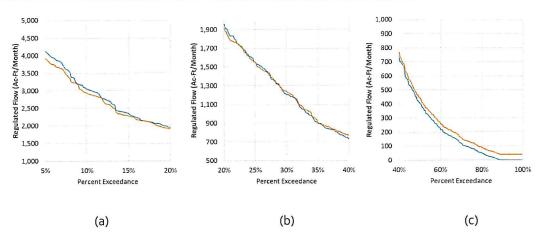


Figure 24 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Baseline Scenario



Year 1948 1949 1950 1951 1952 1953	0% 1%	0%	-1%	4	5	6	7	8	9	10	11	
1949 1950 <u> </u>	1%	070		-1%	0%	20%	34%	64%	54%	56%	26%	249
1950 🧱 1951 1952		2%	-4%	-3%	0%	13%	21%	44%	22%	1%	3%	-29
1951 1952	-5%	-5%	-1%	0%	0%	-1%	10%	16%	-4%	17%	22%	199
1952	4%	-5%	-1%	2%	2%	11%	12%	77%	37%	43%	24%	18
	4%	9%	3%	-5%	-4%	2%	40%	82%	100%	92%	15%	3
	5%	4%	5%	-3%	-5%	41%	9%	36%	13%	45%	21%	49
1954	2%	6%	14%	14%	2%	8%	89%	100%	100%	34%	31%	149
1955	15%	7%	3%	3%	28%	47%	92%	30%	45%	14%	66%	349
1956	34%	2%	18%	29%	7%	92%	100%	100%	100%	100%	83%	649
1957	48%	15%	3%	1%	-6%	-5%	41%	61%	12%	4%	-6%	-19
1958	-4%	5%	-4%	-6%	-5%	-3%	-2%	16%	2%	21%	3%	79
1959	16%	-3%	-4%	-4%	3%	12%	11%	29%	32%	34%	19%	29
1960	-5%	-3%	-3%	14%	17%	7%	5%	58%	11%	11%	11%	-59
1961	-4%	-4%	-4%	-1%	15%	-2%	3%	30%	28%	38%	5%	-49
1962	-4%	-4%	-4%	-3%	-1%	12%	21%	70%	18%	25%	8%	99
.963	6%	10%	5%	6%	3%	31%	100%	100%	100%	69%	100%	459
.964	30%	16%	6%	5%	9%	29%	100%	22%	20%	39%	36%	199
1965	8%	1%	3%	8%	3%	5%	64%	62%	60%	100%	81%	100%
.966	28%	9%	13%	0%	-6%	13%	85%	77%	23%	26%	18%	129
.967	8%	12%	9%	3%	2%	3%	33%	56%	46%	85%	16%	49
1968	2%	3%	-5%	-3%	-5%	-3%	15%	31%	5%	25%	5%	29
969	1%	-5%	-5%	-4%	-5%	22%	53%	66%	65%	63%	24%	129
970	7%	3%	-5%	-4%	4%	16%	50%	53%	72%	30%	25%	28%
971	20%	7%	10%	25%	31%	69%	11%	19%	75%	54%	12%	1%
.972	2%	6%	9%	21%	29%	10%	6%	63%	100%	21%	5%	3%
973	2%	2%	-6%	-6%	3%	-4%	31%	43%	15%	4%	-5%	-4%
974	-5%	-2%	5%	-5%	7%	-4%	44%	13%	-5%	-1%	-5%	-5%
975	-4%	-5%	-5%	-4%	-5%	-2%	18%	24%	67%	52%	42%	30%
976	29%	9%	2%	4%	-5%	19%	5%	44%	56%	100%	100%	18%
977	19%	2%	-5%	-5%	18%	37%	100%	44%	100%	100%	19%	20%
978	7%	6%	3%	27%	6%	100%	100%	100%	100%	100%	18%	25%
979	2%	2%	-5%	-5%	-4%	3%	12%	-1%	-5%	41%	9%	-2%
980	-5%	-4%	-2%	-5%	-4%	15%	100%	100%	20%	31%	27%	11%
981	20%	8%	7%	30%	1%	-6%	7%	100%	100%	2%	6%	29%
982	9%	4%	5%	4%	-5%	2%	14%	100%	100%	100%	7%	1%
983	4%	-4%	-5%	-1%	3%	14%	100%	100%	100%	54%	100%	22%
984	17%	5%	5%	12%	100%	100%	100%	100%	100%	2%	4%	2%
985	7%	1%	2%	-4%	-5%	9%	100%	100%	100%	11%	7%	1%
986	13%	-5%	12%	2%	-3%	-4%	100%	100%	61%	59%	19%	6%
987	6%	-1%	-6%	12%	100%	12%	34%	100%	100%	100%	5%	-6%
988	-4%	-4%	-4%	-2%	42%	100%	100%	100%	100%	95%	2%	4%
989	3%	-5%	-5%	-3%	-5%	-4%	19%	100%	100%	100%	100%	50%
990	3%	2%	-6%	-5%	-5%	5%	100%	18%	15%	32%	2%	-4%
991	-5%	-5%	-3%	-4%	-5%	-3%	18%	100%	33%	9%	2%	-5%
992	-3%	-4%	-5%	9%	5%	-4%	-4%	4%	9%	100%	4%	-5%
993	-5%	-4%	-5%	-3%	-1%	-1%	82%	37%	47%	2%	7%	-2%
994	-1%	-4%	-4%	6%	-2%	11%	-4%	100%	100%	3%	-5%	-5%
995	-5%	7%	-3%	-5%	-5%	10%	19%	91%	68%	100%	100%	33%
996	12%	19%	17%	9%	22%	13%	38%	7% 18%	9%	5% 29%	2%	2%
97	3%	-6% -4%	-5%	-5% 6%	-1%	-3%	7% 100%	100%	5%	4%	12%	3%
998	-5%	-4%	-4%	0%	65%	100%	100%	100%	5%	4%	5%	2%

Figure 25 Regulated Flow Heat Map at Pilgrim's Pride Discharge for Baseline Scenario



The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 26, although the results are not as striking as for the location just downstream from the pit because the monthly discharge of 40 ac-ft is much lower in comparison to typical regulated flows at the Pilgrim's Pride discharge location.

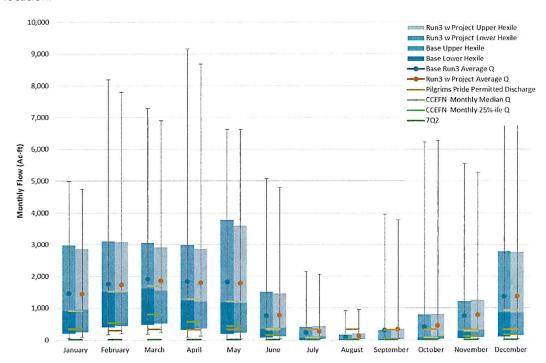


Figure 26 Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge for Baseline Scenario

# 3.5.4.3 Big Cypress Creek near Pittsburg (USGS Gage 07344500)

The WAM-simulated (regulated) flow duration curves at the USGS gage on Big Cypress Creek near Pittsburg are shown in Figure 27. The addition of the pit discharge does not significantly affect flows at the gage except at about the 80<sup>th</sup>-percentile and lower. During these periods of lower flows, the continuous discharge of stored water at a rate of 40 ac-ft/month increases the volume of flow downstream and provides a baseflow of 40 ac-ft/month downstream for about 11 percent of the months when flow would otherwise be zero.

From the heat map in Figure 28, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of less than one percent. Conversely, the project provides an average increase in monthly flow of 13 percent with increased flows occurring in 91 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period, while more than half the regulated flow comes from the project in 31 percent of the months.

The increase in flow provided by the project during the summer months, although significant during extreme dry periods, is not apparent in the monthly statistic chart shown in Figure 29 because the monthly discharge of 40 ac-ft is very low compared to typical regulated flows at the gage location.



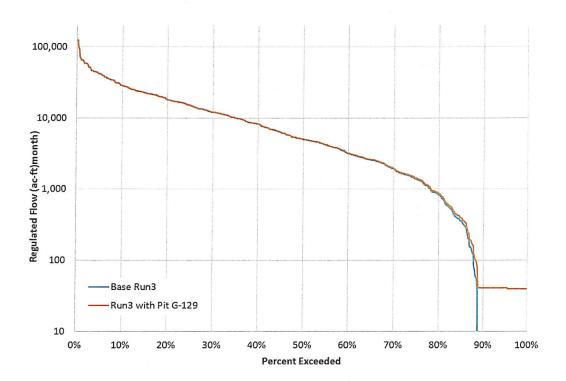


Figure 27 Regulated Flow Duration Curves at Big Cypress Creek near Pittsburg for Baseline Scenario



	Month		Was da	J. M. L.		F., X. H.	P. S. (17)					Media II. 1
Year	<u> </u>	2	3	4	5	6	7	8	9	10	11	12
1948	0.02%	-0.02%	-0.06%	-0.08%	0.01%	1.62%	3.08%	9.65%	6.71%	7.13%	2.08%	1.85%
1949	0.08%	0.14%	-0.65%	-0.51%	-0.05%	0.90%	1.58%	4.52%	1.70%	0.09%	0.52%	-0.27%
1950	-0.62%	-0.31%	-0.06%	-0.01%	0.00%	-0.11%	0.71%	1.16%	-0.57%	1.27%	1.68%	1.40%
1951	0.25%	-0.68%	-0.09%	0.36%	0.42%	0.75%	0.82%	17.19%	3.37%	4.39%	1.94%	1.36%
1952	0.28%	0.61%	0.21%	-0.94%	-0.34%	0.38%	3.83%	21.71%	100.00%	40.38%	1.03%	0.19%
1953	0.34%	0.23%	0.31%	-0.47%	-0.91%	4.19%	0.62%	3.30%	0.94%	4.78%	1.61%	0.25%
1954	0.12%	0.37%	0.96%	1.03%	0.12%	0.54%	33.51%	100.00%	100.00%	3.08%	2.63%	0.97%
1955	1.07%	0.44%	0.20%	0.19%	2.41%	5.14%	42.02%	2.53%	4.72%	1.00%	10.52%	2.97%
1956	3.03%	0.14%	1.36%	2.51%	0.49%	41.65%	100.00%	100.00%	100.00%	100.00%	22.98%	9.74%
1957	5.35%	1.03%	0.21%	0.04%	-0.85%	-0.79%	4.21%	8.58%	0.87%	0.28%	-0.91%	-0.22%
1958	-0.77%	1.00%	-0.66%	-0.95%	-0.90%	-0.56%	-0.28%	1.17%	0.17%	1.64%	0.20%	0.80%
1959	1.16%	-0.55%	-0.66%	-0.66%	0.49%	2.36%	0.75%	2.45%	2.80%	3.15%	1.41%	0.12%
1960	-0.87%	-0.60%	-0.57%	0.96%	1.23%	0.49%	0.34%	7.58%	0.73%	0.77%	0.76%	-0.91%
1961	-0.68%	-0.67%	-0.69%	-0.24%	1.06%	-0.44%	0.64%	2.53%	2.30%	3.67%	0.32%	-0.73%
1962	-0.67%	-0.37%	-0.32%	-0.30%	-0.11%	0.83%	1.59%	12.40%	1.38%	2.07%	0.55%	0.59%
1963	0.42%	0.65%	0.29%	0.39%	0.22%	2.76%	100.00%	100.00%	100.00%	11.79%	100.00%	4.76%
1964	2.52%	1.13%	0.37%	0.34%	0.63%	2.42%	100.00%	1.70%	1.56%	3.85%	3.40%	1.42%
1965	0.52%	0.08%	0.21%	0.57%	0.17%	0.35%	9.71%	9.05%	8.18%	100.00%	20.61%	100.00%
1966	2.30%	0.61%	0.88%	0.06%	-0.95%	0.94%	24.84%	17.05%	1.82%	2.09%	1.30%	0.81%
1967	0.55%	0.88%	0.60%	0.17%	0.13%	0.19%	2.94%	7.18%	4.84%	25.30%	1.18%	0.26%
1968	0.12%	0.21%	-0.82%	-0.52%	-0.86%	-0.57%	1.10%	2.61%	0.31%	2.04%	0.33%	0.35%
1969	0.22%	-0.89%	-0.85%	-0.70%	-0.85%	1.70%	6.36%	10.32%	10.10%	9.47%	1.92%	0.85%
1970	0.48%	0.22%	-0.89%	-0.77%	0.82%	1.14%	5.78%	6.47%	13.24%	2.57%	1.98%	2.39%
1971	1.57%	0.49%	0.67%	2.05%	2.76%	11.97%	0.79%	1.43%	15.15%	6.63%	0.85%	0.09%
1972	0.12%	0.39%	0.59%	1.60%	2.44%	0.69%	0.37%	9.41%	100.00%	1.58%	0.32%	0.19%
1973	0.14%	0.15%	-0.92%	-0.90%	0.59%	-0.65%	2.70%	4.33%	1.12%	0.24%	-0.87%	-0.76%
1974	-0.78%	-0.38%	0.88%	-0.88%	1.11%	-0.71%	4.65%	0.95%	-0.87%	-0.17%	-0.90%	-0.39%
1975	-0.29%	-0.33%	-0.33%	-0.32%	-0.33%	-0.26%	1.37%	1.90%	10.99%	6.26%	4.21%	2.55%
1976	2.44%	0.63%	0.13%	0.24%	-0.78%	1.42%	0.36%	4.50%	7.04%	100.00%	100.00%	1.32%
1977	1.44%	0.10%	-0.84%	-0.82%	1.32%	3.47%	100.00%	4.45%	100.00%	100.00%	1.39%	1.53%
1978	0.46%	0.43%	0.18%	2.20%	0.43%	100.00%	100.00%	100.00%	100.00%	100.00%	1.33%	1.98%
1979	0.10%	0.16%	-0.90%	-0.77%	-0.68%	0.25%	0.82%	-0.23%	-0.81%	4.06%	0.62%	-0.31%
1980	-0.80%	-0.68%	-0.35%	-0.78%	-0.73%	1.05%	100.00%	100.00%	1.49%	2.65%	2.19%	0.76%
1981	1.55%	0.50%	0.43%	2.61%	0.09%	-0.96%	0.47%	100.00%	100.00%	0.16%	0.42%	2.46%
1982	0.59%	0.28%	0.29%	0.23%	-0.80%	0.40%	1.02%	100.00%	100.00%	100.00%	0.46%	0.10%
1983	0.76%	-0.67%	-0.80%	-0.10%	0.55%	1.00%	100.00%	100.00%	100.00%	6.72%	100.00%	1.65%
1984	1.27%	0.35%	0.33%	0.86%	100.00%	100.00%	100.00%	100.00%	100.00%	0.12%	0.27%	0.15%
1985	0.49%	0.06%	0.36%	-0.63%	-0.80%	0.63%	100.00%	100.00%	100.00%	0.76%	0.48%	0.08%
1986	0.91%	-0.88%	0.83%	0.24%	-0.46%	-0.71%	100.00%	100.00%	8.81%	8.03%	1.44%	0.38%
1987	0.37%	-0.13%	-0.94%	0.85%	100.00%	0.81%	3.13%	100.00%	100.00%	100.00%	0.30%	-0.97%
1988	-0.75%	-0.73%	-0.68%	-0.33%	4.34%	100.00%	100.00%	100.00%	100.00%	52.76%	0.11%	0.26%
1989	0.21%	-0.73%	-0.79%	-0.56%	-0.48%	-0.33%	1.44%	100.00%	100.00%	100.00%	100.00%	5.66%
1990	0.19%	0.15%	-0.77%	-0.36%	-0.48%	0.65%	100.00%	1.29%	1.07%	2.85%	0.14%	-0.69%
1991	-0.54%	-0.34%	-0.32%	-0.29%	-0.34%	-0.37%	1.32%	100.00%	2.89%	0.63%	0.16%	-0.81%
1992	-0.57%	-0.33%	-0.34%	0.59%	0.70%	-0.43%	-0.36%	0.43%	0.60%	100.00%	0.32%	-0.50%
				-0.29%	-0.17%	-0.43%	21.04%	3.38%		0.11%	0.46%	-0.30%
1993	-0.32%	-0.29% -0.74%	-0.32% -0.70%	-0.29% 0.73%	-0.17% -0.29%	0.76%	-0.64%	100.00%	5.10% 100.00%	0.11%	-0.66%	-0.35%
1994	-0.20%			-0.31%	-0.29%	0.76%	1.45%	36.79%	11.23%	100.00%	100.00%	2.87%
1995	-0.34% 0.85%	0.72% 1.42%	-0.35% 1.28%	0.61%	1.68%	0.69%	3.51%	0.48%	0.59%	0.34%	0.14%	0.16%
1996							0.45%	-	100.00%			0.16%
1997	0.21%	-0.95%	-0.83%	-0.86%	-0.23%	-0.58%	COURSE OF THE PARTY OF THE PART	1.31%	0.34%	2.37%	0.81% 0.29%	0.21%
1998	-0.85%	-0.46%	-0.34%	0.48%	10.27%	100.00%	100.00%	100.00%	0.34%	0.27%	0.29%	U.2U%
												<b>阿尔</b>
						-100%	5		0%			100%

Figure 28 Regulated Flow Heat Map at Big Cypress Creek near Pittsburg for Baseline Scenario



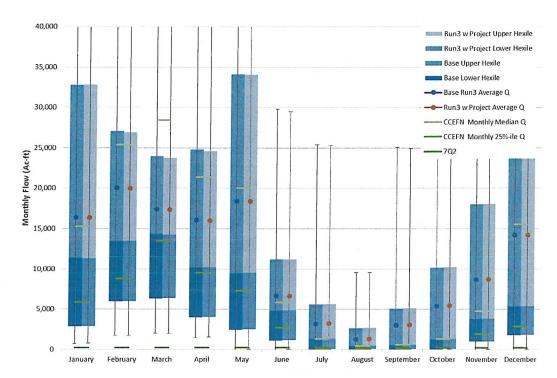


Figure 29 Monthly Statistics of Regulated Flow at Big Cypress Creek near Pittsburg for Baseline Scenario

## 3.5.4.4 Optimized Release Scenarios

The scenarios previously discussed simulate releases from Pit G-129 as a *constant* flow of 40 ac-ft/month (0.67 cfs) based on the calculated firm yield divided evenly across 12 months. However, pit releases could potentially provide greater environmental benefits during low flow conditions by discharging only when observed flows are less than a specified threshold. To evaluate these potential additional benefits, several additional scenarios were developed utilizing a flow switch in the WAM to provide releases from the pit only when regulated flows at the USGS gage on Big Cypress Creek near Pittsburg were below a specified monthly threshold.

For the example scenario presented herein, a threshold of 1,200 ac-ft/month (approximately 20 cfs) was established roughly based on observed median monthly flows in the months of July and October bounding the summer dry period. This threshold limits releases from the pit to only periods of very low flows, typically in the months of July through October. As shown in Figure 29, the threshold of 1,200 ac-ft/month is less than the lower hexile for the months of December through May. In this scenario, releases can only occur during the months of May through January and would occur primarily in July through October. With the low flow threshold in place, monthly releases from the pit can be increased from 40 ac-ft to 156 ac-ft (2.6 cfs), an increase of almost four times the flow rate.



The low flow threshold could potentially be optimized to achieve a particular monthly or seasonal flow condition in the creek. Such an analysis would require multiple iterations of modeling to determine the optimal streamflow threshold that produces the most flow without allowing monthly streamflows to reach 0 ac-ft/month, which is beyond the scope of work for the present effort. That said, only the results of the single threshold scenario are presented in this report, however, a second arbitrarily selected streamflow threshold was evaluated in which a 600 ac-ft/month streamflow threshold during the June – November period was added in addition to the 1,200 ac-ft/month streamflow threshold for the remaining months of the year. This refined streamflow threshold produced a modeled project discharge of 236 ac-ft/month, and a firm yield increase to LOTP of 800 ac-ft/yr, but resulted in some months outside of the June – November period to reach 0 ac-ft/month of streamflow. More model iterations would be necessary to determine the optimal operational streamflow threshold for the proposed project.

Flow duration curves for Tankersley Creek at the Pilgrim's Pride discharge location for the Full Authorization (Run 3 with no return flows) scenarios are shown in Figure 30. These curves illustrate the substantial increase in low flows that be achieved by utilizing storage in Pit G-129. With the 1,200 ac-ft/month threshold, flows lower than about the 70th-percentile can be sustained at about 156 ac-ft/month for an additional 23 percent of the months. At flows lower than the 91st-percentile, flows gradually diminish to a low flow of 78 ac-ft/month. This decline is an artifact of the 1,200 ac-ft/month threshold for months in which the flow at the USGS gage is slightly above 1,200 ac-ft, thus preventing releases from the pit, but upstream flows on Tankersley Creek are lower than the 156 ac-ft monthly release volume from the pit.

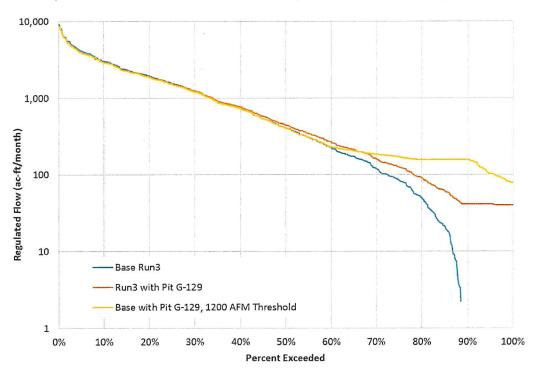


Figure 30 Regulated Flow Duration Curves at Pilgrim's Pride Discharge for Low Flow Threshold Scenario



From the heat map in Figure 31, flows are reduced by the project in less than half of the winter and spring months (December through May) by an average of 6 percent compared to average reduction of 4 percent without the threshold. Conversely, the project provides an average increase in monthly flow of 20 percent with increased flows occurring in 44 percent of the summer and fall months characterized by lower flows. During the summer months of July, August, and September, 100 percent of the regulated flow is provided by the project discharge in 31 percent of the months in the simulation period while more than half the regulated flow comes from the project in 59 percent of the months. Compared to the pit discharge scenario without the low flow threshold, flows are provided in fewer months but at greater volumes when they are provided.

The significant increase in flow provided by the project during the summer months is also apparent in the monthly statistic chart shown in Figure 32. The lower end of the bars are raised significantly by the pit discharge during the months of June through November, and median flows are also raised significantly for the months of July through October. This chart also shows the reduction in higher flows in the other months.



951	0% 0%	0%	3	4	5	6	7	8	9	10		1
949 950		0%			ALL PLANTS OF THE PARTY OF THE	AND ARROWS THE PARTY NAMED IN	PRINT			BOOK STATE OF THE PARTY OF THE	NAME OF TAXABLE PARTY.	THE RESERVE AND ADDRESS.
050	0%		-1%	-1%	0%	0%	0%	87%	82%	83%	0%	0
951		0%	-7%	-6%	-7%	0%	0%	75%	0%	0%	-7%	-7
		-3%	-1%	0%	0%	-3%	0%	0%	-1%	0%	0%	C
952	0%	-1%	0%	-2%	-4%	0%	0%	93%	69%	74%	0%	C
	0%	0%	0%	-6%	-6%	-7%	72%	95%	100%	98%	0%	C
953	0%	0%	0%	-7%	-6%	74%	0%	68%	0%	76%	0%	0
954	0%	0%	0%	0%	0%	0%	97%	100%	100%	0%	0%	0
.955	0%	0%	0%	0%	0%	78%	98%	0%	76%	0%	88%	0
956	0%	0%	0%	0%	0%	98%	100%	100%	100%	100%	95%	87
957	78%	0%	0%	0%	-7%	-7%	73%	86%	0%	0%	-6%	-6
958	-6%	-6%	-6%	-6%	-6%	-6%	-6%	0%	-5%	0%	0%	0
959	0%	-6%	-6%	-6%	-6%	42%	0%	0%	0%	0%	0%	0
.960	-6%	-6%	-6%	0%	0%	0%	0%	84%	0%	0%	0%	-7
.961	-6%	-6%	-6%	-7%	0%	-6%	-7%	0%	0%	70%	0%	-6
.962	-6%	-6%	-6%	-6%	-7%	0%	0%	90%	0%	0%	0%	0
963	0%	0%	0%	0%	0%	0%	100%	100%	100%	89%	100%	76
.964	0%	0%	0%	0%	0%	0%	100%	0%	0%	71%	69%	0
965	0%	0%	0%	0%	0%	0%	87%	86%	85%	100%	94%	100
966	0%	0%	0%	0%	-7%	0%	95%	93%	0%	0%	0%	0
.967	0%	0%	0%	0%	0%	0%	0%	83%	77%	96%	0%	0
968	0%	0%	-7%	-7%	-7%	-7%	0%	0%	0%	0%	0%	0
969	-7%	-7%	-6%	-6%	-6%	0%	81%	88%	88%	87%	0%	0
.970	0%	0%	-7%	-6%	-7%	0%	79%	81%	91%	0%	0%	0
971	0%	0%	0%	0%	0%	90%	0%	0%	92%	82%	0%	0
972	0%	0%	0%	0%	0%	0%	0%	87%	100%	0%	0%	0
.973	0%	0%	-7%	-6%	0%	-6%	0%	74%	0%	0%	-6%	-6
.974	-6%	-6%	-7%	-6%	0%	-6%	75%	0%	-6%	-6%	-6%	-6
.975	-6%	-6%	-6%	-6%	-6%	-6%	0%	0%	89%	81%	74%	0
976	0%	0%	0%	0%	-7%	-1%	0%	75%	83%	100%	100%	0
.977	0%	0%	-6%	-6%	0%	70%	100%	75%	100%	100%	0%	0
.978	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0
.979	0%	0%	-7%	-7%	-6%	0%	0%	-7%	-6%	72%	0%	-6
.980	-6%	-6%	-6%	-6%	-6%	0%	100%	100%	0%	0%	0%	0
981	0%	0%	0%	0%	0%	-7%	0%	100%	100%	0%	0%	0
.982	0%	0%	0%	0%	-7%	0%	0%	100%	100%	100%	0%	0
L983	-7%	-6%	-6%	-7%	-6%	0%	100%	100%	100%	82%	100%	0
.984	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0
L985	0%	0%	0%	-7%	-7%	0%	100%	100%	100%	0%	0%	0
.986	0%	-7%	0%	0%	-6%	-6%	100%	100%	86%	85%	0%	0
.987	0%	-3%	-6%	0%	100%	0%	0%	100%	100%	100%	0%	-6
.988	-6%	-6%	-6%	-7%	74%	100%	100%	100%	100%	99%	0%	0
.989	0%	-7%	-6%	-7%	-6%	-6%	0%	100%	100%	100%	100%	79
1990	0%	0%	-6%	-6%	-6%	0%	100%	0%	0%	0%	0%	-7
991	-6%	-6%	-6%	-6%	-6%	-6%	0%	100%	0%	0%	0%	-6
992	-6%	-6%	-6%	0%	0%	-6%	-6%	0%	0%	100%	0%	-6
.993	-6%	-6%	-6%	-6%	-6%	-6%	94%	69%	78%	0%	0%	-7
994	-7%	-6%	-6%	0%	-6%	0%	-7%	100%	100%	0%	-6%	-6
.995	-6%	0%	-6%	-6%	-6%	0%	0%	97%	89%	100%	100%	0
1996	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0
997	0%	-7%	-6%	-6%	-7%	-6%	0%	0%	100%	0%	0%	0
.998	-6%	-6%	-6%	0%	88%	100%	100%	100%	0%	0%	0%	0

Figure 31 Regulated Flow Heat Map at Pilgrim's Pride Discharge with 1,200 ac-ft/month Threshold



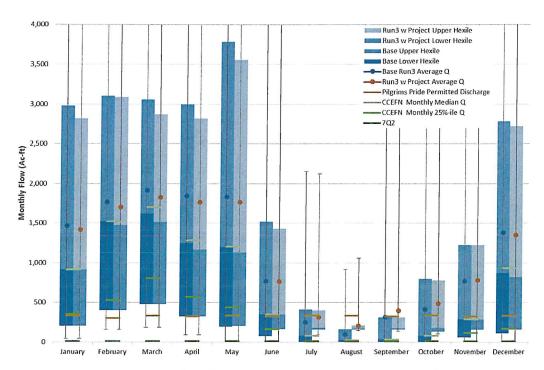


Figure 32 Monthly Statistics of Regulated Flow at Pilgrim's Pride Discharge with 1,200 ac-ft/month
Threshold

#### 3.5.4.5 Full Authorization with Discharges

Figure 33 shows a comparison of flow duration curves for Tankersley Creek at the confluence with Big Cypress Creek for Full Authorization scenarios with and without upstream discharges (return flows). Because wastewater discharges occur throughout the year, these return flows provide a continuous baseflow in Tankersley Creek even during extreme dry conditions when flow might otherwise be zero. However, the addition of releases from Pit G-129 increase flows by more than 30 percent during these periods of extreme low flow conditions.

#### 3.5.4.6 Current Conditions

Figure 34 provides a comparison of Full Authorization (Run 3) and Current Conditions (Run 8) scenarios with and without the pit impoundment. The Current Conditions scenarios demonstrate that the discharges from the pit have less of an impact on downstream flows because the significant low flow event that occur in the Full Authorization scenario are mitigated by lower water supply diversions and addition of return flows. However, as water resource demands increase, actual flow conditions will trend toward the situation represented by the Full Authorization scenarios.



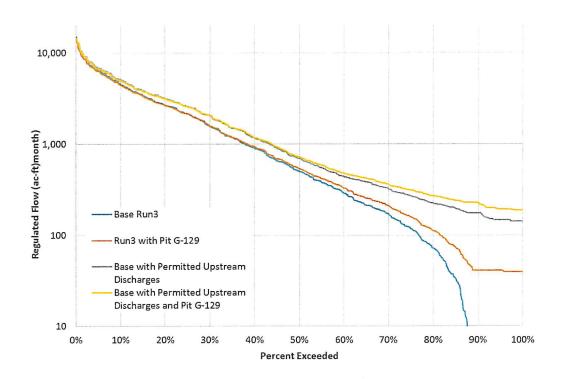


Figure 33 Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek

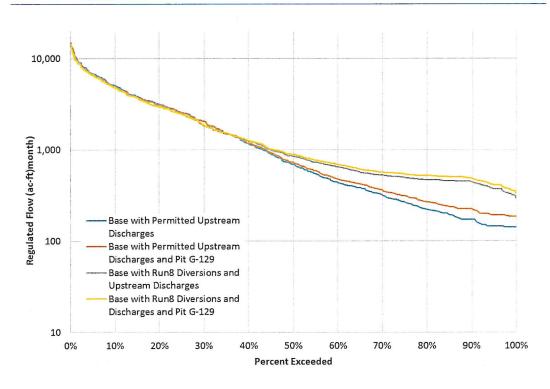


Figure 34 Regulated Flow Duration Curves for Tankersley Creek at Confluence with Big Cypress Creek



## 3.5.5 Potential Supply Benefits

In addition to the environmental benefits of sustained baseflow during extreme low flow and dry periods, the use of Pit G-129 can also provide benefits to the overall water supply in the Cypress Basin. Water supply benefits were quantified by evaluating the firm yield of Lake O' The Pines for various scenarios that include discharge from the pit. Results for the baseline scenario and two pit storage scenarios are presented in Table 7. For the scenarios evaluated, the results show that use of Pit G-129 for storage can provide a benefit of up to 900 acre-feet/year to the firm yield of Lake O' The Pines. All firm yields were determined using the Full Authorization (Run 3) model with no return flows.

Table 7 Lake O' The Pines Firm Yield for System Operations

Scenario	Modeled Firm Yield (acre-feet/year)	Benefit to Firm Yield (acre-feet/ year)
Baseline Full Authorization (Run 3)	178,800	
Base with Pit G-129 Constant Discharge	179,300	500
Base with Pit G-129 Low Flow Discharge	179,700	900

## Section 4

# WATER QUALITY CHARACTERIZATION

Based on the WAM analysis, the project has the potential to contribute up to 156-236 acre-ft/month of water into Tankersley Creek. During "dry" times, this discharge could represent 100 percent of flow in the Big Cypress Tributary of Lake O' the Pines. Accounting for other flow contributions to Lake O' the Pines, water from the project impoundment is estimated to contribute approximately 0.5 percent of the yield from Lake O' the Pines (firm yield of 178,800 to 179,700 acre-ft/year accounting for additional flow from the impoundment). Water quality criteria and characteristics were reviewed to understand potential water quality impacts from introducing flow from the impoundment to Tankersley Creek and on to Lake O' the Pines.

Big Cypress Creek below Lake Bob Sandlin (0404) is listed for the following impairments: bacteria (listed in 2002) and sulfate (listed in 2014). Big Cypress Creek below Lake O' the Pines is listed for depressed dissolved oxygen (2010), mercury in edible tissue (1998) and pH (2000). Introduction of water from the Luminant Mine Pit would need to avoid exacerbating these issues.

Table 8 lists the water quality criteria for Lake Bob Sandlin (Segment 0408), Big Cypress Creek below Lake Bob Sandlin (Segment 0404), and Lake O' the Pines (Segment 0403). Both lakes are designated with high aquatic life standards and are used as public drinking water supplies.



Table 8 Texas Surface Water Quality Standards (30 TAC §307)

Parameter	Lake Bob Sandlin	Big Cypress Creek below Lake Bob Sandlin	Lake O' the Pines
Segment No.	0408	0404	0403
pH, SU	6.5-9.0	6.0-8.5	6.0-8.5
E. Coli, MPN/100 mL	206	206	206
Dissolved Oxygen, mg/L	5.0	4.0	5.0
Chloride, mg/L	50	100	80
Sulfate, mg/L	65	100	50
TDS, mg/L	150	500	300

Table 9 summarizes results from sampling that Water Monitoring Solutions (WMS) collected in the Luminant Mine Pit near Mount Pleasant, Texas. Conductivity, dissolved oxygen, and pH concentrations represent the average concentrations from depth profiling conducted August 7 and October 30, 2018. Assuming that water from the pit would be drawn from above the thermocline, a slightly higher average dissolved oxygen would be expected. Details from the sampling and water quality analyses are provided in Appendix D. Mercury sampling was not conducted since it is typically not detectable in both water and sediment samples even in water bodies with fish consumption advisories. However, pH was evaluated with depth. Low pH is required for mercury to methylate to become biologically available.

Concentrations for pH, *e. coli*, dissolved oxygen, and chloride are all in compliance with the respective Texas Surface Water Quality Standards for Segment 0404 and 0403 even without factoring in substantial dilution with receiving water. *E. coli* and chloride concentrations are more than an order of magnitude below Segment 0404 and 0403 standards.

Table 9 Water Quality Sampling Results for the Luminant Mine Pit<sup>1</sup>

Parameter	Units	Average <sup>(2)</sup>	Range
Ammonia	mg/L as N	< 0.02	< 0.02
Alkalinity	mg/L as CaCO₃	55.6	54.2-58.1
Chloride	mg/L	5.4	5.1–5.6
Chlorophyll a	ug/L	2.0	0.8-3.7
Conductivity	μS/cm	277	213-319
Dissolved Oxygen	mg/L	6.4	0.9-8.9
E. coli	MPN/100 mL	15.0	4.1-25.9
Nitrate	mg/L as N	0.07	0.02-0.18
Nitrite	mg/L as N	< 0.01	< 0.01
рН ,	SU	7.8	7.47-8.45
Phosphorus	mg/L as P	0.01	< 0.02 -0.05
Sulfate	mg/L	63.7	62–67



Table 9 Water Quality Sampling Results for the Luminant Mine Pit<sup>(1)</sup> (continued)

Parameter	Units	Average <sup>(2)</sup>	Range
Total Organic Carbon	mg/L	2.9	2.5-3.4
Total Suspended Solids	mg/L	7	1–12

Notes:

Sulfate concentrations were below the stream standards (Segment 0404), but above the 50 mg/L criteria for Lake O' the Pines (Segment 0403). However, sulfate concentrations in the Luminant Mine Pit were comparable to sulfate concentrations measured in Tankersley Creek (Station 10261) in the last four years (Figure 35). Specifically, the average sulfate concentration in Tankersley Creek samples measured at Station 10261 since November 2011 (i.e., after a consistent and significant decreasing trend in sulfate concentrations in the watershed), was 68.9 mg/L, compared to average concentrations measured in the Luminant Mine Pit of 63.7 mg/L. Based on the available data, contribution of water from the Luminant Mine Pit is expected to either not change or slightly improve water quality in Segment 0404 relative to this 303d listed parameter.

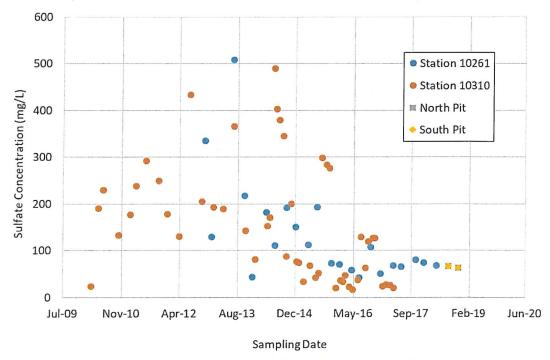


Figure 35 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Sulfate



Samples were collected at two locations of the pit (North and South stations) on two sampling events (August 7 and October 30, 2018).

<sup>(2)</sup> Average values were calculated by assigning non-detects a zero value.

Figures 36 to 38 show similar data for nitrate, phosphorus, and chlorophyll a concentrations in the Luminant Mine Pit samples compared to historical data in Tankersley Creek 10261 and immediately downstream of convergence of that creek with Big Cypress Creek (Station 10301). Based on available data, contribution of water from the Luminant Mine Pit is expected to either not change or improve water quality in Segment 0404 relative to these parameters (i.e., nitrate, phosphorus, and chlorophyll a).

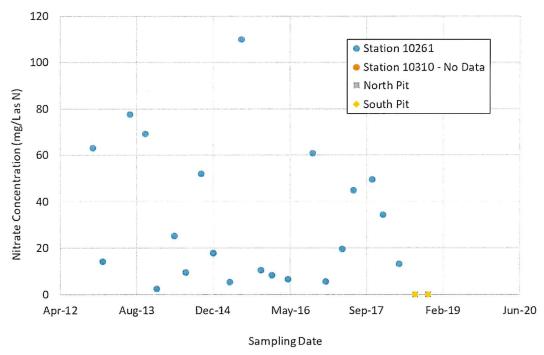


Figure 36 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Nitrate



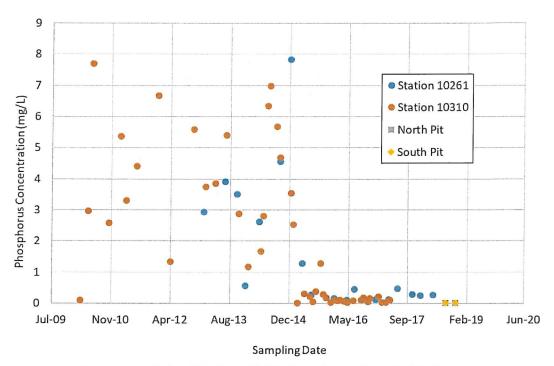


Figure 37 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Phosphorus

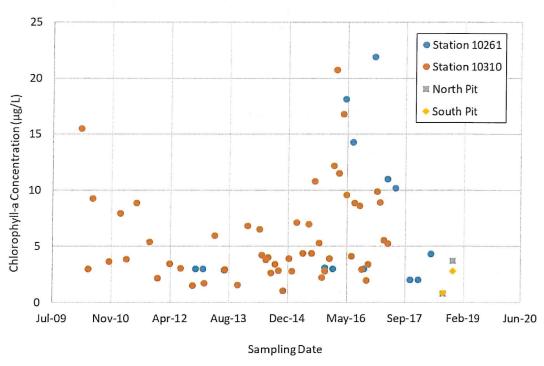


Figure 38 Comparison of Water Quality in Pit G-129 to Historical Data for Tankersley Creek and Big Cypress Creek – Chlorophyll  $\alpha$ 



TOC concentrations in the Luminant Mine Pit samples are also lower than the 8.7 mg/L average concentration in Tankersley Creek (Station 10261 SWQM data). Electrical conductivity, which can be correlated to TDS, was also lower in the Luminant Mine Pit samples (average of 277  $\mu$ S/cm) than in Tankersley Creek (average of 887  $\mu$ S/cm in 69 samples collected between 2009 and 2018).

#### Section 5

### **CONCLUSIONS AND RECOMMENDATIONS**

Streamflow in the Cypress Creek Basin varies drastically by season with periods of extreme low flow and dry conditions occurring during the summer months. An assessment of the potential use of an existing Luminant lignite mining pit as storage indicates the pit can provide an adequate quantity of water to meet potential downstream environmental and supplemental supply uses. After closure, Pit G-129 is planned to have a storage capacity of 5,355 ac-ft. The firm yield of the pit was calculated using the Cypress Basin WAM and determined to be up to 480 ac ft/yr. The pit has the capability to discharge up to 236 ac-ft per month (3.9 cfs) during low flow periods with potential to provide up to 900 ac-ft/yr of additional firm yield in Lake O' The Pines.

Additional study would be necessary to determine the ecological benefits from the discharge amounts derived herein. Specifically, hydraulic and habitat modeling would be necessary to determine the extent to which the additional flow would impact mesohabitat conditions for critical biology, and the geomorphology and connectivity of the downstream watershed. That said, the results of this study are encouraging in the sense that additional water could be made available during critical low-flow, drought conditions that could provide both water supply and environmental downstream benefits.

Based on this analysis of the historical water quality in the portion of the Cypress Creek Basin that would receive supplemental flow from the Luminant mine pit, i.e., Segments 0404 and 0403, the addition of flow from the pit is not expected to adversely impact water quality in the watershed.

#### Section 6

## REFERENCES

Helsel, D.R. and R. M. Hirsch, 2002. Statistical Methods in Water Resources Techniques of Water Resources Investigations, Book 4, chapter A3. U.S. Geological Survey. 522 pages.

Wurbs, R.A., 2018. Water Rights Analysis Package (WRAP) Modeling System Users Manual, Technical Report No. 256, Texas Water Resources Institute, 12th Edition.





Northeast Texas Municipal Water District

Technical Memorandum 1
TANKERSLEY CREEK RESERVOIR
STUDY - APPENDICES

FINAL | February 2019

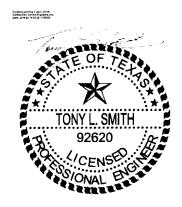




Northeast Texas Municipal Water District

# Technical Memorandum 1 TANKERSLEY CREEK RESERVOIR STUDY APPENDICES

FINAL | February 2019



P. 512-453-5383 •

F. 512-453-0101

# Appendix A RELEVANT PERMITS



#### CERTIFICATE OF ADJUDICATION

CERTIFICATE OF ADJUDICATION: 04-4590 OWNER: Northeast Texas Municipal

Water District P. O. Box 955

Hughes Springs, Texas

75656

COUNTY: Marion PRIORITY DATE: September 16, 1957

WATERCOURSE: Johnson Creek, tributary BASIN: Cypress Creek

of Cypress Creek and

Cypress Creek

(Lake O' the Pines)

WHEREAS, by-final decree of the 188th Judicial District Court of Gregg County, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 a right was recognized under Permit 1897ABC authorizing the Northeast Texas Municipal Water District to appropriate waters of the State of Texas as set forth below;

NOW, THEREFORE, this certificate of adjudication to appropriate waters of the State of Texas in the Cypress Creek Basin is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

#### 1. IMPOUNDMENT

Owner is authorized to store 251,000 acre feet of water in an existing dam and reservoir on Cypress Creek, known as Lake 0' the Pines, which is owned by the United States of America and operated by the U.S. Corps of Engineers, between elevation 201 feet and elevation 228.5 feet above mean sea level. The dam is located in the A. Abram Survey, Abstract 3; the Joseph French Survey, Abstract 131; the Mrs. E.T. Jones Survey, Abstract 232; the T.B. Morton Survey, Abstract 283 and the David Chote Survey, Abstract 80, Marion County, Texas.

#### 2. USE

- A. Owner is authorized to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for municipal and domestic purposes of which not more than 1930 acre-feet of water per annum may be diverted from Lake Bob Sandlin by the City of Pittsburg in accordance with the trilateral agreement between the Titus County Fresh Water Supply District No. 1; the City of Pittsburg and the owner of this certificate.
- B. Owner is authorized to divert and use not to exceed 161,800 acre-feet of water per annum from the aforesaid reservoir and

Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre feet of water per annum may be diverted from Lake Bob Sandlin.

- C. Owner is authorized to release sufficient amounts of industrial use water from Lake O' the Pines, to provide for the transwatershed diversion of 18,000 acre-feet of water per annum to the Sabine River Basin. Released water will be diverted from Cypress Creek and transported via pipeline for storage in Southwestern Electric Power Company's cooling Pond on Brady Branch, tributary of the Sabine River, Sabine River Basin.
- D. Owner is also authorized to use the impounded water of the aforesaid reservoir for recreation purposes.

#### 3. DIVERSION

- A. Location:

  At the perimeter of the aforesaid reservoir and from the perimeter of Lake Bob Sandlin under the Reservoir Operation Agreement.
- B. Maximum rates are as shown:
  - (1) 1300.00 cfs (585,000 gpm) from Lake O' the Pines.
  - (2) 85.00 cfs (38,250 gpm) from Lake Bob Sandlin.

#### 4. PRIORITY

The time priority of owner's right is September 16, 1957.

#### 5. SPECIAL CONDITIONS

- A. Owner shall maintain a suitable outlet in the aforesaid dam authorized herein to allow the free passage of water that owner is not entitled to divert or impound.
- B. Owner is authorized to use the bed and banks of Cypress Creek, below the aforesaid dam, to convey and deliver water to be appropriated hereunder to downstream diversion points.
- C. Owner's rights hereunder are subject to an agreement for reservoir operations on Cypress Creek between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin County Water District, the Northeast Texas Municipal Water District and the Lone Star Steel Company, dated January 1, 1973 and to subsequent amendments to that agreement or basin operation orders issued by the Commission.

#### Certificate of Adjudication 04-4590

The locations of pertinent features related to this certificate are shown on Page 6 of the Cypress Creek Basin Certificates of Adjudication Maps, copies of which are located in the offices of the Texas Water Commission, Austin, Texas and the office of the County Clerk of Morris and Marion Counties.

This certificate of adjudication is issued subject to all terms, conditions and provisions in the final decree of the 188th Judicial District Court of Gregg County, Texas, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 and supersedes all rights of the owner asserted in that cause.

This certificate of adjudication is issued subject to senior and superior water rights in the Cypress Creek Basin.

This certificate of adjudication is issued subject to the obligations of the State of Texas pursuant to the terms of the Red River Compact.

This certificate of adjudication is issued subject to the Rules of the Texas Water Commission and its continuing right of supervision of State water resources consistent with the public policy of the State as set forth in the Texas Water Code.

TEXAS WATER COMMISSION

Paul Hopkins, Chairman

DATE ISSUED:

OCT 13 1986

ATTEST:

Mary Ann/Refner, Chief Clerk

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



Labe prus

#### AMENDMENT TO CERTIFICATE OF ADJUDICATION

#### CERTIFICATE NO. 04-4590A

Permittee

: Northeast Texas Municipal

Address

P.O. Box 955

Water District

Hughes Springs, Texas 75656

Filed

: August 22, 1995

Granted

DEC 1 5 1995

Purpose

: Municipal, Domestic, Industrial

And Recreation

County

Marion

Watercourse

: Johnson Creek, tributary

of Cypress Creek and Cypress

Creek

Watershed Cypress Basin

WHEREAS, Certificate of Adjudication No. 04-4590 was issued to the Northeast Texas Municipal Water istrict on October 13, 1986 and authorized certificate owner to store 251,000 acre-feet of water in an existing dam and reservoir on Cypress Creek known as Lake O' the Pines; and

WHEREAS, owner is authorized: to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin (immediately upstream of Lake O' the Pines) for municipal and domestic purposes; to divert and use not to exceed 161,800 care-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre-feet of water per annum may be diverted from Lake Bob Sandlin and to use the impounded water of Lake O' the Pines for recreational purposes; and

WHEREAS, an application was received from Northeast Texas Municipal Water District wherein applicant seeks to amend the certificate by authorizing transwatershed diversion of an additional 20,000 acre-feet of water per annum from Lake O' the Pines into the Sabine River Basin for municipal and industrial use by the City of Longview; and

WHEREAS, the water will be diverted from the perimeter of the reservoir on the south shore of Lake O' the Pines at a rate of diversion not to exceed 100 cfs (44,883 gpm); and

WHEREAS, the Texas Natural Resource Conservation Commission finds that jurisdiction over the application is established; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Natural Resource Conservation Commission in issuing this amendment; and

NOW, THEREFORE, this amendment to Certificate No. 04-4590 is issued to Northeast Texas Municipal Water District, subject to the following terms and conditions:

#### use USE

In addition to the uses contained in Certificate No. 04-4590, owner is authorized to provide for the transwatershed diversion of 20,000 acre-feet of water per annum for municipal and industrial uses from Lake O' the Pines to the Sabine River Basin for use by the City of Longview, Texas.

#### 2. DIVERSION RATE

Water diverted from the perimeter of the reservoir at a maximum rate of 100 cfs (44,883 gpm)

#### 3. WATER CONSERVATION

Owner shall maintain a water conservation plan that provides for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future use or alternative uses. Such plan shall include a requirement in every wholesale water supply contract entered into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement water conservation measures. If the customer intends to resell the water, then the contract for the resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water will be required to implement water conservation measures.

#### 3. TIME PRIORITY

The time priority of this amendment is September 6, 1957.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate No. 04-4590, except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Basin.

Certificate owner agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Natural Resource Conservation Commission and to the right of continuing supervision of State water resources exercised by the Commission.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

For the Commission

Date Issued: DEC 15 1865

**\TTEST**:

Gloria A. Vasque, Chief Clerk

Bryan W. Shaw, Ph.D., Chairman Buddy Garcia, Commissioner Carlos Rubinstein, Commissioner Mark R. Vickery, P.G., Executive Director



## TEXAS COMMISSION ON ENVIRONMENTAL QUAIN

Protecting Texas by Reducing and Preventing Pollution

February 23, 2011

Joel Palin Luminant Mining Company LLC 500 North Akard Street, LP12-080B Dallas, Texas 75201

RE: Luminant Mining Company LLC Permit No. WQ0002697000

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has issued final approval of the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the approval became effective on the date the ED signed the permit or other approval. A copy of the final approval is enclosed and cites the effective date.

You may file a **motion to overturn** with the chief clerk. A motion to overturn is a request for the commission to review the TCEQ executive director's approval of the application. Any motion must explain why the commission should review the TCEQ executive director's action. According to 30 TAC Section 50.139 an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person or by mail. The Chief Clerk's mailing address is Office of the Chief Clerk (MC 105), TCEQ, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the chief clerk, please provide copies to Robert Martinez, Environmental Law Division Director (MC 173), and Blas Coy, Public Interest Counsel (MC 103), both at the same TCEQ address listed above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's approval. According to Texas Water Code Section 5.351 a person affected by the ED's approval must file a petition appealing the ED's approval in Travis County district court within 30 days after the <u>effective date of the approval</u>. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Individual members of the public may seek further information by calling the TCEQ Office of Public Assistance, toll free, at 1-800-687-4040.

Sincerely,

LaDonna Castañuela

Chief Clerk

LDC/ka

cc: Blas Coy, TCEQ Public Interest Counsel (MC 103)

Bryan W. Shaw, Ph.D., Chairman
Buddy Garcia, Commissioner
Carlos Rubinstein, Commissioner
Mark R. Vickery, P.G., Executive Director



### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 23, 2011

Mr. Joel Palin Luminant Mining Company LLC 500 North Akard Street, LP12-080B Dallas, Texas 75201

Re: Luminant Mining Company LLC, TPDES Permit No. WQ0002697000

(RN102805900; CN603263773)

Dear Mr. Palin:

Enclosed is a copy of the above referenced permit for a wastewater treatment facility issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

If you are receiving a Texas Pollutant Discharge Elimination System (TPDES) discharge permit and your system is a new facility or an existing facility that has been reporting to the Texas Commission on Environmental Quality (TCEQ), you may comply with self-reporting requirements by submitting discharge monitoring reports (DMR) electronically over the Web through STEERS (see enclosed flyer). Information about the electronic DMR (NetDMR) system is available at <a href="https://www.tceq.state.tx.us/goto/NetDMR">www.tceq.state.tx.us/goto/NetDMR</a>. We encourage electronic reporting. Discharge facilities that do not use the NetDMR system will receive paper DMR forms and instructions from the TCEQ Enforcement Division or from the U.S. Environmental Protection Agency (EPA) if the facility has been submitting DMRs to EPA.

If you are receiving a land application (no discharge) permit and are required to report monitoring results, self-reporting forms and instructions will be forwarded to you by the TCEQ Enforcement Division.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit. When the agency receives this form, the appropriate permit requirements will be activated in the compliance system database so that accurate monitoring and reporting can occur.

Mr. Joel Palin Page 2

Should you have any questions, please contact Ms. Melinda Luxemburg, P.E. of the TCEQ's Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address at the bottom of the previous page.

Sincerely,

Charles W. Maguire, Director Water Quality Division

Texas Commission on Environmental Quality

CWM/ML/evm

Enclosures

cc: TCEQ, Region 5

# **NetDMR:** Online Reporting of Discharge Monitoring Data

## What is NetDMR?

etDMR is a Web-based tool that allows you as a Texas Pollutant Discharge Elimination System (TPDES) permittee to electronically sign and submit your discharge monitoring reports (DMRs) to the Texas Commission on Environmental Quality. The data is then automatically submitted to the EPA's Integrated Compliance Information System (ICIS)-NPDES database.

NetDMR benefits for permittees:

- Offers an alternative to paper submissions, reducing your paperwork burden.
- Improves your data quality by automatically error checking and validating data prior to your submission to the TCEO.
- Aids in the timeliness of your DMR data submissions.
- You can import DMR data for multiple outfalls at the same time.
- You can sign your DMRs electronically.
- You receive confirmation of your submission.
- You can access up to five years of electronic copies.
- You can submit attachments such as lab data, photographs, or other documentation relevant to the DMR.

# There are several types of NetDMR users, and each user can be assigned one or more roles.

#### **NetDMR** Users

- Permittee User—you work for an organization that is required to submit DMRs under a TPDES permit.
- Data Provider (e.g., analytical laboratory, consultant)—you support an organization that is required to submit DMRs as part of a TPDES permit.

#### **NetDMR** Roles

- Permittee Read-only: able to view DMRs associated with the permit, but not allowed to update or modify DMR data.
- Edit Access: able to view and modify DMRs and DMR data
- **Signatory**: has authority to sign and submit DMRs on behalf of your organization. A request for the signatory role requires submission of a subscriber

agreement to the TCEQ.

• Permit Administrator: able to approve all DMR readonly and edit requests for a permit.

If you as a permittee so choose, one person can fulfill all the necessary roles in NetDMR—meaning, one person can both enter the data and have signatory authority to submit the data. In that case, that person would need to have the role of signatory.

## Who can report?

TPDES permittees required to submit DMRs may use NetDMR after requesting and receiving permission from the TCEQ. After the TCEQ has approved your request, the NetDMR tool enables you to complete your DMRs via a secure Internet connection.

# DMR data can be submitted electronically through NetDMR for the following TPDES permits:

- Industrial wastewater discharge individual permit
- Domestic wastewater discharge individual permit
- Authorizations under the TPDES Wastewater General Permit for discharges from concrete production facilities (TXG110000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater from concentrated aquatic-animal production facilities and certain related activities (TXG130000)
- Authorizations under the TPDES Wastewater General Permit for discharges contaminated with petroleum fuel or petroleum substances (TXG830000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater and contact storm water from petroleum bulk stations and terminals (TXG340000)

# What reports cannot be submitted through NetDMR?

- Monthly Effluent Reports—If you are required to submit MERs, you must continue submitting paper forms to the TCEQ. MER data cannot be submitted through the NetDMR system.
- Concentrated Animal Feeding Operation General Permit Reports—Annual reports required by authorizations under the TPDES CAFO General Permit must continue to be submitted by paper.

- Other required reports—Individual and general permits with reporting requirements that you must continue to submit in paper form by mail include:
  - pretreatment semiannual and annual reports required in a permit or pretreatment program
  - biomonitoring quarterly, semiannual, and annual reports required in a permit
  - sludge beneficial-land-use quarterly and annual reports (domestic permits and sludge disposal)
  - multi-sector general permit benchmark testing
  - ☐ groundwater reports required in a permit

- other reports that relate to compliance activities specified in your permit (for example, a construction schedule)
- notices of noncompliance

## Is NetDMR secure?

Yes. Communications with NetDMR are secured by your password, responses to security questions, and use of the Secure Sockets Layer protocol commonly used by online banking sites.

#### For more information:

Visit the NetDMR Web page at <www.tceq.state.tx.us/goto/NetDMR>.

Submit e-mails to <NetDMR@tceq.state.tx.us>.

Call 512-239-eDMR.

The TCEQ is an equal opportunity employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation, or veteran status. In compliance with the Americans with Disabilities Act, this document may be requested in alternate formats by contacting the TCEQ at 512-239-0028, Fax 512-239-4488, or 1-800-RELAY-TX (TDD), or by writing P.O. Box 13087, Austin, TX 78711-3087.



# Notification of Completion of Wastewater Treatment Facility

If you have questions about completing this form or about the Water Quality Permit program, please contact the Applications Review and Processing Team at 512/239-4671.

# PERMIT INFORMATION TCEQ Water Quality Permit No.: \_\_\_\_\_ EPA I.D. No.: TX\_\_\_\_\_ FACILITY INFORMATION Permitted Flow (MGD): \_\_\_\_\_ Phase of Operation (check one): Interim ☐ Final Estimated or Actual Date of Operation (Month/Day/Year): OPERATOR INFORMATION Name: \_\_\_\_\_ Class of Operator Certification: \_\_\_\_\_ Operator Certification Number: \_\_\_\_\_ Employed By: \_\_\_\_\_ RESPONSIBLE OFFICIAL Name: \_\_\_\_\_\_ Title: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_ Email: \_\_\_\_ Street No.\_\_\_\_\_Street name:\_\_\_\_\_ or P.O. Box \_\_\_\_\_ City: \_\_\_\_ State: \_\_\_\_ Zip code: \_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_ This form should be completed when a facility is placed operational or goes into a new phase of operation. The completed form should be returned at least 45 days before you plan to bring the facility on line. Mail completed form to: Texas Commission on Environmental Quality Customer Information and Applications Processing Section Applications Review and Processing Team (MC-148) PO Box 13087 Austin TX 78711-3087 OR Fax completed form to: 512/239-0884 "ATTENTION: APPLICATIONS REVIEW AND PROCESSING TEAM"



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O Box 13087 Austin, Texas 78711-3087

TPDES PERMIT NO. WQ0002697000 [For TCEQ office use only - EPA I.D. No. TX0068357]

This is a renewal of TPDES Permit No. WQ0002697000, issued on, October 31, 2008.

#### PERMIT TO DISCHARGE WASTES

under provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code

**Luminant Mining Company LLC** 

whose mailing address is

500 North Akard Street, LP12-080B Dallas, Texas 75201

is authorized to treat and discharge wastes from the Monticello Lignite Mining Areas, a lignite surface mining facility (SIC 1221)

located north and south of Interstate Highway 30, between the City of Winfield and the City of Mount Pleasant, Titus and Franklin Counties, Texas

via Outfalls 001 and 101 to East Piney Creek, Piney Creek, Ripley Creek, Dorsey Creek, and their tributaries; thence to White Oak Creek; thence to the Sulphur/South Sulphur River in Segment No. 0303 of the Sulphur River Basin; via Outfalls 002 and 102 to Tankersley Creek (above Tankersley Lake); thence to Tankersley Lake; thence to Tankersley Creek (below Tankersley Lake); and via another Outfall 002 and 102 to Dragoo Creek, thence to Tankersley Creek (below Tankersley Lake); and via another Outfall 002 and 102 to Hayes Creek (above New City Lake); thence to New City Lake; thence to Hayes Creek (below New City Lake); thence to Hart Creek; thence from these Outfalls 002 and 102 discharge routes to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin; via Outfalls 003 and 103 to Smith Creek; thence to Blundell Creek; and via another Outfall 003 and 103 to Blundell Creek; thence from these Outfalls 003 and 103 discharge routes to Lake Bob Sandlin in Segment No. 0408 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on January 1, 2016.

ISSUED DATE: February 16, 2011

Mad Vicke For the Commission

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During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water, surface water runoff, and treated domestic wastewater from "active mining area" (\*1) sedimentation ponds in the Sulphur/South Sulphur River (Segment No. 0303) watershed, subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Dis	Discharge Limitations	S	Minimum Self-Monitoring Requirements	Requirements
	Daily Average	Daily Maximum	Single Grab	Daily Average Daily Maximum Single Grab Report Daily Average and Daily Maximum	Jaily Maximum
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
		-			
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD) (Report, MGD)	N/A	1/week (*2)	Estimate
Total Suspended Solids	35	70	70 (*3)	1/week (*2)	Grab (*4)
Iron, Total	3.0	6.0	6.0 (*3)	1/week (*2)	Grab (*4)
Selenium, Total	N/A	0.036	0.036 (*3)	1/6 months (*2)	Grab (*4)

See Other Requirement Nos. 2, 3 and 4.

When discharging. See Other Requirements No. 7.

Applies to the discharge from each individual retention pond.

Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent imitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported. 

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*2), by grab sample (\*4). જં

There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. က်

Effluent monitoring samples shall be taken at the following location(s): At Outfall 001, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

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During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water and surface runoff from "active mining area" (\*1) sedimentation ponds in the Big Cypress Creek Below Lake Bob Sandlin (Segment No. 0404) watershed, subject to the following effluent limitations:

Volume: Intermittent and flow variable.

	Requirements	Jaily Maximim	Sample Type	adit adima		Fetimoto	rominare	Grab (*A)	(+) Cmr 2	Grab (*4)	(**) 40m	G140 (4)
	Minimum Self-Monitoring Requirements	Daily Average Daily Maximum Single Grab Report Daily Average and Daily Maximum	Measurement Frequency			1/week (*2)	(2) waan /2	1/week (*2)		1/week (*2)	1/month (*a)	(2) month (2)
	S	Single Grab	mg/l			N/A		70 (*3)	(0*) 0 9	0.0(3)	0.036 (*3)	10 1 20
	Discharge Limitations	Daily Maximum	l/gm			(Report, MGD) (Report, MGD)		70	0.9	0.0	0.036	
	DIS	Daily Average	mg/l		(80.5)	(Keport, MGD)	ı	35	0 %	5:0	A/A	
Effluent Characteristics	The state of the s				Flow (million gallone nor der. MOD)	TION (MILLION BAHOMS PET UAY, INGL)	Total Suspended Solids	T W I	Iron, Iotal	Colonium Total	ociciiluiii, 10tai	

See Other Requirement Nos. 2, 3 and 4.

When discharging. See Other Requirements No. 7.

Applies to the discharge from each individual retention pond. £ 8 8 8 4

Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*2), by grab sample (\*4). તં

There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. က်

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Effluent monitoring samples shall be taken at the following location(s): At Outfall 002, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

mine water and surface water runoff, and treated domestic wastewater from "active mining area" (\*1) sedimentation ponds in the Lake Bob During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge Sandlin (Segment No. 0408) watershed, subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Disc	Discharge Limitations		Minimum Self-Monitoring Requirements	g Requirements
	Daily Average	Daily Maximum	Single Grab	Daily Average   Daily Maximum   Single Grab   Report Daily Average and Daily Maximum	Daily Maximum
	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow (million gallons per day, MGD)	(Report, MGD)	(Report, MGD) (Report, MGD)	N/A	1/week (*2)	Estimate
Total Suspended Solids	35	70	70 (*3)	1/week (*2)	Grab (*4)
Iron, Total	3.5	7.0	7.0 (*3)	1/week (*2)	Grab (*4)
Selenium, Total	N/A	Report	N/A	1/6 months (*2)	Grab (*4)
Aluminum, Total (Interim *5)	N/A	Report	N/A	1/month (*2)	Grab (*4)
Aluminum, Total (Final *6)	N/A	1.76	1.76	1/month (*9)	Grah (*1)

- See Other Requirement Nos. 2, 3 and 4.
- When discharging. See Other Requirements No. 7.
- Applies to the discharge from each individual retention pond.
- Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent imitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported. £8.65 4
  - Beginning upon the permit issuance date and lasting three years from the permit issuance date (see Other Requirement No. 15). (\*2) (\*4)
    - Beginning three years from the permit issuance date and lasting through the date of permit expiration.
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*2), by grab sample (\*4). તાં
- There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. က်
- Effluent monitoring samples shall be taken at the following location(s): At Outfall 003, where wastewater discharges from the active mining sedimentation ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408) 4

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During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge "post mining area" (\*1) runoff, wastewater from sedimentation (retention) ponds in the "post mining area" (\*1) and previously monitored effluents (\*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

	_	7		_		T		_				
	Podniromonto	il. W.	ally Maximum	Comple Time	campie Type				Estimate		Grap (*5)	<b>S</b>
	Miniming Self-Monitoring	Daily Average Daily Maximum Single Grab Report Posity Assertion	Actual Daily Avelage allu Da	Measurement Fragilianon Comple Time	TACABATCHICITE I ICHACIIC			* /	1/ week ( 3)	(*) -[/-	T/week ( 3)	
		Single Grah	Ciribio Oran					V/N		(n = m]/])	(1/1111 6.0)	$(9_*)(P_*)$
	Discharge Limitations	Daily Maximim						(Report, MGD) (Report MGD)	Control Management	(n s m]/])	(1/1111 (1.0)	(*4)(*6)
	Dis	Daily Average						(Report, MGD)		<b>∀</b> /Z		
Effluent Characterist	Elinem Characteristics						[Down (m.:11: 11	Flow (IIIIIII) gallons per day, MGD)	Cottlook12 021: 1-	octricable Solids	(millilitana //:42 - 1/1)	(minifers/lifer, ml/1)

- See Other Requirement Nos. 2, 3 and 4.
  - See Other Requirement No. 8.
    - When discharging.
- This limit does not apply when the discharge is caused by a precipitation event (or series of storms or snowmelt equivalent volume) greater than the 10-year/24-hour precipitation event. \* \* \* \* \* \* \* \* \* \* \* \* \*
- Since more than one source is associated with this particular waste category, individual samples from each source (See Other Requirement No. 14) shall be analyzed and then arithmetically flow-weighted for reporting compliance with the above effluent limitations. For pH, individual samples shall be analyzed separately and the highest and lowest pH shall be reported. (\*2)
  - Applies to the discharge from each individual retention pond. (9\*)
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*3), by grab sample (\*5). There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil બ છ 4
  - Effluent monitoring samples shall be taken at the following location(s):

At Outfall 101, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No, 3) and prior to discharge to the Sulphur/South Sulphur River watershed (Segment No. 0303) At Outfall 102, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No. 3) and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

At Outfall 103, where wastewater discharges from the post mining sedimentation (retention) ponds associated with this outfall (See Other Requirement No. 3) and prior to discharge to the Lake Bob Sandlin watershed (Segment No. 0408).

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During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics	Ω	Discharge Limitations		Minimum Self-Monitoring Requirements	7 Requirements
	Daily Average	Daily Maximum	Single Grab	Daily Average   Daily Maximum   Single Grab   Report Daily Average and Daily Maximum	Jaily Maximum
	mg/l	mg/l	mg/]	Measurement Frequency	Sample Tyme
		7	70	farman a manual manage	Sample 1) be
TI (1994)					
Flow (MGD)	(Report)	(Report)	N/A	1/week (*1)	Fetimata
Biochemical Oxygen Demand (5-day)	20	45	45	1/wppk (*1)	Crah
Total Suspended Solids	20	45	45	1/WPPk (*1)	Grab
E. Coli (CFU or MPN/100 ml) (*2)	N/A	(Report)	N/A	1/month (*1)	Grab

- (\*1) When discharge occurs.
- Colony forming units or most probable number per 100 ml (see Other Requirement No. 11). (\*2)
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*1), by grab sample. ö
- The effluent shall contain chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (\*1), by grab sample. က်
- There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. 4
- Effluent monitoring samples shall be taken at the following location: At Outfall 201, at the outlet of the North Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 001. ń

During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations: H

		duirements.	y Maximum	Sample Type		Estimate	1-0	Grao	1,50
	Minimum Solf-Monitoning D.	Daily Average Daily Maximum   Single Grah   Report Daily Average and Dail: Maximum	Mosuroment Freeze	incasurement rieduency S	/ / · · · · ] - ( * · · )	1/week (*1)	1/14/201/(*1)	1/ WCCN ( 1)	1/Wook (*1)
	S	Single Grah	mø/l	1,79,1	N/A	IN/A	45	2	45
	Discharge Limitations	Daily Maximum	mg/]	- 70	(Renort)	(hand and)	45	,	45
	Dis	Daily Average	mg/l		(Report)	(3.2.3.	20	0.00	20
Fffment Characteristics	Emacut Cularacter ISHES				Flow (MGD)	Rinchamical Owner Deman	Electrical Oxygen Demand (5-day)	Total Suspended Solide	childe political

- (\*1) When discharge occurs.
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*1), by grab sample. ö
  - The effluent shall contain chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (\*1), by grab sample. က်
- There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. 4
- Effluent monitoring samples shall be taken at the following location: At Outfall 203, at the outlet of the South Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 003.

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#### **DEFINITIONS AND STANDARD PERMIT CONDITIONS**

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

#### 1. Flow Measurements

- a. Annual average flow the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.
- b. Daily average flow the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) the highest 2-hour peak flow for any 24-hour period in a calendar month.

#### 2. Concentration Measurements

- a. Daily average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
  - i. For domestic wastewater treatment plants When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.
  - ii. For all other wastewater treatment plants When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.
- d. Daily discharge the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.
  - The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month.
  - The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
- f. Daily average loading (lbs/day) the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as ( Flow, MGD x Concentration, mg/l x 8.34).
- g. Daily maximum loading (lbs/day) the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

#### Sample Type

- a. Composite sample For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).
- b. Grab sample an individual sample collected in less than 15 minutes.
- 4. Treatment Facility (facility) wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
- 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.
- 6. Bypass the intentional diversion of a waste stream from any portion of a treatment facility.

#### MONITORING AND REPORTING REQUIREMENTS

#### 1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TCW Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

#### 2. Test Procedures

- a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.
- b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

#### Records of Results

- Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- Records of monitoring activities shall include the following:

date, time, and place of sample or measurement;

identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittée.

#### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

#### Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

#### 6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

#### Noncompliance Notification

- In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to contain and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

Unauthorized discharges as defined in Permit Condition 2(g).

Any unanticipated bypass that exceeds any effluent limitation in the permit. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

- In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
- d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.
- 8. In accordance with the procedures described in 30 TAC §§35.301 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.
- Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

One hundred micrograms per liter (100 µg/L);

- Two hundred micrograms per liter (200  $\mu$ g/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500  $\mu$ g/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
- iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

iv. The level established by the TCEQ.

- That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - Five hundred micrograms per liter (500 µg/L);

One milligram per liter (1 mg/L) for antimony;

- iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application:
- iv. The level established by the TCEO.

#### 10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

- 11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:
  - Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
  - For the purpose of this paragraph, adequate notice shall include information on:

The quality and quantity of effluent introduced into the POTW; and

Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

#### PERMIT CONDITIONS

#### General

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. Violation of any terms or conditions of this permit;

- Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
   A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

#### 2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §\$305.62 and 305.66 and TWC \$7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 7.075 (relating to Administrative Penalties), 7.101 7.111 (relating to Civil Penalties), and 7.141 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

#### 3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.
- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission.

Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

#### 4. Permit Amendment and/or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
  - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or
  - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;
  - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA \$307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA \$307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

#### 5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit.

Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

#### 6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

#### 7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

- 8. Property Rights A permit does not convey any property rights of any sort, or any exclusive privilege.
- 9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

#### 10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

#### 11. Notice of Bankruptcy.

- a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
  - i. the permittee;
  - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
  - iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

#### b. This notification must indicate:

- i. the name of the permittee;
- ii. the permit number(s);
- iii. the bankruptcy court in which the petition for bankruptcy was filed; and
- iv. the date of filing of the petition.

#### **OPERATIONAL REQUIREMENTS**

- 1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.
- 2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21-319.29 concerning the discharge of certain hazardous metals.
- 3. Domestic wastewater treatment facilities shall comply with the following provisions:
  - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

- b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.
- 4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.
- 5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
- 6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

#### 7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information.

If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

- 8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
  - a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
- c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

- Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.
- 10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.
- 11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:
  - Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
  - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
  - The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an
  - Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.
  - e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
  - The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
    - Volume of waste and date(s) generated from treatment process;
    - Volume of waste disposed of on-site or shipped off-site; ii.
    - iii. Date(s) of disposal;
    - iv. Identity of hauler or transporter;
      v. Location of disposal site; and
      vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEO Revision 08/2008

#### OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

POLLUTANT MAL (mg/l)
Total Aluminum 0.030
Total Iron 1.0
Total Selenium 0.010
Settleable Solids 0.4 ml/l

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified above.

When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (o) shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

"The reported value(s) of zero (0) for <u>[list parameter(s)]</u> on the self-reporting form for <u>[monitoring period date range]</u> is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a parameter indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

#### 2. DEFINITIONS:

- A. The term "active mining area" is defined as the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post-mining areas.
- B. The term "post-mining area" is defined as a reclamation area or the underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.
- C. The term "reclamation area" is defined as the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.

- D. The term "bond release" is defined as the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of an underground mine, mine sealing and abandonment procedures) has been satisfactorily completed in accordance with Phase II as defined by 16 Texas Administrative Code (TAC) §12.313(a)(2).
- E. The term "10-year, 24-hour precipitation events" is defined as the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
- F. The term "settleable solids" is that matter measured by the volumetric method specified in 40 CFR §434.64 and as follows: Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. Notwithstanding any provision of 40 CFR Part 136, the method detection limit for measuring settleable solids under this part shall be 0.4 ml/l.
- G. The term "mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post-mining area.
- H. The term "alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10 mg/l.
- 3. Location Information: The following table shows the mine area, operational phase, related outfalls, receiving waters and tributaries:

Outfall No.	Mine Phase	Pond Identification No.	Receiving Water	Segment No.
001	Active	J-2, L-1, L-2, L-4 M-1 A-15 A-2, A-19, B-2	Piney Creek and/or tributaries East Piney Creek and/or tributaries Ripley Creek and/or tributaries Dorsey Creek and/or tributaries	0303
002	Active	J-10 G-14 GR-15, G-13 J-1	Tankersley Creek above Tankersley Lake and/or tributaries Tankersley Creek below Tankersley Lake and/or tributaries Dragoo Creek and/or tributaries Hayes Creek and/or tributaries	0404
003	Active	F-10, G-6 F-2, F-11 F-12 G-7, G-11	Smith Creek and/or tributaries Blundell Creek and/or tributaries Lake Monticello and/or tributaries Lake Bob Sandlin and/or tributaries	0408

Outfall No.	Mine Phase	Pond Identification No.	Receiving Water	Segment No.
101	Post	A-3	Ripley Creek and/or tributaries	0303
102	Post	J-3, J-4 K-2 C-20	Tankersley Creek above Tankersley Lake and/or tributaries Tankersley Lake and/or tributaries Dragoo Creek and/or tributaries Hayes Creek and/or tributaries	0404
103	Post	A-28, G-24A, G-1, F2R3 H-1, H-3, and H-4	Smith Creek and/or tributaries Blundell Creek and/or tributaries	0408

Pond locations may be revised by the permittee if it becomes necessary to eliminate or establish new holding ponds.

All retention ponds shall be constructed prior to disturbing the natural soils in preparation for mining activity. As each discharge point is developed, TCEQ, Industrial Team, Wastewater Permitting Section (MC-148) and Region 5 Offices shall be notified.

Discharges from the retention ponds shall be monitored in accordance with this permit from the time the natural soils are disturbed until reclamation of the disturbed soils is complete and until the performance bond (Phase Two) issued by the appropriate authority has been released. At least 10 days prior to any such action, the TCEQ, Water Quality Applications Review & Processing Team (MC-148) and Region 5 Offices shall be notified in writing of the permittee's intent to close any retention pond or to discontinue monitoring.

The notification shall include a list of all ponds and a map of the mine site which shows the location and drainage area of all ponds in the "active mining areas" and "post-mining areas." Pond locations may be revised by the permittee if it becomes necessary to eliminate or establish new holding ponds. The design dimensions and construction information for each pond shall be maintained at the mine site and be made available to TCEQ personnel upon request.

- 4. Miscellaneous Provisions based on 40 CFR 434, Subpart F (provisions concerning acid or ferruginous drainage is not applicable as the Lignite Mining Areas exhibit alkaline drainage as defined by 40 CFR § 434.11 (c)). Any discharge or increase in the volume of a discharge caused by precipitation or during precipitation shall be analyzed and reported as a single grab sample for compliance with the following effluent limitations.
  - a. Outfalls 001, 002 and 003 (Alkaline Mine Drainage Active Mining Area):
    - i. Effluent discharges from an active mining area caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event, shall not exceed the following limitations:

**POLLUTANT** 

**EFFLUENT LIMITATIONS** 

Settleable Solids pH, standard units, SU

0.5 ml/l maximum not to be exceeded

6.0 SU minimum to 9.0 SU maximum at all times

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event, shall not exceed the following limitations:

**POLLUTANT** 

**EFFLUENT LIMITATIONS** 

pH, standard units, SU

6.0 SU minimum to 9.0 SU maximum at all times

b. Outfalls 101, 102 and 103 (Post Mining Area):

Effluent discharges from Post-Mining Areas, shall not exceed the following limitations:

**POLLUTANT** 

**EFFLUENT LIMITATIONS** 

pH, standard units, SU

6.0 SU minimum to 9.0 SU maximum at all times

- c. The permittee bears the burden of proof in establishing the volume of a precipitation event.
- 5. This provision applies to the treatment and disposal of domestic wastewater at internal Outfalls 201 and 203.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312 of this title. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335 of this title. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

- a) Volume (dry weight basis) of sludge disposed.
- b) Date of disposal.
- c) Identity and registration number of hauler.
- d) Location and registration or permit number of disposal site.
- e) Method of final disposal.

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

6. This provision supersedes and replaces (Provision 1) MONITORING AND REPORTING REQUIREMENTS, (Paragraph 1) 1. Self-Reporting, as defined on Page 4 of this permit.

Monitoring results shall be provided at intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-reporting form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by Monitoring and Reporting Requirements No. 10.

7. Monitoring results shall be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports shall be submitted in September of each year.



For pollutants which are monitored twice per year, the first effluent report shall be submitted six months after the date of permit issuance and subsequent reports every six months thereafter. For a pollutant which is required to be monitored 1/6 months, the six-month periods are defined as January through June and July through December. A minimum of one discharge shall be monitored for the pollutant(s) during each six month period, provided there is a discharge via the outfall during said period. For pollutants which are monitored four times per year, the first effluent report shall be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

### 8. PREVIOUSLY MONITORED EFFLUENTS

The permittee may discharge "active mining area" effluent to "post mining area" retention ponds, provided that the discharge meets the following requirements:

- a. "Active mining area" effluent must meet the limitations specified on Pages 2, 2a and 2b of this permit prior to being discharge to the "post mining area" retention ponds.
- b. Dikes and berms must be in place to prevent storm water draining from the "active mining area" to the "post mining area" retention ponds.
- c. The drainage area of the post mining retention pond must be a reclamation area as defined in 40 CFR Part 434 Coal Mining Point Source Category.
- 9. All discharges from Outfalls 001, 002, 003, 101, 102, and 103 shall comply with the limitations for hazardous metals as regulated under Title 30, Texas Administrative Code (TAC) Chapter 319, Subchapter B "Hazardous Metals."
- 10. The following mixing zone definition applies to Outfalls 001, 101, 002, 102, 003, and 103: There is no mixing zone established for discharges to an intermittent stream. Acute toxic criteria apply at the point of discharge.
- 11. Within 180 days from the date of issuance of the permit, the permittee is required to initiate and complete an investigation to determine the cause of elevated bacteria levels in discharges via Outfall 101. Bacteria levels shall be evaluated by analyzing for E. Coli at Outfall 101. Additionally, the permittee is required to perform a corrective action if necessary, and ensure that future discharges do not contain elevated levels of E.Coli. The investigation and any corrective action report shall be submitted to the Industrial Permits Team, Wastewater Permitting Section (MC-148) within 180 days from the date of issuance of the permit. This permit may be reopened by staff to include additional requirements or effluent limitations based on the review of the report(s) submitted.

Table 1 shall be completed with the analytical results for Outfall 101 and sent to the TCEQ, Wastewater Permitting Section (MC 148), for a minimum of four (4) separate sampling events which are a minimum of one (1) week apart. Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations and/or monitoring requirements. Test methods utilized to determine compliance with the permit monitoring and reporting requirements and/or limitations shall be according to EPA methodology and sensitive enough to detect the parameters listed below at the minimum analytical level (MAL).

TABLE 1

Outfall No. DC DG		Effluent (	Concentra	tion (µg/l	)	
Pollutants	Samp.	Samp.	Samp.	Samp.	Averag	MAL
E. Coli (CFU or MPN/100						N/A

\* Colony forming units or most probable number per 100 ml. The average bacteria concentration is a geometric mean of the values for the effluent samples collected.

### 12. DUST SUPPRESSION

The permittee is authorized to utilize effluent from "active mining area" and "post mining area" sedimentation ponds for dust suppression. With respect to utilization of effluent for dust suppression, the permittee shall comply with the following requirements.

- a. Dust suppression practices shall be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.
- b. Application of effluent for dust suppression shall be accomplished only when the area specified is in use. Dust suppression with effluent shall not occur during times when the ground has standing water, the ground is saturated, or within 24 hours of a rainfall event of 0.5 inches or greater during a 24-hour duration.
- c. Spray fixtures for the dust suppression systems shall be of such design that they cannot be operated by unauthorized personnel.
- 13. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 0303 of the Sulphur River Basin and Segment Nos. 0404 and 0408 of the Cypress Creek Basin and any subsequent updating of the water quality model for Segment Nos. 0303, 0404 and 0408, in order to determine if the limitations and conditions contained herein are consistent with any such revised model. The permit may be amended pursuant to 30 TAC Sections 305.62(d), as a result of such review.
- 14. Additional Monitoring and Reporting Requirements for Retention Ponds Regulated by 40 CFR Part 434.
  - a. Sampling Requirements: In addition to the reporting required under this permit at pages 2, 2a, 2b and 2c, the permittee shall sample and analyze each effluent discharge at a once per two week basis for active mining area ponds and once per month for post mining areas. Analysis shall be conducted for effluent discharged from each retention pond constructed and operated under this permit, except for:
    - i. effluent discharge from retention ponds in a series, which shall be sampled at a point from the last pond in the series; and
    - ii. effluent discharges from multiple retention ponds commingled in a pipe or a man-made conveyance structure before discharging into waters in the state, which shall be sampled at a point prior to mixing with other waters.
      - Sampling is not required for those retention ponds which had no effluent discharge during the two week period for active and monthly period for post mining areas. The analytical results from the routine monitoring required on pages 2 through 2c may be used to fulfill the requirements of this provision provided the results are obtained from each individual pond discharge as required by this provision.
  - b. Effluent Limitations for Acid or Ferruginous Active Mining Areas: (N/A)

- c. Effluent Limitations for Alkaline Active Mining Areas: (40 CFR Part 434, Subparts D and F)
  - i. Effluent discharges from an active mining area **not caused by precipitation** within any 24-hour period, shall not exceed the following limitations:

POLLUTANT	DAILY AVERAGE	DAILY MAXIMUM
Total Iron (Outfalls 001 and 002)	3.0 mg/l	6.0 mg/l
Total Iron (Outfall 003)	3.5 mg/l	7.0 mg/l
Total Suspended Solids	35 mg/l	70 mg/l
pH (standard units, SU)	(6.0 SU minimum - 9.0	SU maximum at all times)

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
Settleable Solids	o.5 ml/l maximum not to be exceeded
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

iii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

- d. Effluent Limitations for Post Mining Areas: (40 CFR Part 434, Subparts E and F)
  - i. Effluent discharges from Post-Mining Areas **not caused by precipitation**, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
Settleable Solids	0.5 ml/l maximum not to be exceeded
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

ii. Effluent discharges from Post-Mining Areas within any 24-hour period greater than the 10-year, 24-hour precipitation event, shall not exceed the following limitations:

POLLUTANT	EFFLUENT LIMITATIONS
pH (standard units, SU)	(6.0 SU minimum - 9.0 SU maximum at all times)

- e. The permittee bears the burden of proof in establishing the volume of a precipitation event.
- f. Retention Pond Sampling Plan: The permittee shall prepare and maintain onsite, readily available for inspection by TCEQ staff, a Retention Pond Sampling Plan that shows all of the retention pond effluent discharge sampling locations along with the designated outfall number associated with each sampling location. This sampling plan shall be updated as necessary to show retention ponds that come in and out of service.

g. Annual Reporting: On or before the end of January, April, July, and October; the permittee shall submit the effluent discharge monitoring data collected for the prior calendar quarter pursuant to this monitoring and reporting requirement to the TCEQ Enforcement Division (MC-224) and the Region 5 Office. The effluent discharge monitoring data reported the preceding two years shall be submitted by the permittee as an attachment to all permit renewal and amendment applications.

### 15. SCHEDULE OF COMPLIANCE FOR WATER QUALITY BASED EFFLUENT LIMITS

The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total aluminum at Outfall 003:

- A. Determine exceedance cause(s);
- B. Develop control options;
- C. Evaluate and select control mechanisms;
- D. Implement corrective action; and
- E. Attain final effluent limitations no later than three years from this permit issuance date.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire three years from this permit issuance date.

### PROGRESS REPORT DATE

January 1 April 1 July 1 October 1

The quarterly progress reports shall include a discussion of the interim requirements that have been completed at the time of the report and shall address the progress towards attaining the water quality-based final effluent limitations for total aluminum at Outfall 003 no later than three years from this permit issuance date.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

All reports shall be submitted to the Region 5 Office and to the Enforcement Division (MC 224) of the TCEQ.



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P. O. Box 13087 Austin, Texas 78711-3087

### **PERMIT TO DISCHARGE WASTES**

under provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code TPDES PERMIT NO. WQ0003017000 [For TCEQ office use only - EPA I.D. No. TX0062936]

This permit supersedes and replaces NPDES Permit No. <u>TX0062936</u> issued July 22, 1993, and TNRCC Permit No. <u>03017</u> issued May 7, 1991.

Pilgrim's Pride Corporation

whose mailing address is

P. O. Box 93 Pittsburg, Texas 75686

is authorized to treat and discharge wastes from Pilgrim's Pride Corporation Southwest Wastewater Plant (SIC 2015)

located at 664 Farm-to-Market Road 127 West, Mt. Pleasant, Titus County, Texas

to Tankersley Creek; thence to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight three years after the date of permit issuance.

ISSUED DATE: May 25, 2012

For the Commission

## EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge treated process wastewater and treated domestic wastewater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 3.5 million gallons per day (MGD). The daily maximum flow shall not exceed 5.0 MGD.

Effluent Characteristics		Disc	Discharge Limitations	tions		Minimum Self-Monitoring Requirements	g Requirements
	Daily A lbs/day	Daily Average /day mg/L	Daily Maximum Ibs/day mg/I	aximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type	Sample Type
Flow (MGD)	(f)	(3.5)	(5.0)	6	N/A	Continuous	Record
Carbonaceous Biochemical	225	N/A	450	N/A	30	3/week	Composite
Oxygen Demand (5-day) (*1)							•
Carbonaceous Biochemical	146	ς.	292	10	10	3/week	Composite
Oxygen Demand (5-day) (*2)							•
Total Suspended Solids	376	15	751	30	30	3/week	Composite
Biochemical Oxygen Demand (5-day)	454	16	738	56	26	3/week	Composite
Ammonia (as N)							•
April – October	29	1	58	7	2	3/week	Composite
November – March $(*1)$	113	4	227	<b>∞</b>	<b>∞</b>	3/week	Composite
November – March ( $*2$ )	113	4	170	9	9	3/week	Composite
Total Nitrogen	2,922	103	4,171	147	147	3/week	Composite
Chloride	Report	Report	Report	Report	N/A	1/week	Composite
Sulfate (*10)	Report	Report	Report	Report	N/A	1/week	Composite
Sulfate (*15)	9,815	323	20,766	683	683	l/week	Composite
Total Dissolved Solids	Report	Report	Report	Report	N/A	1/week	Composite
Conductivity (mmhos/cm)	(Report)	ort)	(Report)	ort)	ΝΆ	3/week	Grab
Oil and Grease (*12)	227	<b>∞</b>	376	14	14	3/week	Grab
Total Residual Chlorine (*3)	N/A	N/A	N/A	1.0	1.0	1/day	Grab
Total Phosphorus (*10)	Report	Report	Report	Report	N/A	1/week	Composite
Total Phosphorus (*11)	144.89	Report	Report	Report	N/A	1/week	Composite
Total Phosphorus – Monthly (*4)	N/A	N/A	Report (Ib	bs/month)	N/A	1/month	Calculation
Total Phosphorus – Annual ( $*5$ )( $*10$ )	N/A	N/A	Report	N/A	N/A	1/month	Summation
Total Phosphorus – Annual ( $*5$ )( $*11$ )	N/A	N/A	44,650	N/A	N/A	1/month	Summation
E. coli(*6)	(1)	(126)	(394)	<b>.</b> 4)	(394)	3/week	Grab
Fecal Coliform (*6)	Ź	N/A	(50	(Q	(200)	1/month	Grab

Page 2 of TPDES Permit No. WQ0003017000

Pilgrim's Pride Corporation

# EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - CONTINUED

Outfall Number 001

Effluent Characteristics	Q	Discharge Limitations		Minimum Self-Monitoring Requirements	g Requirements
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	aily Maximum
Lethal Whole Effluent Toxicity (WET) Limit 98% (PCS /STORET 22414) (*7)	imit 98% (PCS /STO)	RET 22414) (*7)		Measurement Frequency	Sample Type
Ceriodaphnia dubia (7-day chronic NOEC) (*8)	(6*) %86	(6*) %86	N/A	1/quarter	Composite
Pimephales promelas (7-day chronic NOEC) (*8)	(6*) %86	(6*) %86	.N/A	1/quarter	Composite
Sublethal WET Limit (Parameter 22414) (*13)	(*13)				
Ceriodaphnia dubia (7-day chronic NOEC)(*8)	Report	Report	N/A	1/quarter	Composite
Sublethal WET limit 80% (Parameter 22414) (*1	114) (*14)				
Ceriodaphnia dubia (7-day chronic NOEC)(*8)	%08	%08	N/A	1/quarter	Composite
:					•

- Effective beginning on date of permit issuance and lasting 364 days.
- Effective beginning 365 days after the date of issuance and lasting through the expiration date.
- The effluent shall contain a chlorine residual of at least 1.0 mg/L after a detention time of at least 20 minutes (based on peak flow) and shall be monitored 1/day by grab sample prior to dechlorination. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/L chlorine residual. An equivalent method of disinfection may be substituted only with prior approval from the Executive Director of the TCEO \* \* \* \* \* \* \*
  - Total Ibs of total phosphorus discharged during the calendar month (Ibs/month). \$\pi\_0^\*\
- Fotal Ibs of total phosphorus discharged during the previous twelve months (annual rolling mass limit).
  - Colony forming units (CFU) / 100 ml or most probable number (MPN) / 100 ml.
- The lethal WET limit No Observable Effect Concentration (NOEC) of not less than 98% is effective at the permit issue date.
- The NOEC is defined as the greatest effluent dilution at which a significant effect is not demonstrated. A significant effect is defined as a statistically significant difference between a specified effluent dilution and the control for toxicity (lethal or sublethal effects, whichever is specified).

- Report the NOEC value for survival.
- Effective beginning on date of permit issuance and lasting 2 years 363 days. See Other Requirement No. 11. (\*10)
- Effective beginning 2 years 364 days after the date of issuance and lasting through the expiration date. See Other Requirement No. 10. (\*11)
  - Total recoverable oil and grease measured as n-hexane extractable material. (\*12)
    - Report the sublethal NOEC. (\*13)
- The sublethal WET limit NOEC of not less than 80% becomes effective thirty-four months from the permit issue date, or one day before the permit expiration date, whichever comes first. (\*14)
  - Effective beginning 2 years 364 days after the date of issuance and lasting through the expiration date.
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample. તં
- The effluent shall contain a minimum dissolved oxygen level of at least 6.0 mg/L and shall be monitored 3/week by grab sample. E,
- There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil. 4
- Effluent monitoring samples shall be taken at the following location: At Outfall 001(N 33° 08' 21.4" / W 94° 59' 51"), following the final treatment unit and prior to discharging to Tankersley Creek. Š

Pilgrim's Pride Corporation

### **DEFINITIONS AND STANDARD PERMIT CONDITIONS**

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

### 1. Flow Measurements

- a. Annual average flow the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.
- b. Daily average flow the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow the highest total flow for any 24-hour period in a calendar month,
- d. Instantaneous flow the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) the highest 2-hour peak flow for any 24-hour period in a calendar month.

### 2. Concentration Measurements

- a. Daily average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
  - For domestic wastewater treatment plants When four samples are not available in a calendar month, the
    arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of
    at least four measurements shall be utilized as the daily average concentration.
  - ii. For all other wastewater treatment plants When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.
- d. Daily discharge the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.
  - The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.
- e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or

computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements of made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

- f. Daily average loading (lbs/day) the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as ( Flow, MGD x Concentration, mg/l x 8.34).
- g. Daily maximum loading (lbs/day) the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

### 3. Sample Type

- a. Composite sample For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).
- b. Grab sample an individual sample collected in less than 15 minutes.
- 4. Treatment Facility (facility) wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
- 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.
- 6. Bypass the intentional diversion of a waste stream from any portion of a treatment facility.

### MONITORING AND REPORTING REQUIREMENTS

### 1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

### 2. Test Procedures

- a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.
- b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

### 3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR \$264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- c. Records of monitoring activities shall include the following:
  - i. date, time, and place of sample or measurement;
  - ii. identity of individual who collected the sample or made the measurement,
  - iii. date and time of analysis;
  - iv. identity of the individual and laboratory who performed the analysis,
  - v. the technique or method of analysis; and
  - vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

### 5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

### 6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

### 7. Noncompliance Notification

- a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
  - i. Unauthorized discharges as defined in Permit Condition 2(g).
  - ii. Any unanticipated bypass that exceeds any effluent limitation in the permit,
  - iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.
- c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
- d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

- 8. In accordance with the procedures described in 30 TAC §§35.301 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.
- 9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

One hundred micrograms per liter (100 μg/L);

- ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
- iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
- iv. The level established by the TCEQ.
- b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - Five hundred micrograms per liter (500 μg/L);

ii. One milligram per liter (1 mg/L) for antimony;

- iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
- iv. The level established by the TCEQ.

### 10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

- 11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
  - c. For the purpose of this paragraph, adequate notice shall include information on:
    - i. The quality and quantity of effluent introduced into the POTW; and
    - ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

### PERMIT CONDITIONS

### 1. General

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:
  - i, Violation of any terms or conditions of this permit;

ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

### 2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.
- Authorization from the Commission is required before beginning any change in the permitted facility or activity
  that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 7.075 (relating to Administrative Penalties), 7.101 7.111 (relating to Civil Penalties), and 7.141 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

### 3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.
- The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of bis presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

### 4. Permit Amendment and/or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements, Notice shall also be required under this paragraph when:
  - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or
  - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;
  - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the TWC \$26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a)for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

### 5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.
- b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).
- 6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

### 7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

### 8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

### 9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby

### 10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

### 11. Notice of Bankruptcy.

- a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
  - i. the permittee;
  - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
  - iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
- b. This notification must indicate:
  - i. the name of the permittee;
  - ii. the permit number(s);
  - iii. the bankruptcy court in which the petition for bankruptcy was filed; and
  - iv. the date of filing of the petition.

### **OPERATIONAL REQUIREMENTS**

- 1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.
- 2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 319.29 concerning the discharge of certain hazardous metals.
- 3. Domestic wastewater treatment facilities shall comply with the following provisions:
  - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.
  - b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.
- 4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.
- 5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
- 6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

### 7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

- 8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
  - a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
- c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.
- 9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.
- 10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.
- 11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:
  - a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

- b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
- c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.
- d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.
- e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
- f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
  - i. Volume of waste and date(s) generated from treatment process;
  - ii. Volume of waste disposed of on-site or shipped off-site;
  - iii, Date(s) of disposal;
  - iv. Identity of hauler or transporter;
  - v. Location of disposal site; and
  - vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEQ Revision 08/2008

### OTHER REQUIREMENTS

- 1. A plant operator holding a valid Class B certificate of competency or higher, issued pursuant to 30 TAC Chapter 30, shall be on-site at the Southwest Plant whenever wastewater from the poultry processing plant is received. The certified operator shall conduct a daily visual inspection of the treatment facility. Records of these inspections shall be maintained on a weekly basis and be available at the plant site for inspection by authorized representatives of the Texas Commission on Environmental Quality (TCEQ) for a minimum period of three years.
- 2. The permittee shall maintain at all times a minimum of 24-inches of freeboard in the sludge lagoon.
- 3. The permittee shall maintain a measuring device in the sludge lagoon. The permittee shall monitor and record the level of the sludge lagoon daily, beginning upon date of issuance of the permit and continuing for at least one year after date of issuance. The records shall be maintained weekly and be available to at the plant site for at least three years for inspection by authorized representatives of the TCEQ.
- 4. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point where the discharge reaches Tankersley Creek.
- 5. A wastewater treatment plant unit may not be located within the 100-year floodplain unless the plant is protected from inundation and damage that may occur during such flood event.
- 6. The discharge shall not contain feathers, hair, stringers, animal parts, or paunch manure in the effluent.
- 7. Best Management Practices (BMPs):
  - a. An operation and maintenance manual shall be available at the facility, and shall cover the recommended routine operation procedures and maintenance practices for the entire wastewater treatment facility. In addition to covering routine operation procedures and maintenance practices, the manual shall include, but is not limited to, the following:
    - i. Procedures which will maximize wastewater treatment in a way which optimizes effluent quality.
    - ii. Recommendations for specific operational adjustments to wastewater processing which would be necessary as a result of significant changes in production or influent wastewater loading.
    - iii. Operation or maintenance procedures which account for storm water contributions that may affect the wastewater treatment facility or may affect on-site solid waste management.
    - iv. Operations procedures for the on-site management of residuals or solid waste generated from wastewater treatment, which will prevent the creation of nuisances and ensure that unintentional releases do not occur which could pose adverse impacts to surface water or could cause contamination of soil or groundwater resources.
    - v. Procedures which will prevent the creation of nuisances to the greatest extent practicable from wastewater treatment units while being operated, undergoing maintenance, or while out of service.
  - b. The permittee shall operate and maintain the wastewater treatment facility according to the operation procedures and maintenance practices manual.
  - c. A licensed professional engineer shall prepare an implementation plan for the selected sludge management method.

- i. The plan shall be developed within six months of permit issuance and shall be implemented with one year after permit issuance.
- ii. The plan may be amended at any time during the life of the permit with a 90 day notification to the Wastewater Permitting Section, Industrial Permits Team, (MC 148) of the TCEQ, and the TCEQ Region 5 Office.
- iii. The permittee shall furnish a copy of the plan to authorized representatives of the TCEQ upon request.
- 8. Nutrients from the permitted discharge via Outfall 001 or other controllable sources shall not cause excessive growth of aquatic vegetation which impairs an existing, attainable, or designated use.
- 9. The sludge from the treatment process shall be digested, dewatered and disposed of in accordance with all the applicable rules of the TCEQ. The permittee shall ensure that the disposal of sludge does not cause any contamination of the ground or surface waters in the state. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:
  - a. Volume of sludge disposed
  - b. Date of disposal
  - c. Identity of hauler
  - d. Location of disposal site
  - e. Method of final disposal

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least three (3) years.

10. The annual maximum load of total phosphorus discharged via Outfall 001 shall not exceed 44,650 1bs/year. This limit is consistent with the required phosphorus load reductions identified in the TCEQ document Implementation Plan for One Total Maximum Daily Load for Dissolved Oxygen in Lake O' the Pines Segment 0403, approved July 9, 2009 (I-Plan) to ensure compliance with the TMDL for Dissolved Oxygen in Lake O' the Pines Segment No. 0403.

Annual maximum load is defined as the total of all total phosphorus determinations taken within a period of 12 consecutive preceding months. It is calculated by adding the individual measurements together and taken during the previous 365 day period. The first load is calculated based on the number of measurements taken during the first month the permit goes into effect. The second reported load is calculated based on the number of measurements taken during the first and second month the permit is in effect. This calculation procedure will continue for a total of 12 months. When the permittee has a total of 13 months of data, then the first month of data will be dropped from the calculation and the 13th month of data will be included. This procedure will be followed for the life of the permit.

- 11. The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total phosphorus and sulfate at Outfall 001:
  - (a) Determine exceedence cause(s);
  - (b) Develop control options;
  - (c) Evaluate and select control mechanisms;
  - (d) Implement corrective action; and
  - (e) Attain final effluent limitations no later than three years from the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the following schedule. The requirement to submit quarterly progress reports shall expire two years 364 days from the date of permit issuance.

### PROGRESS REPORT DATE

January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the interim requirements that have been completed at the time of the report and shall address the progress towards attaining the water quality-based final effluent limitations for total phosphorus at Outfall 001 no later than three years from the date of permit issuance.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

All reports shall be submitted to the Region 5 Office and to the Enforcement Division (MC 224) of the TCEQ.

- 12. The permittee shall comply with the following schedule of activities for the attainment of the Whole Effluent Toxicity (WET) Limitation(s) on Page 2a for Outfall 001:
  - A. Within 90 days of permit issuance- The permittee shall develop a WET compliance schedule plan (Plan) to initiate a toxicity identification strategy based upon: knowledge of their treatment system, influent/effluent characterization, Significant Industrial Users (SIUs), source waters, housekeeping practices, etc. The permittee shall submit the Plan to the TCEQ Standards Implementation Team (MC 150).
  - B. Addition of Plan Milestones- The permittee shall submit an addendum to the Plan which includes milestones as pending studies dictate. The milestones below are provided as an example. Actual Plan milestones shall be based upon the previously prepared toxicity identification strategy and include the estimated date of completion.

### Example

- 1. The permittee shall perform characterization studies to identify the possible cause of toxicity.

  Multiple studies may be necessary to correctly identify and confirm the cause.
- 2. The permittee shall select and evaluate corrective action(s).
- 3. The permittee shall implement the selected corrective action(s). Subsequent failures will require the permittee to re-evaluate the effectiveness of the correct action(s) or the possibility of an additional source of toxicity.

The Plan addendum shall be submitted to the TCEQ Standards Implementation Team (MC 150) with a quarterly progress report indicated below.

C. The permittee shall comply with the final WET limit(s) within 34 months from the date of permit issuance or one day before the permit expires, whichever comes first.

- D. If the toxicant or a best management practice is identified prior to the effective date of the permit, the permittee may submit a major amendment application requesting the addition of a chemical-specific limit or best management practice.
- E. The permittee shall submit quarterly progress reports in accordance with the following compliance schedule. The requirement to submit quarterly progress reports shall expire 34 months from the date of permit issuance.

### PROGRESS REPORT DATES

January 1
April 1
July 1
October 1

The quarterly progress reports shall include a discussion of the milestones completed at the time of the report and shall address the progress towards attaining the final WET limit(s) at Outfall 001 no later than 34 months from the date of permit issuance or one day before the permit expires, whichever comes first.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled due date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled milestone identified within the submitted plan.

All progress reports shall be submitted to the TCEQ Standards Implementation Team (MC 150). Copies of all progress reports and related documents shall be submitted to the Whole Effluent Toxicity Coordinator (6WQ-P), U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

### CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 001 for whole effluent toxicity (WET) testing.

### 1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.
- b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013), or its most recent update:
  - 1) Chronic static renewal survival and reproduction test using the water flea (Ceriodaphnia dubia) (Method 1001.0 or the most recent update). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever comes first. This test shall be conducted once per quarter.
  - 2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0 or the most recent update). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 31%, 41%, 55%, 80%, and 98% effluent. The critical dilution, defined as 98% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a WET limit, a Chemical-Specific (CS) limit, a Best Management Practice (BMP), or other appropriate actions to address toxicity to the fathead minnow. The permittee may be required to conduct a sublethal Toxicity Reduction Evaluation (TRE) after multiple toxic events.
- e. At the permit issue date, the lethal (survival) No Observed Effect Concentration (NOEC) effluent limitation of not less than 98% (see the EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS section) for both test species is effective.
- f. At the permit issue date, if a test for either test species fails to pass the lethal endpoint at the 98% effluent dilution, the testing frequency will increase to monthly for that test species until such time compliance with the NOEC effluent limitation is demonstrated for a period of three consecutive months, at which time a quarterly testing frequency

may be resumed.

- g. Thirty-four months from the permit issue date, the sublethal (reproduction) No Observed Effect Concentration (NOEC) effluent limitation of not less than 80% (see the EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS section) for the water flea becomes effective.
- h. Thirty-four months from the permit issue date, if a water flea test fails to pass the sublethal endpoint at the 80% effluent dilution, the testing frequency will increase to monthly until such time compliance with the NOEC effluent limitation is demonstrated for a period of three consecutive months, at which time the quarterly testing frequency may be resumed.

### i. Testing Frequency Reduction

- 1) If none of the first four consecutive quarterly fathead minnow tests demonstrates significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per year.
- If one or more of the first four consecutive quarterly fathead minnow tests demonstrates significant toxicity, the permittee shall continue quarterly testing until the permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant toxicity, the permittee will resume a quarterly testing frequency until the permit is reissued.

### 2. Required Toxicity Testing Conditions

- a. Test Acceptance The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:
  - 1) a control mean survival of 80% or greater;
  - a control mean number of water flea neonates per surviving adult of 15 or greater;
  - a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;
  - a control Coefficient of Variation percent (CV%) of 40 or less between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test.
  - a critical dilution CV% of 40 or less for young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.
  - 6) a Percent Minimum Significant Difference of 47 or less for water flea reproduction;
  - 7) a Percent Minimum Significant Difference of 30 or less for fathead minnow growth.

### b. Statistical Interpretation

- 1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced above, or its most recent update.
- 2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced above, or its most recent update.
- The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual, "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.
- 4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.
- 5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).
- The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3 above.
- 7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability.

### c. Dilution Water

1) Dilution water used in the toxicity tests shall be the receiving water collected at a point upstream of the discharge as close as possible to the discharge point,

but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall; (a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge, or (b) utilize the closest downstream perennial water unaffected by the discharge.

- 2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
  - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;
  - b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);
  - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.
- 3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

### d. Samples and Composites

- 1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.
- 2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum numbers of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with

renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

### 3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

- a. The permittee shall prepare a full report of the results of all tests in accordance with the above-referenced method manual, or the most recent update, for every valid and invalid toxicity test initiated whether carried to completion or not.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.
  - 1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.
  - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.
  - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.
  - 4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.
- c. Enter the following codes for the appropriate parameters for valid tests only:
  - 1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 2) For the water flea, Parameter TOP3B, report the NOEC for survival.
  - 3) For the water flea, Parameter TXP3B, report the LOEC for survival.
  - For the water flea, Parameter TWP3B, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."
  - 5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.
  - 6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.
  - 7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.

- 9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.
- For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
- 11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.
- 12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.
- d. Enter the following codes for fathead minnow retests only:
  - 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- e. The permittee shall report the sublethal (reproduction) WET values for the 30-day average and the 7-day minimum under Parameter No. 22414 for the appropriate reporting period for both test species. If more than one valid test was performed during the reporting period, the NOECs will be averaged arithmetically and reported as the daily average NOEC. The data submitted should reflect the lowest lethal or sublethal results during the reporting period.

### 4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant sublethal effect at the critical dilution and only for the fathead minnow. A significant sublethal effect is defined as a statistically significant difference between the growth of the test organism in a specified effluent dilution when compared to the growth of the test organism in the control.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any test that demonstrates a significant sublethal effect at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion (the last day of the test).
- b. No more than one retest per month is required.

### 5. <u>Toxicity Reduction Evaluation</u>

- a. Within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a General Outline for initiating a sublethal TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, and a sampling and analytical schedule.
- b. Within 90 days of being so instructed due to multiple toxic events, the permittee shall submit a TRE Action Plan and Schedule for conducting a sublethal TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to

determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant sublethality at the critical dilution. The TRE Action Plan should lead to the successful elimination of significant sublethality. As a minimum, the TRE Action Plan shall include the following:

- Specific Activities The TRE Action Plan shall specify the approach the permittee 1) intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee should perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Characterization Procedures" (EPA/600/6-91/003), procedures. The permittee should perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
- 2) Sampling Plan The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant sublethality. Where the permittee has identified or suspects specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) of effluent toxicity;
- 3) Quality Assurance Plan The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
- 4) Project Organization The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
  - 1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant(s) performed during the quarter;
  - 2) results and interpretation of any characterization, identification, and confirmation

tests performed during the quarter:

- 3) any data and substantiating documentation which identifies the pollutant(s) and source(s) of effluent toxicity;
- 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
- 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
- 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing.
- f. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the date of being instructed to perform the sublethal TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant sublethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- g. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a sublethal WET limit, to specify a BMP, and to specify CS limits.

Time

Date

CV%\*

**PMSD** 

TABLE 1 (SHEET 1 OF 4)

### BIOMONITORING REPORTING

### CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Time

Date

	date
ic Dilution Wate	er
END OF TEST	
80%	98%
	}
i	c Dilution Wate

<sup>\*</sup>Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults) Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

### TABLE 1 (SHEET 2 OF 4)

### CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean number of young produced per adult significantly less than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (98%): \_\_\_\_\_\_ YES \_\_\_\_\_ NO

### PERCENT SURVIVAL

			Percent	effluent		
Time of Reading	0%	31%	41%	55%	80%	98%
24h						
48h	·					
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (98%); \_\_\_\_\_YES \_\_\_\_NO

- 3. Enter percent effluent corresponding to each NOEC/LOEC below:
  - a.) NOEC survival = \_\_\_\_\_\_ % effluent
  - b.) LOEC survival = \_\_\_\_\_% effluent
  - c.) NOEC reproduction = \_\_\_\_\_% effluent
  - d.) LOEC reproduction = \_\_\_\_\_ % effluent

### TABLE 1 (SHEET 3 OF 4)

### BIOMONITORING REPORTING

### FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dates and Times	No. 1	FROM:		e Time			Date Tim	
Composites Collected	No. 2	FROM:	<u> </u>			TO:		
Test initiated:								
Dilution water used:								
		FATI	HEAD MIN	NOW G	ROWT	H DATA		
		Ave	rage Dry W	Jeight in	millige	ams	North and an annual	
Effluent Concentration (	%) <u> </u>		in replic	ate char	nbers		Mean Dry	_CV%*
		A	В	0,	D	E	Weight	
0%	(							
31%								
41%	STATE AND REAL PROPERTY OF A STATE OF A STAT							
55%	AND THE RESERVE OF THE PARTY OF							
80%	The same of the sa							
98%	TO SECURE THE SECURE T							
PMSD	A Company of the Comp							
* Coefficient of	of Varia	ation = st	andard dev	iation x	100/me	ean		
					-		1 a	ar C. til.
1. Dunnett's Pro Bonferroni ac								est (with
Is the mean d (growth) for t	ry weig the % e	ght (grow ffluent co	th) at 7 day orrespondin	s signifi g to sig	cantly l	ess than the nonlethal e	e control's d ffects?	ry weight
	CRIT	ICAL DII	LUTION (	98%): _		_YES	NO	

### TABLE 1 (SHEET 4 OF 4)

### **BIOMONITORING REPORTING**

### FATHEAD MINNOW GROWTH AND SURVIVAL TEST

### FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration			ent Survi cate char			Μe	ean perc survival	ent	CV%*
(%)	A	В	С	D	E	24h	48h	7 day	
0%									
31%									
41%									
55%									
80%									
98%									

<sup>\*</sup> Coefficient of Variation = standard deviation x 100/mean

2,	Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with
	Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILLITION	(~OD/).	3777.0	NTO
CREECAL DILUTION	(08%):	YES	NO

<ol><li>Enter per</li></ol>	rcent effluent corresj	ponding to each NOE(	C/LOEC below:
-----------------------------	------------------------	----------------------	---------------

a.) NOEC survival =	% effluent
b.) LOEC survival =	% effluent
c.) NOEC growth =	% effluent
d.) LOEC growth =	% effluent

### 24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

### 1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.
- b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:
  - 1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.
  - 2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a WET limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, or other appropriate actions to address toxicity. The permittee may be required to conduct a TRE after multiple toxic events.

### 2. Required Toxicity Testing Conditions

- a. Test Acceptance The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.
- b. Dilution Water In accordance with item 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.
- c. Samples and Composites
  - 1) The permittee shall collect one composite sample from Outfall 001.

- 2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

### 3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of the manual referenced above, or its most recent update, for every valid and invalid toxicity test initiated.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.
  - 1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.
  - 2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.
- c. Enter the following codes for the appropriate parameters for valid tests only:
  - 1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
  - 2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
- d. Enter the following codes for retests only:
  - 1) For retest number 1, Parameter 22415, enter a "o" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
  - 2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or

equal to 50%, enter "1."

### 4. <u>Persistent Mortality</u>

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

- a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

### 5. <u>Toxicity Reduction Evaluation</u>

- a. Within 91 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
  - 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Characterization Procedures" (EPA/600/6-91/003), procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

- 2) Sampling Plan The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) of effluent toxicity;
- Quality Assurance Plan The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
- 4) Project Organization The TRE Action Plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
  - 1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant(s) performed during the quarter;
  - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
  - 3) any data and substantiating documentation which identifies the pollutant(s) and source(s) of effluent toxicity;
  - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
  - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and
  - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.
  - The requirement to comply with 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.
- i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and to specify a CS limit.

# TABLE 2 (SHEET 1 OF 2)

### WATER FLEA SURVIVAL

# **GENERAL INFORMATION**

	Time	Date
Composite Sample Collected		
Test Initiated		

### PERCENT SURVIVAL

Time	D on		Percent effluent										
Time	Rep	0%	6%	13%	25%	50%	100%						
	A												
	В												
o.4h	С				:								
24h	D												
	E			a e fair e Se Atria	en de de la companya								
	MEAN*												

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = \_\_\_\_\_% effluent

# TABLE 2 (SHEET 2 OF 2)

### FATHEAD MINNOW SURVIVAL

# GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

### PERCENT SURVIVAL

				Percent	effluent		
Time	Rep	ο%_	6%	13%	25%	50%	100%
	A					,	
	В						
	С						
24h	D						
	Е						
	MEAN						

Enter percent efflue	nt correct	nonding to	tha I Cco	halow
Diffice Delectification		DOMAINE LO	we bond	DOTOM

24 hour LC50 = \_\_\_\_\_% effluent

# Appendix B POND G-129 AREA AND CAPACITY DATA

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	12/18/2003	1000	7	1	1.664		1		i		
MO - Winfield Mine	003	G-7	12/18/2003	1000	7	1	1.664						
MO - Winfield Mine	003	G-7	1/24/2004	1500	7.1	8	0.479				i		
MO - Winfield Mine	003	G-7	1/24/2004	1500	7.1	8	0.479	2					
MO - Winfield Mine	003	G-7	2/6/2004	1000	7.2	7	0.281		0.009				
40 - Winfield Mine	003	G-7	2/6/2004	1000	7.2	7	0.281	İ	0.009	į			
40 - Winfield Mine	003	G-7	2/13/2004	4000	6.9	1	1.384			1			
40 - Winfield Mine	003	G-7	2/13/2004	4000	6.9	1	1.384	-					
MO - Winfield Mine	003	G-7	2/20/2004	4000	7	2	0.282						
40 - Winfield Mine	003	G-7	2/20/2004	4000	7	2	0.282						
40 - Winfield Mine	003	G-7	2/27/2004	3000	6.9	1	0.143						
MO - Winfield Mine	003	G-7	3/5/2004	8000	7.6	1	0.301				1		
иО - Winfield Mine	003	G-7	3/5/2004	8000	7.6	1	0.301						
MO - Winfield Mine	003	G-7	3/12/2004	3000	7.5	6	0.926						
MO - Winfield Mine	003	G-7	3/12/2004	3000	7.5	6	0.926					1	
40 - Winfield Mine	003	G-7	3/19/2004	2000	7	1	0.43						
40 - Winfield Mine	003	G-7	3/19/2004	2000	7	1	0.43					i	
40 - Winfield Mine	003	G-7	4/24/2004	4000	7	6	0.36						
MO - Winfield Mine	003	G-7	4/24/2004	4000	7	6	0.36						
MO - Winfield Mine	003	G-7	4/29/2004	2000	6.7	2	1.942						
MO - Winfield Mine	003	G-7	4/29/2004	2000	6.7	2	1.942						
MO - Winfield Mine	003	G-7	5/7/2004	3000	7.2	3	1.754						
MO - Winfield Mine	003	G-7	5/7/2004	3000	7.2	3	1.754						
MO - Winfield Mine	003	G-7	5/14/2004	2000	7	1	0.885						
MO - Winfield Mine	003	G-7	6/11/2004	3000	7	3	0.443	1	0.001	-			
MO - Winfield Mine	003	G-7	6/11/2004	3000	7	3	0.443		0.001				
MO - Winfield Mine	003	G-7	6/18/2004	3000	7.1	3	0.766						
MO - Winfield Mine	003	G-7	6/18/2004	3000	7.1	3	0.766				20,		
40 - Winfield Mine	003	G-7	6/30/2004	2000	7.1	1	0.163	į.					
MO - Winfield Mine	003	G-7	6/30/2004	2000	7.1	1	0.163						
MO - Winfield Mine	002	G-13	12/23/2004	1000	7.1					-	<0.1		
иО - Winfield Mine	003	G-7	12/23/2004	3000	7.2	1	0.411						
40 - Winfield Mine	003	G-7	12/23/2004	3000	7.2	1	0.411						
ИО - Winfield Mine	002	G-13	1/7/2005	5000	7.3	1					<0.1		
//O - Winfield Mine	003	G-7	1/7/2005	5000	7.2	4	0.3		-				
MO - Winfield Mine	003	G-7	1/7/2005	5000	7.2	4	0.3						
40 - Winfield Mine	003	G-7	1/14/2005	3500	7.1	5	0.126			Ì			
MO - Winfield Mine	003	G-7	1/14/2005	3500	7.1	5	0.126						
MO - Winfield Mine	003	G-7	1/21/2005		7.2	2	0.31			}			
MO - Winfield Mine	003	G-7	1/21/2005	2000	7.2	2	0.31	1		{		1	

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot TS	M (ml/l)	TDS (mg/l)	Tem
MO - Winfield Mine	002	G-13	2/4/2005	1000	7	3	0.238						
MO - Winfield Mine	003	G-7	2/4/2005	1500	7.1	3	0.153		militario de la contrata del la contrata de  la contrata de  la contrata de				
MO - Winfield Mine	002	G-13	2/4/2005	1000	7	3	0.238						
MO - Winfield Mine	003	G-7	2/4/2005	1500	7.1	3	0.153						
MO - Winfield Mine	002	G-13	6/23/2005	2000	7.9	2	0.081						
MO - Winfield Mine	002	G-13	6/23/2005	2000	7.9	2	0.081						
MO - Winfield Mine	002	G-13	9/24/2005	4000	7.3	6	0.216						
MO - Winfield Mine	002	G-13	9/24/2005	4000	7.3	6	0.216						
MO - Winfield Mine	002	G-13	2/18/2006	2000	6.3	1	0.294						
MO - Winfield Mine	002	G-13	2/18/2006	2000	6.3	1	0.294						
MO - Winfield Mine	003	G-7	3/24/2006	20000	7.2	8	0.998						
MO - Winfield Mine	003	G-7	3/24/2006	20000	7,2	8	0.998						
MO - Winfield Mine	002	G-13	3/24/2006	4000	7.1	2	0.389						
MO - Winfield Mine	002	G-13	3/24/2006	4000	7.1	2	0.389						
MO - Winfield Mine	002	G-13	5/13/2006		8,5		0.128						
MO - Winfield Mine	002	G-13	5/13/2006	4000	8.5	4	0.128			i			
MO - Winfield Mine	002	G-13	5/20/2006	4000	8.2	3	0.327				i		
MO - Winfield Mine	002	G-13	5/20/2006	4000	8.2	13	0.327						
MO - Winfield Mine	002	G-13	12/30/2006	4000	5.9	2	0.55					1	
MO - Winfield Mine	002	G-13	12/30/2006	4000	5.9	4	0.55						
MO - Winfield Mine	002	G-13	12/30/2006	4000	5.9	4	0.55						
MO - Winfield Mine	002	G-13	1/6/2007	4000	5.9	<1	0.399	0	0				
MO - Winfield Mine	002	G-13	1/6/2007		5.9	1	0.399				i		
MO - Winfield Mine	002	G-13	1/13/2007		7.1	6	0.416				i		
MO - Winfield Mine	002	G-13	1/13/2007	4000	7.1	6	0.416	0	0				
MO - Winfield Mine	002	G-13	1/19/2007		7	3	0.534		į				
MO - Winfield Mine	003	G-7	1/19/2007	8000	5.8	11	0.659	`					
MO - Winfield Mine	002	G-13	1/19/2007	4000	7	3	0.534	0 (	)				
MO - Winfield Mine	003	G-7	1/19/2007	8000 6	5.8	11	0.659	0 (	) i				
MO - Winfield Mine	003	G-11	1/20/2007	2000	7.7	0	0	0 0	)	< 0.	1		
MO - Winfield Mine	002	G-13	1/26/2007	4000	5.9	12	0.564						
MO - Winfield Mine	002	G-13	1/26/2007	4000 6	5.9	12	0,564	0 (	)				
MO - Winfield Mine	003	G-7	2/16/2007	1500	7.2	5	0.639						
MO - Winfield Mine	003	G-7	2/16/2007	1500 7	7.2	5	0.639	0 0	)				
MO - Winfield Mine	003	G-7	2/23/2007	1500 7	2	1	0.273						
MO - Winfield Mine		G-7	2/23/2007	1500 7	.2	<1	0.273	0 0	)				
MO - Winfield Mine	002	G-13	5/12/2007		.9		1.19					T	
MO - Winfield Mine		G-13	5/12/2007				1.19	- i					
MO - Winfield Mine	·}	G-7	5/14/2007			1	0.885				i		
иО - Winfield Mine	(	G-13	6/2/2007 4				0.45						

FACILITY	OUTFAL	L POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	l (mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	6/2/2007	2000	7.1	6	0.319						
MO - Winfield Mine	002	G-13	6/2/2007	4000	8.5	2	0.45						
MO - Winfield Mine	003	G-7	6/2/2007	2000	7.1	6	0.319						
MO - Winfield Mine	003	G-11	6/21/2007	1500	6.4		}				<0.1		
MO - Winfield Mine	003	G-11	6/21/2007	1500	6.4						<0.1		
MO - Winfield Mine	003	G-7	6/22/2007	20000	6.7	<1	0.455						
MO - Winfield Mine	003	G-7	6/22/2007	20000	6.7	1	0.455						
MO - Winfield Mine	002	G-13	6/23/2007	4000	8.6	1	0.221						
MO - Winfield Mine	002	G-13	6/23/2007	4000	8.6	<1	0.221						
MO - Winfield Mine	003	G-11	6/28/2007	1500	6.4						<0.1		
MO - Winfield Mine	003	G-7	6/28/2007	20000	6.5	2	0.403						
MO - Winfield Mine	003	G-7	6/28/2007	20000	6.5	2	0.403						
MO - Winfield Mine	002	G-13	7/7/2007	4000	7.9	3	0.319						
MO - Winfield Mine	003	G-7	7/7/2007	4000	7.8	4	0.728	0	0				
MO - Winfield Mine	003	G-11	7/7/2007	1500	6.4						<0.1		
MO - Winfield Mine	002	G-13	7/7/2007	4000	7.9	3	0.319						
MO - Winfield Mine	003	G-11	7/7/2007		6.4	-		Ì			< 0.1		
MO - Winfield Mine	003	G-7	7/7/2007	4000	7.8	4	0.728						
MO - Winfield Mine		G-11	7/7/2007	1500	6,4	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	7/7/2007	·	7.9	3	0.319	0	0				
MO - Winfield Mine	003	G-7	7/7/2007		7.8	4	0.728						
MO - Winfield Mine	003	G-7	7/13/2007		7.9	6	0.423						
MO - Winfield Mine	003	G-7	7/13/2007	į	7.9	6	0.423	0	0				
MO - Winfield Mine		G-11	7/13/2007	· · · · · · · · · · · · · · · · · · ·	6.4	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	7/13/2007		6.7	11	0.334						
MO - Winfield Mine	003	G-11	7/13/2007	ļ	6.4						< 0.1		
MO - Winfield Mine	003	G-7	7/13/2007	ļ	7.9	6	0.423						
MO - Winfield Mine	002	G-13	7/13/2007	·	6.7	11	0.334						
MO - Winfield Mine	003	G-11	7/13/2007		6.4						<0.1		
MO - Winfield Mine	002	G-13	7/13/2007	L	6.7	11	0.334	0	0				
MO - Winfield Mine		G-11	7/20/2007		6.3	0	0	0	0		0.1		
MO - Winfield Mine	003	G-11	7/20/2007	for a section of the	6.3	1		1	}		<0.1		
MO - Winfield Mine	003	G-11	7/20/2007		6.3			-			< 0.1		
MO - Winfield Mine	003	G-7	7/21/2007		7.4	3	0.287						
MO - Winfield Mine	003	G-7	7/21/2007		7.4	3	0.287	0	0				
MO - Winfield Mine	002	G-13	7/21/2007		6.8	13	0.436	0	0			i	
MO - Winfield Mine	002	G-13	7/21/2007		6.8	13	0.436	<del>-</del>	-				
MO - Winfield Mine	002	G-13	7/21/2007		6.8	13	0.436		1				
MO - Winfield Mine	002	G-13	7/21/2007		7.4	3	0.287	1					
MO - Winfield Mine	003	G-7	8/3/2007		7.4	1	0.922	ļ	<u> </u>				

FACILITY	OUTFAL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-11	8/3/2007		6.7		1		, ,,		< 0.1		
MO - Winfield Mine	003	G-7	8/3/2007	3000	7	<1	0.922		1			Tanadi comencia de la comencia del la comencia de  la comencia de  la comencia de	
MO - Winfield Mine	003	G-11	8/3/2007	500	6.7	0	0	0	0	ì	0.1	Ì	
MO - Winfield Mine	003	G-7	8/3/2007	3000	7	<1	0.922	0	0				
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	1	0.261			Ì			
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	<1	0,261			AT ATT C AT RESERVE TO A SECURIOR WAY	Ì		
MO - Winfield Mine	002	G-13	8/4/2007	4000	8.5	<1	0.261	0	0			1	
MO - Winfield Mine	003	G-11	9/6/2007	500	7.1						< 0.1	i i	
MO - Winfield Mine		G-11	9/6/2007	500	7.1	0	0	0	0		0.1		
MO - Winfield Mine	002	G-13	9/8/2007	2000	6.5	8	0.306	1	<0.005	\			
MO - Winfield Mine	003	G-7	9/8/2007	4000	7	7	0.42	0	0				
MO - Winfield Mine	003	G-7	9/8/2007	4000	7	7	0.42		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				$\overline{}$
MO - Winfield Mine	003	G-7	9/8/2007	4000	7		0.42						
MO - Winfield Mine	002	G-13	9/8/2007	and the second second	6.5		0.306		0.005				
MO - Winfield Mine	002	G-13	9/8/2007	2000	6.5		0.306		0.005				
MO - Winfield Mine	003	G-7	12/15/2007	2000	6.6	5	0.57		0.006	TOTAL ACTION ASSESSMENT AND ADMINISTRATION OF	***************************************		
MO - Winfield Mine	003	G-7	12/15/2007		6.6	5	0.57		<0.006				
MO - Winfield Mine	002	G-13	12/27/2007	2000	6.8	3	0.204		<0.006				
MO - Winfield Mine	002	G-13	12/27/2007	2000	6.8	3	0.204		0.006				
MO - Winfield Mine	002	G-13	2/9/2008	2000	6.4	3	0.347		<0.006				
MO - Winfield Mine	002	G-13	2/9/2008	2000	6.4	3	0.347		0.006				
MO - Winfield Mine	003	G-7	2/16/2008	3000	7		0.146		<0.006				
MO - Winfield Mine	002	G-13	2/16/2008	4000	7.3	16	0.52						
MO - Winfield Mine	003	G-7	2/16/2008	3000	7	1	0.146		0.006				
MO - Winfield Mine	002	G-13	2/16/2008	4000	7.3	16	0.52						
MO - Winfield Mine	003	G-7	3/7/2008	5000	7.2	20	0.851						
MO - Winfield Mine	003	G-7	3/7/2008	5000	7.2	20	0.851						
MO - Winfield Mine	002	G-13	3/7/2008	4000	7.1	6	0.062		0.006		-		
MO - Winfield Mine	003	G-11	3/7/2008	1000	6.9		transfer to the second construction		ĺ		<0.1		
MO - Winfield Mine	003	G-11	3/7/2008	1000	6.9						< 0.1		
MO - Winfield Mine	002	G-13	3/7/2008	4000	7.1	6	0.062		<0.006				
40 - Winfield Mine	002	G-13	3/13/2008	4000	7.9	1	0.073		0.006	i			
ИО - Winfield Mine	002	G-13	3/13/2008	4000	7.9		0.073		<0.006				
AO - Winfield Mine	003	G-11	3/20/2008	500	7					·	< 0.1		
ИО - Winfield Mine	003	G-7	3/20/2008	500	7.5						<0.1		
иO - Winfield Mine	003	G-7	3/20/2008	market market and the contract of the	7.5				ì		< 0.1	<del>-</del>	
иО - Winfield Mine	003	G-11	3/20/2008	500	7				-		<0.1		
AO - Winfield Mine	002	G-13	3/22/2008			5	0.086						
10 - Winfield Mine	002	G-13	3/22/2008			Contract Con	0.086					<del></del>	
10 - Winfield Mine	003	G-7	4/5/2008	the total and the second secon	7.1						< 0.1		

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	l (mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-11	4/5/2008	500	6.6	Ĭ					< 0.1	1	
MO - Winfield Mine	002	G-13	4/5/2008	4000	7.7	4	0.163		<0.006				
MO - Winfield Mine	003	G-7	4/5/2008	2000	7.1						<0.1		
MO - Winfield Mine	002	G-13	4/5/2008	4000	7.7	4	0.163		0.006				
MO - Winfield Mine	003	G-11	4/5/2008	500	6.6						<0.1		
MO - Winfield Mine	003	G-7	4/12/2008	1000	7.1						< 0.1		
MO - Winfield Mine	003	G-11	4/12/2008	1000	6.8	1					< 0.1		
MO - Winfield Mine	002	G-13	4/12/2008	4000	8.1	3	0.259						
MO - Winfield Mine	003	G-7	4/12/2008	1000	7.1						<0.1		
MO - Winfield Mine	002	G-13	4/12/2008	4000	8.1	3	0.259					l i	
MO - Winfield Mine	003	G-11	4/12/2008	1000	6.8						<0.1		
MO - Winfield Mine	003	G-11	4/18/2008	1000	7						< 0.1		
MO - Winfield Mine	003	G-11	4/18/2008	1000	7						<0.1		
MO - Winfield Mine	002	G-13	4/19/2008	4000	8	1	0.21						
MO - Winfield Mine	002	G-13	4/19/2008	4000	8	1	0.21						
MO - Winfield Mine	002	G-13	5/3/2008	4000	7.1	3	0.299		0.006				
MO - Winfield Mine	002	G-13	5/3/2008	4000	7.1	3	0.299		<0.006				
MO - Winfield Mine	002	G-13	5/8/2008	4000	6.6	3	0.274						
MO - Winfield Mine	002	G-13	5/8/2008	4000	6.6	3	0.274						
MO - Winfield Mine	002	G-13	5/16/2008	4000	7.9	11	0.447						
MO - Winfield Mine	003	G-7	5/16/2008	2000	8.1	i					<0.1		
MO - Winfield Mine	002	G-13	5/16/2008	4000	7.9	11	0.447						
MO - Winfield Mine	003	G-11	5/16/2008	1500	7.8						< 0.1		
MO - Winfield Mine	003	G-7	5/16/2008	2000	8.1						< 0.1		
MO - Winfield Mine	003	G-11	5/24/2008	500	7.9						< 0.1		
MO - Winfield Mine	002	G-13	5/24/2008	4000	8.5	1	0.148						
MO - Winfield Mine	002	G-13	5/24/2008	4000	8.5	1	0.148						
MO - Winfield Mine	002	G-13	5/30/2008	2000	8	2	0.137	1					
MO - Winfield Mine	002	G-13	5/30/2008	2000	8	2	0.137						
MO - Winfield Mine	002	G-13	6/14/2008	2000	6.8	1	0.14	-		1			
MO - Winfield Mine	002	G-13	6/14/2008	2000	6.8	1	0.14						
MO - Winfield Mine	003	G-7	6/20/2008	2000	7.9						< 0.1		
MO - Winfield Mine	003	G-11	6/20/2008	500	7.6						< 0.1		
MO - Winfield Mine	003	G-7	6/20/2008	2000	7.9						<0.1		
MO - Winfield Mine	002	G-13	6/21/2008	2000	7.7	2	0.137						
MO - Winfield Mine	002	G-13	6/21/2008	2000	7.7	2	0.137						
MO - Winfield Mine	002	G-13	6/27/2008	2000	7.8	5	0,213						
MO - Winfield Mine	002	G-13	6/27/2008	2000	7.8	5	0.213				-		
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		0.006				
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		<0.006	4	į		

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/i)	Se (mg/l)	(mg/l) Tot	TSM (ml/i)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	9/13/2008	2000	7.3	2	0.062		<0.006				
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202		1		would be the transport of the transport		
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202						
MO - Winfield Mine	003	G-7	9/18/2008	2000	7.6	5	0.202		-				
MO - Winfield Mine	002	G-13	10/16/2008	2000	7.9	7	0.188		0.006				
MO - Winfield Mine	002	G-13	11/7/2008	4000	7	7	0.226		To the same of the control of the same of	Maritim	and a second comment of the second	A. or address reason are in the con-	
MO - Winfield Mine	003	G-7	12/5/2008	1500	7.2	6	0.59		İ				
MO - Winfield Mine	002	G-13	12/12/2008	2000	7.2	1	1.04		0.006		Note of south the state of the		
MO - Winfield Mine	003	G-7	12/19/2008	500	7.1						<0.1		
MO - Winfield Mine	002	G-13	12/29/2008	2000	6.9	5	0.195	1					
MO - Winfield Mine	003	G-7	1/7/2009	1000	8.5						<0.1		
MO - Winfield Mine	002	G-13	1/7/2009	1500	7.8	4	0.183		<0.006		< 0.1		
MO - Winfield Mine	002	G-13	1/7/2009	1500	7.8	4	0.183		0,006		<0.1		
MO - Winfield Mine	003	G-7	1/7/2009	1000	8.5						< 0.1		
MO - Winfield Mine	002	G-13	2/13/2009	2000	7.5	4	0.174		0.006				
MO - Winfield Mine	002	G-13	2/13/2009	2000	7.5	4	0.174		<0.006				
MO - Winfield Mine	002	G-13	3/14/2009	2000	7.1	3	0.121		0.006				
MO - Winfield Mine	003	G-7	3/14/2009	4000	7.2	7	0.235		<0.006				
MO - Winfield Mine	002	G-13	3/14/2009	2000	7.1	3	0.121		<0.006				
MO - Winfield Mine	003	G-7	3/14/2009	4000	7.2	7	0.235		0.006				-
MO - Winfield Mine	002	G-13	3/21/2009	200	6.8	1	0.004						
MO - Winfield Mine	003	G-7	3/21/2009	2000	7.4	4	0.171						
MO - Winfield Mine	003	G-7	3/21/2009	2000	7.4	4	0.171						
MO - Winfield Mine	002	G-13	3/21/2009	200	6.8	1	0.004						
MO - Winfield Mine	003	G-11	3/26/2009	1000	6.5					[-	< 0.1		
MO - Winfield Mine	003	G-11	3/26/2009	1000	6.5						<0.1		
MO - Winfield Mine	002	G-13	3/27/2009	2000	7.3	2	0.015						
MO - Winfield Mine	003	G-7	3/27/2009	3000	7					į.	< 0.1		
MO - Winfield Mine	002	G-13	3/27/2009	2000	7.3	2	0.015						
MO - Winfield Mine	003	G-7	3/27/2009	3000	7						<0.1		
MO - Winfield Mine	003	G-7	4/4/2009	2000	7.5						<0.1		
MO - Winfield Mine	002	G-13	4/17/2009	2000	7	1	0.001		0.006				
MO - Winfield Mine	003	G-7	4/18/2009	10000	7.3			-			<0.1		
MO - Winfield Mine	002	G-13	4/25/2009	2000	5.7	3	0.084		i				
MO - Winfield Mine	003	G-7	4/25/2009	1000	7.9						<0.1		
MO - Winfield Mine	003	G-7	5/1/2009	000	7.6						<0.1		
MO - Winfield Mine	003	G-7	5/6/2009		7.8	i	ĺ				<0.1		
MO - Winfield Mine	003	G-11	5/6/2009		5.5			ì			<0.1		
40 - Winfield Mine	003	G-11	5/15/2009 1	.000	5.8			i			<0.1		
10 - Winfield Mine	003	G-7	5/15/2009	are the second process and the second	7.5	i	1				<0.1		

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FACILITY	OUTFAL	L POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/i)	Se (mg/l)	(mg/l) Tot	TSM (mi/l) TD	OS (mg/l)	Temp
MO - Winfield Mine	003	G-11	5/22/2009	1000	7.3						<0.1		
MO - Winfield Mine	003	G-7	5/22/2009	2500	7.8						<0.1		
MO - Winfield Mine	003	G-7	5/29/2009	2000	7.9						<0.1		
MO - Winfield Mine	003	G-7	6/6/2009	2000	7.7						<0.1		
MO - Winfield Mine	003	G-7	6/12/2009	2000	7.9	)					<0.1	į	
MO - Winfield Mine	003	G-7	6/20/2009	2000	8.1			1			<0.1		
MO - Winfield Mine	003	G-7	6/26/2009	1000	7.9						<0.1		
MO - Winfield Mine	003	G-7	7/18/2009	1000	7.9						< 0.1		
MO - Winfield Mine	002	G-13	7/18/2009	2000	6.7	5	0.055		0.006		)		
MO - Winfield Mine	002	G-13	7/18/2009	2000	6.7	5	0.055		< 0.006			L	
MO - Winfield Mine	003	G-7	7/18/2009	1000	7.9						<0.1		
MO - Winfield Mine	002	G-13	7/25/2009	2000	6.7	10	0.204					i.	
MO - Winfield Mine	002	G-13	7/25/2009	2000	6.7	10	0.204						
MO - Winfield Mine	003	G-7	7/31/2009	2000	7.6						<0.1	1	
MO - Winfield Mine	003	G-11	7/31/2009	500	6.6						<0.1		
MO - Winfield Mine	003	G-7	7/31/2009	2000	7.6						< 0.1		
MO - Winfield Mine	002	G-13	8/1/2009	2500	6.5	4	0.102		< 0.006				
MO - Winfield Mine	002	G-13	8/8/2009	2000	6.8	3	0.043						
MO - Winfield Mine	003	G-7	8/8/2009	200	8						< 0.1		
MO - Winfield Mine	002	G-13	8/15/2009	1500	6.8	3	0.108						
MO - Winfield Mine	003	G-7	8/21/2009	2000	8.1					i	< 0.1		
MO - Winfield Mine	002	G-13	8/29/2009	2000	7.9	3	0.055						
MO - Winfield Mine	003	G-7	8/29/2009	500	7.7					1	< 0.1		
MO - Winfield Mine	003	G-7	9/5/2009	1000	7.4		j				< 0.1		
MO - Winfield Mine	003	G-7	9/11/2009	1000	7.1			]		(	< 0.1		
MO - Winfield Mine	003	G-7	9/19/2009	2000	7	4	0.177		< 0.006				
MO - Winfield Mine	002	G-13	9/19/2009	2000	6.9	10	0.305		< 0.006				
MO - Winfield Mine	003	G-7	9/26/2009	2000	7.2	2	0.258						
MO - Winfield Mine	002	G-13	9/26/2009	2000	7	2	0.176			3			
MO - Winfield Mine	003	G-7	10/3/2009	2000	6.9	4	0.227					}	
MO - Winfield Mine	003	G-7	10/3/2009	2000	6.9	4	0.227						
MO - Winfield Mine	002	G-13	10/10/2009	4000	7.3	8	0.288		0.04				
MO - Winfield Mine	003	G-7	10/10/2009	3000	6.5	4	0.171						
MO - Winfield Mine	002	G-13	10/10/2009	4000	7.3	8	0.288		< 0.04				
MO - Winfield Mine	003	G-7	10/10/2009	3000	6.5	4	0.171						
MO - Winfield Mine	003	G-7	10/17/2009	6000	7.2	6	0.16						
MO - Winfield Mine	002	G-13	10/17/2009	4000	7	1	0.025						
MO - Winfield Mine	003	G-7	10/17/2009	6000	7.2	6	0.16						
MO - Winfield Mine	002	G-13	10/17/2009	4000	7	1	< 0.025						
MO - Winfield Mine	002	G-13	10/24/2009	4000	7.2	3	< 0.025						

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	10/24/2009	6000	6.6	14	0.231					
MO - Winfield Mine	002	G-13	10/24/2009	4000	7.2	3	0.025					
MO - Winfield Mine	003	G-7	10/24/2009	6000	6.6	14	0.231					
MO - Winfield Mine	002	G-13	10/31/2009	4000	7.1	3	0.238		***	and the same of th		
MO - Winfield Mine	002	G-13	10/31/2009	4000	7.1	3	0.238					
MO - Winfield Mine	003	G-7	10/31/2009	4000	6.9	4	0.422					
MO - Winfield Mine	003	G-7	10/31/2009	4000	6.9	4	0.422					-
MO - Winfield Mine	002	G-13	11/7/2009	4000	7	11	0.289		0.02			
MO - Winfield Mine	003	G-7	11/7/2009	4000	6.9	4	0.138					
MO - Winfield Mine	002	G-13	11/7/2009	4000	7	11	0.289		< 0.02			
MO - Winfield Mine	003	G-7	11/7/2009	4000	6.9	4	0.138					
MO - Winfield Mine	002	G-13	11/14/2009	4000	7.2	11	0.345					
MO - Winfield Mine	003	G-7	11/14/2009	3000	7.3	10	0.233					
MO - Winfield Mine	003	G-7	11/14/2009	3000	7.3	10	0.233					
MO - Winfield Mine	002	G-13	11/14/2009	4000	7.2	11	0.345					
MO - Winfield Mine	002	G-13	11/21/2009	4000	6.9	1	0.156					
MO - Winfield Mine	003	G-7	11/21/2009	3000	6.6	5	0.24			i i		
MO - Winfield Mine	002	G-13	11/21/2009	4000	6.9	1	0.156					
MO - Winfield Mine	003	G-7	11/21/2009	3000	6.6	5	0.24					
MO - Winfield Mine	002	G-13	11/28/2009	2000	6.5	12	0.523					
MO - Winfield Mine	003	G-7	11/28/2009	3000	6.7	7	0.474					
MO - Winfield Mine	003	G-7	11/28/2009	3000	6.7	7	0.474					
MO - Winfield Mine	002	G-13	11/28/2009	2000	6.5	12	0.523					
MO - Winfield Mine	002	G-13	12/5/2009	3500	6.8	5	0.453		0.02			
MO - Winfield Mine	002	G-13	12/5/2009	3500	6.8	5	0.453		< 0.02			
MO - Winfield Mine	003	G-7	12/5/2009	3000	6.9	14	0.322		< 0.02		1	
MO - Winfield Mine	003	G-7	12/5/2009	3000	6.9	14	0.322		0.02			
MO - Winfield Mine	003	G-7	12/5/2009	4000	5.9	14	0.322	ĺ	< 0.020			
MO - Winfield Mine	003	G-7	12/12/2009	3000	7.3	5	0.19	-	ĺ			
MO - Winfield Mine	003	G-7	12/12/2009	3000	5,6	5	0.19	)	-			
MO - Winfield Mine	003	G-7	12/12/2009	3000	5.6	5	0.19	j				
MO - Winfield Mine	003	G-7	12/18/2009	3000	7.2	15	0.152	li	0.02			
MO - Winfield Mine	002	G-13	12/18/2009	2000	7.3	7	0.101					
MO - Winfield Mine	002	G-13	12/18/2009	2000	7.3	7	0.101	-				
MO - Winfield Mine	003	G-7	12/18/2009	3000	5.6	15	0.152		< 0.020			
MO - Winfield Mine	003	G-7	12/18/2009	3000	7.2	15	0.152		< 0.02			
MO - Winfield Mine	003	G-11	12/24/2009	1200	5.8					< 0.1		
MO - Winfield Mine	003	G-7	12/26/2009	3000	5.9	7	0.209					
MO - Winfield Mine	002	G-13	12/26/2009	2000	5.8	9	0.309					
MO - Winfield Mine	003	G-7	12/26/2009	1000	5.7	7	0.209					

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	12/26/2009	2000	6.8	9	0.309	Ì					
MO - Winfield Mine	003	G-7	12/26/2009	3000	6.9	7	0.209						
MO - Winfield Mine	003	G-7	1/2/2010	2000	7.3	7	0.494		0.02				
MO - Winfield Mine	003	G-7	1/2/2010	2000	7.3	7	0.494		< 0.020				
MO - Winfield Mine	003	G-11	1/2/2010	1000	6.9						< 0.1	i	
MO - Winfield Mine	003	G-7	1/8/2010	100	7		1	1			<0.1	1	
MO - Winfield Mine	003	G-7	1/8/2010	100	7			1			< 0.1	1	
MO - Winfield Mine	003	G-7	1/15/2010	50	6.8						< 0.1		
MO - Winfield Mine	003	G-7	1/15/2010	50	6.8						<0.1		
MO - Winfield Mine	003	G-7	1/23/2010	25	7						< 0.1		
MO - Winfield Mine	003	G-7	1/30/2010	500	6.8						<0.1		
MO - Winfield Mine	002	G-13	1/30/2010	4000	6.5	7	0.156		0.02				
MO - Winfield Mine	002	G-13	1/30/2010	4000	6.5	7	0.156		< 0.020				
MO - Winfield Mine	003	G-7	1/30/2010	500	6.8			-			< 0.1		
MO - Winfield Mine	003	G-7	2/5/2010	1500	7.1			diam's			<0.1		
MO - Winfield Mine	003	G-11	2/5/2010	1500	7						< 0.1		
MO - Winfield Mine	003	G-7	2/5/2010	1500	7.1						< 0.1		
MO - Winfield Mine	002	G-13	2/6/2010	4000	7	8	0.125		0.02				
MO - Winfield Mine	002	G-13	2/6/2010	4000	7	8	0.125		< 0.020				
MO - Winfield Mine	003	G-11	2/12/2010	1500	7			-			< 0.1		
MO - Winfield Mine	002	G-13	2/12/2010	4000	6.7	7	0.036						
MO - Winfield Mine	003	G-7	2/12/2010	500	6.8						< 0.1		
MO - Winfield Mine	003	G-7	2/12/2010	500	6.8			1			<0.1		
MO - Winfield Mine	002	G-13	2/12/2010	4000	6.7	7	0.036		1				
MO - Winfield Mine	003	G-11	2/20/2010	1000	7				}		< 0.1		
MO - Winfield Mine	002	G-13	2/20/2010	2000	6.9	8	0.163						
MO - Winfield Mine	003	G-7	2/20/2010	100	7	1					< 0.1		
MO - Winfield Mine	003	G-7	2/20/2010	100	7						<0.1		
MO - Winfield Mine	002	G-13	2/20/2010	2000	6.9	8	0.163	1					
MO - Winfield Mine	002	G-13	2/27/2010	2000	6.8	9	0.161						
MO - Winfield Mine	002	G-13	2/27/2010	2000	6.8	9	0.161						
MO - Winfield Mine	003	G-7	2/27/2010	25	7						< 0.1		
MO - Winfield Mine	003	G-7	2/27/2010	Ç444,	7	İ					<0.1		
MO - Winfield Mine	003	G-7	3/6/2010	Carrie or the second se	7.1				Temperarin Astronomical Company		< 0.1		
MO - Winfield Mine	003	G-7	3/6/2010	50	7.1	1	-		1		<0.1		
MO - Winfield Mine	003	G-7	3/13/2010	2000	6.5	6	0.07						
MO - Winfield Mine	003	G-11	3/13/2010	1000	7	1	1			İ	< 0.1		
MO - Winfield Mine	003	G-7	3/13/2010	2000	6.5	6	0.07				<u> </u>		
MO - Winfield Mine	003	G-11	3/20/2010	1000	7.1					{	< 0.1		
MO - Winfield Mine	003	G-7	3/20/2010	4000	6.7	8	0.358						

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FACILITY MO - Winfield Mine	OUTFALL 003	G-7		LOW (gpm				Mn (mg/l)	Se (mg/l)	(mg/i) Tot	TSM (ml/i)	TDS (mg/l)	Temp
MO - Winfield Mine			3/20/2010		6.7	8	0.358						
The second server consists and the second se	003	G-7	3/27/2010		7.2	3	0.335	Contractor of the second	0.02				
MO - Winfield Mine	003	G-7	3/27/2010	market product order and the second	7.2	3	0.335	-	< 0.02				
	002	G-13	3/27/2010		6.7	2	0.301		< 0.02				
MO - Winfield Mine MO - Winfield Mine	002	G-13	3/27/2010		6.7	2	0.301		0.02				
	003	G-11	3/27/2010		7.1						< 0.1		
MO - Winfield Mine	003	G-7	4/3/2010		6.8		0.376						
MO - Winfield Mine	003	G-7	4/3/2010		6.8	3	0.376						
MO - Winfield Mine	003	G-7	4/10/2010		7.2						< 0.1		
MO - Winfield Mine	003	G-7	4/10/2010		7.2	ļ					< 0.1		
MO - Winfield Mine	003	G-7	4/10/2010		7.2						<0.1		
MO - Winfield Mine	003	G-7	4/24/2010		6.9						< 0.1		
MO - Winfield Mine	003	G-7	4/24/2010		6.9						<0.1		
MO - Winfield Mine	002	G-13	5/22/2010		6.8		0.707		0.02				
MO - Winfield Mine	002	G-13	5/22/2010		6.8	The state of the s	0.707		< 0.020				
MO - Winfield Mine	002	G-13	5/28/2010		7		0.601						
MO - Winfield Mine	002	G-13	5/28/2010		7	4	0.601						
MO - Winfield Mine	003	G-7	6/12/2010		6.9						< 0.1		
MO - Winfield Mine	002	G-13	6/12/2010				0.162		< 0.02				
MO - Winfield Mine	And the second second	G-13	6/12/2010		7	5	0.162		0.02				
MO - Winfield Mine		G-7	6/12/2010		6.9						<0.1		
MO - Winfield Mine		G-13	6/19/2010		5.6	-	0.144	-					
MO - Winfield Mine		G-13	6/19/2010		· · · · · · · · · · · · · · · · · · ·	]	0.144						
MO - Winfield Mine	002	G-13	6/25/2010 2		5.8		0.82						
MO - Winfield Mine		G-13	6/25/2010 2		5,8		0.82						
MO - Winfield Mine		G-13	7/2/2010 2				0.163		< 0.010				
MO - Winfield Mine		G-13	7/2/2010 2		-		0.163		0.001				
MO - Winfield Mine		G-7	7/10/2010 2				0.181		0.01				
MO - Winfield Mine	-	G-7	7/10/2010 2	· · · · · · · · · · · · · · · · · · ·			0.181		< 0.010				
MO - Winfield Mine		G-13	7/10/2010 2				0.21						
MO - Winfield Mine		G-13	7/10/2010 2				0.21						
MO - Winfield Mine		G-7	7/16/2010 2		or an agency programmer		).157						
MO - Winfield Mine		G-13	7/16/2010 2				).155						
MO - Winfield Mine		G-13	7/16/2010 2	and the second section of the			).155						
MO - Winfield Mine		G-7	7/16/2010 2				).157						
MO - Winfield Mine	-	G-13	9/24/2010 1				0.084		0.010				
40 - Winfield Mine		G-13	9/24/2010 1		with the second that the second of		.084		.01				
40 - Winfield Mine	- [	G-13	12/10/2010 2				.076		.01				
10 - Winfield Mine		G-13	12/10/2010 2	ramanarramana ana 🖟 n. n.			.076	<	0.010				
10 - Winfield Mine	002	G-13	12/18/2010 2	000 6	.7	2 (	.466	0	.01		7-1		

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
AO - Winfield Mine	002	G-13	12/18/2010		6.7	2	0.466		< 0.010				
10 - Winfield Mine	002	G-13	1/22/2011	2000	6.3	6	0.086		0.01				
10 - Winfield Mine	002	G-13	1/22/2011		6.3	6	0.086		< 0.010				
10 - Winfield Mine	002	G-13	2/19/2011	2500	6.4	2	0.092		0.018				
10 - Winfield Mine	002	G-13	2/19/2011	2500	6.4	2	0.092		0.018				
10 - Winfield Mine	002	G-13	2/26/2011	500	6.5	11	0.338			i			
иО - Winfield Mine	002	G-13	2/26/2011	500	6.5	11	0.338		,				
40 - Winfield Mine	002	G-13	3/5/2011	1000	6.7	5	0.093		0.01				
0 - Winfield Mine	002	G-13	3/5/2011	1000	6.7	5	0.093		< 0.010		]		
AO - Winfield Mine	002	G-13	4/22/2011	1000	6.4	2	0.52		< 0.010		1		
40 - Winfield Mine	002	G-13	4/22/2011	1000	6.4	2	0.52		0.01		1	ĺ	
ИО - Winfield Mine	002	G-13	4/30/2011	1500	6.4	1	0.216				1		
40 - Winfield Mine	002	G-13	4/30/2011	1500	6.4	1	0.216						
MO - Winfield Mine	003	G-13	5/6/2011	1000	6.4	8	0.054	< 0.010					
AO - Winfield Mine	002	G-13	5/6/2011	1000	6.4	8	0.054		0.01				
иО - Winfield Mine	002	G-13	12/1/2011	1000	6.8	1	0.092		< 0.010				
10 - Winfield Mine	002	G-13	12/19/2011		6.8	1	0.092		<0.010				
MO - Winfield Mine	002	G-13	1/5/2012	500	6.6	4	0.131		0.016				
MO - Winfield Mine	002	G-13	1/14/2012	500	6.7	2	0.07						
MO - Winfield Mine	002	G-13	1/20/2012	1000	6.8	3	0.082						
40 - Winfield Mine	002	G-13	1/28/2012	1500	6.9	3	0.07						
MO - Winfield Mine	002	G-13	2/4/2012	500	6.6	4	0.112		0.011				
MO - Winfield Mine	003	G-7	2/10/2012	100	6.6						< 0.1		
MO - Winfield Mine	002	G-13	2/11/2012	500	6.7	7	0.1.15				}		
MO - Winfield Mine	003	G-7	2/18/2012	200	6.9						< 0.1		
MO - Winfield Mine	002	G-13	2/18/2012	1000	6.8	8	0.409						
MO - Winfield Mine	003	G-7	2/25/2012	200	7.1				Ì		< 0.1		
MO - Winfield Mine	002	G-13	2/25/2012	1500	6.9	< 1	0.048						
MO - Winfield Mine	003	G-7	3/1/2012	50	7.3			4	1		< 0.1		
MO - Winfield Mine	003	G-7	3/2/2012	200	7.2			ĺ			< 0.1		
MO - Winfield Mine	003	G-7	3/17/2012	1000	7						< 0.1		
MO - Winfield Mine	003	G-11	3/17/2012	1200	6.6			į			< 0.1		
MO - Winfield Mine	002	G-13	3/17/2012	1000	6.7						< 0.1		
MO - Winfield Mine	002	G-13	3/27/2012	1500	6.8	1					< 0.1		
MO - Winfield Mine	003	G-7	3/29/2012	1000	7.2						< 0.1		
MO - Winfield Mine	003	G-11	3/29/2012	1500	7.1						< 0.1		
40 - Winfield Mine	002	G-13	3/31/2012	1500	6.5						< 0.1		
MO - Winfield Mine	003	G-7	3/31/2012	100	7	1		Ī			< 0.1		
MO - Winfield Mine	003	G-7	4/6/2012	1000	6.9		1	1			< 0.1		
MO - Winfield Mine	002	G-13	4/7/2013	1500	6.5	5	0.179		< 0.010				

FACILITY	OUTFALI	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot TSM (m	/ ) TDS (mg/l)	Temp
MO - Winfield Mine	003	G-7	4/13/2012	50	6.8		İ			< 0.1		
MO - Winfield Mine	002	G-13	4/14/2012	1000	6.7	3	0.038					
MO - Winfield Mine	003	G-7	5/11/2012	100	7					< 0.1		
MO - Winfield Mine	002	G-13	5/12/2012	1000	6.9	6	0.794		0.013			
MO - Winfield Mine	003	G-11	6/15/2012	1000	7.1					< 0.1	i	
MO - Winfield Mine	002	G-13	7/1/2012	1500	7.7	4	0.194		0.013			
MO - Winfield Mine	002	G-13	8/25/2012	1000	6.5	[2	0.094		< 0.010			
MO - Winfield Mine	003	G-11	9/8/2012	1000	6.7					< 0.1		
MO - Winfield Mine	002	G-13	9/29/2012	1000	6.8	2	0.247		< 0.010			
MO - Winfield Mine	002	G-13	11/17/2012	1000	7	2	0.17		< 0.010			
MO - Winfield Mine	002	G-13	1/5/2013	1500	6.9	3	0.579		< 0.010			
MO - Winfield Mine	002	G-13	1/12/2013	1500	6.5	13	0.637					
MO - Winfield Mine	002	G-13	1/18/2013	1000	6.8	4	0.452					
MO - Winfield Mine	002	G-13	2/16/2013	2000	6.6	2	0.03		< 0.010			
MO - Winfield Mine	002	G-13	4/5/2013	1000	7.7	4	0.236		< 0.010			
MO - Winfield Mine	002	G-13	6/7/2013	1000	7.3	16	3		< 0.010			
MO - Winfield Mine	003	G-7	6/14/2013	1000	7.6					< 0.1		
MO - Winfield Mine	002	G-13	6/15/2013	1000	7.2	6	0.212					
MO - Winfield Mine	003	G-7	9/20/2013	2000	8					< 0.1		
MO - Winfield Mine	003	G-7	9/27/2013	50	6.9					< 0.1		
MO - Winfield Mine	003	G-7	10/18/2013	100	6.3					< 0.1		
6				NO DISCHARG								
MO - Winfield Mine	003	G-11	11/1/2013									
MO - Winfield Mine	003	G-7	11/8/2013	NO. TO STREET, NAME OF STREET, NAME OF STREET, NAME OF STREET, NAME OF STREET, NAME OF STREET, NAME OF STREET,	7.8					< 0.1		
MO - Winfield Mine	002	G-13	11/9/2013	THE WAS DESIGNATED THE PARTY OF A	7.2	3.1	0.1		< 0.010			
MO - Winfield Mine	003	G-7	11/15/2013	***************************************	7.5					< 0.1		
MO - Winfield Mine	002	G-13	11/23/2013	**************************************		1.4	0.08					
MO - Winfield Mine		G-7	11/23/2013		7.3	ļ				< 0.1		
MO - Winfield Mine	003	G-7	11/29/2013		7.4					< 0.1		
MO - Winfield Mine	002	G-13	11/30/2013	and the second s		4	0.156		< 0.010			
MO - Winfield Mine	003	G-11	12/6/2013		8.2				<del>-</del>	< 0.1		
MO - Winfield Mine	003	G-7	12/6/2013		7.3	- F				< 0.1		
MO - Winfield Mine	002	G-13	12/7/2013		- hard or a halomagness arranged a construct and	2.5	0.133		< 0.010			
MO - Winfield Mine		G-11	12/13/2013		7.9					< 0.1		
MO - Winfield Mine	003	G-7	12/13/2013		7					< 0.1		
MO - Winfield Mine	002	G-13	12/14/2013			2.8	0.148					
MO - Winfield Mine		G-7	12/20/2013		6.8					< 0.1		
MO - Winfield Mine		G-11	12/20/2013		6.7					< 0.1	_	
MO - Winfield Mine	002	G-13	12/21/2013	2000	7.5	4.4	0.105					

FACILITY	OUTFALL	POND	DATE L	OW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/i)	Se (mg/l)	(mg/l) Tot	TSM (mi/l) TDS	mg/l)	Temp
MO - Winfield Mine	003	G-7	12/27/2013 10	00	7			i			< 0.1		
MO - Winfield Mine	003	G-11	12/27/2013 10	00	6.9						< 0.1	1	
MO - Winfield Mine	002	G-13	12/28/2013 15	500	7.4	2	0.105						
MO - Winfield Mine	003	G-7	1/3/2014 50	)	7.1						< 0.1		
MO - Winfield Mine	003	G-11	1/3/2014 20	)	7						< 0.1	1	
MO - Winfield Mine	002	G-13	1/11/2014 10	000	7.2	3.2	0.264		< 0.010				
MO - Winfield Mine	003	G-7	1/17/2014 10	000	7.3			}			< 0.1	L	
MO - Winfield Mine	003	G-11	1/17/2014 50	0	7.2			1			< 0.1		
MO - Winfield Mine	002	G-13	1/18/2014 10	000	7.6	3.4	0.114						
MO - Winfield Mine	002	G-13	2/1/2014 10	000	7.1	5.2	0.103			1			_
MO - Winfield Mine	003	G-11	2/7/2014 10	00	7.2		i				< 0.1		
MO - Winfield Mine	003	G-7	2/7/2014 10	000	7.5					ŀ	< 0.1		
MO - Winfield Mine	002	G-13	2/14/2014 10	000	6.8	25	0.271						
MO - Winfield Mine	003	G-11	2/14/2014 10	00	7						< 0.1		
MO - Winfield Mine	003	G-7	2/14/2014 50	00	7.7			<u> </u>			< 0.1		
MO - Winfield Mine	003	G-7	2/21/2014 10	00	7.9		-				< 0.1		
MO - Winfield Mine	002	G-13	2/22/2014 10	000	7	3.8	0.178						
MO - Winfield Mine	003	G-7	3/7/2014 50	00	7.3						< 0.1		
MO - Winfield Mine	003	G-11	3/7/2014 20	D	7.4						< 0.1		
MO - Winfield Mine	002	G-13	3/8/2014 10	000	7.5	5	0.128		< 0.010	1	•	į	
MO - Winfield Mine	003	G-11	3/14/2014 20	0	7.6					].	< 0.1	Ĺ	
MO - Winfield Mine	002	G-13	3/15/2014 10	000	7	6	0.236					į	
MO - Winfield Mine	003	G-11	3/21/2014 20	D	7.9						< 0.1		
MO - Winfield Mine	003	G-7	3/21/2014 50	00	7.8						< 0.1		
MO - Winfield Mine	002	G-13	3/22/2014 1	500	8.1	11	0.14						
MO - Winfield Mine	003	G-7	3/28/2014 10	00	7.9						< 0.1	1	
MO - Winfield Mine	003	G-11	3/28/2014 20	0	8.1						< 0.1		
MO - Winfield Mine	003	G-11	4/11/2014 50	0	7.6						< 0.1	L	
MO - Winfield Mine	003	G-7	4/11/2014 20	000	7.9						< 0.1		
MO - Winfield Mine	002	G-13	4/12/2014 1,	,000	8	4.5	0.144		< 0.010				
MO - Winfield Mine	003	G-11	4/17/2014 2	5	7.8		-				< 0.1		
MO - Winfield Mine	003	G-7	4/17/2014 10	00	8.2						< 0.1		
MO - Winfield Mine	002	G-13	4/18/2014 1,	,000	8.4	5.2	0.193						
MO - Winfield Mine	003	G-11	5/9/2014 20	0	7.4						< 0.1		
MO - Winfield Mine	003	G-7	5/9/2014 50	00	8	1					< 0.1		
MO - Winfield Mine	003	G-11	5/16/2014 20	00	7		Ì				< 0.1		
MO - Winfield Mine	003	G-7	5/16/2014 20	000	7.9	1					< 0.1		
MO - Winfield Mine	002	G-13	5/17/2014 1,	,000	8.1	3	0.192						
MO - Winfield Mine	003	G-7	5/23/2014 50	0	8.1						< 0.1		
MO - Winfield Mine	003	G-11	5/23/2014 20	0	7.5		İ				< 0.1		

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/i)	Se (mg/l)	(mg/l) Tot	TSM (mi/l)	TDS (mg/l)	Temp
MO - Winfield Mine	002	G-13	5/23/2014	1,000	7.6	2	0.109		0.015		i		
MO - Winfield Mine	002	G-13	5/30/2014	1,000	8	1.7	0.086	-					
MO - Winfield Mine	003	G-7	6/1/2014	No Flow									
MO - Winfield Mine	003	G-11	6/1/2014	No Flow			***************************************					li	
MO - Winfield Mine	002	G-13	6/13/2014	1,000	8.1	5.2	0.097		0.012				
MO - Winfield Mine	002	G-13	6/19/2014	1,000	7.6	2.2	0.121		THE STREET AND LOCATION ASSESSED.	V 104 mar 440 111 100 111 111 111 111 111 111 111			
MO - Winfield Mine	002	G-13	7/1/2014	No Flow									
MO - Winfield Mine	003	G-7	7/1/2014	No Flow									
MO - Winfield Mine	003	G-11	7/1/2014	No Flow									
MO - Winfield Mine	002	G-13	8/1/2014	No Flow				1					
MO - Winfield Mine	003	G-7	8/1/2014	No Flow									
MO - Winfield Mine	003	G-11	8/1/2014	No Flow				1					
MO - Winfield Mine	002	G-13	9/1/2014	No Flow									
MO - Winfield Mine	003	G-11	9/1/2014	No Flow									
MO - Winfield Mine	003	G-7	9/1/2014	No Flow					Control Contro				
MO - Winfield Mine	002	G-13	10/1/2014	No Flow							~		
MO - Winfield Mine	002	G-13	11/1/2014	No Flow									
MO - Winfield Mine	003	G-7	11/1/2014	No Flow									
MO - Winfield Mine	003	G-11	11/1/2014	No Flow									
Monticello Winfield	003	G-11	1/9/2015	100	7.1						< 0.1		
Monticello Winfield	003	G-7	1/9/2015	2000	7.3						< 0.1		
Monticello Winfield	002	G-13	1/17/2015	1000	7.4						< 0.1		
Monticello Winfield	003	G-7	1/17/2015	100	7.2						< 0.1		
Monticello Winfield	002	G-13	1/20/2015	1000	7						< 0.1		
Monticello Winfield	002	G-13	1/23/2015	1000	7						< 0.1		
Monticello Winfield	003	G-7	1/30/2015	50	7.1						< 0.1		
Monticello Winfield		G-13	2/14/2015	1000	7.1						<0.1		
Monticello Winfield		G-11	2/27/2015	200	6,8						<0.1		
Monticello Winfield		G-11	2/27/2015	200	6.8					1	<0.1		
Monticello Winfield		G-13	2/27/2015	1000	7.6						<0.1	1	
Monticello Winfield		G-13	2/27/2015	1000	7.6						<0.1		Charles and the same of the same
Monticello Winfield		G-7	2/27/2015	1000	5.7						<0.1		
Aonticello Winfield		G-7	2/27/2015	1000	5.7			-			<0.1		
Aonticello Winfield		G-11	3/6/2015	100	5.9						<0.1		-
nonticello Winfield		G-11	3/6/2015	100	5.9	i					<0.1		
nonticello Winfield		G-13	3/6/2015	1000	7.2						:0.1		
Monticello Winfield		G-13	3/6/2015 1		7.2	- i					:0.1		
nonticello Winfield		G-7	3/6/2015 1	000	5.9			*********			0.1		
Ionticello Winfield		G-7	3/6/2015 1	.000	5.9	· · · · · · · · · · · · · · · · · · ·					0.1		
Ionticello Winfield	i i	G-11	3/13/2015 1		7.0						0.1		

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield		G-11	3/13/2015	1000	7.0		1			<0.1		
Monticello Winfield	-	G-13	3/13/2015	1500	7.0					<0.1		
Monticello Winfield		G-13	3/13/2015	1500	7.0					<0.1		
Monticello Winfield		G-7	3/13/2015	6000	7.1					<0.1		
Monticello Winfield		G-7	3/13/2015	6000	7.1					<0.1		
Monticello Winfield		G-11	3/20/2015	1000	7.1					<0.1		
Monticello Winfield		G-11	3/20/2015	1000	7.1					<0.1		
Monticello Winfield		G-13	3/20/2015	1500	7.2	İ				<0.1		
Monticello Winfield		G-13	3/20/2015	1500	7.2	al constant				<0.1		
Monticello Winfield		G-11	3/27/2015	200	6.9					<0.1		
Monticello Winfield		G-11	3/27/2015	200	6.9					<0.1		
Monticello Winfield	002	G-13	3/27/2015	1500	7.1	1	) 2 1			<0.1		
Monticello Winfield	002	G-13	3/27/2015	1500	7.1		)			<0.1		
Monticello Winfield	003	G-7	3/27/2015	1000	7.0					<0.1	1	
Monticello Winfield		G-7	3/27/2015	1000	7.0					<0.1		
Monticello Winfield		G-11	4/3/2015	50	7.0					<0.1		
Monticello Winfield		G-13	4/3/2015	1500	7.0					<0.1		
Monticello Winfield		G-7	4/3/2015	500	6.9					<0.1		
Monticello Winfield	1	G-7	4/10/2015	1000	7.6					<0.1	}	
Monticello Winfield		G-13	4/11/2015	1000	7.2					<0.1		
Monticello Winfield		G-11	4/17/2019	50	7.0					<0.1		-
Monticello Winfield		G-13	4/17/2015	1000	7.4					<0.1	}	
Monticello Winfield		G-7	4/17/2015	1000	7.6					<0.1		<u> </u>
Monticello Winfield		G-11	4/24/2015	100	7.4					<0.1		<u></u>
Monticello Winfield		G-7	4/24/2015	2000	7.7					<0.1		1
Monticello Winfield		G-13	4/25/2015	1000	7.4					<0.1		
Monticello Winfield		G-11	5/1/2019	20	6.9					<0.1		19
Monticello Winfield		G-13	5/1/2015	1000	7.6					<0.1		19
Monticello Winfield		G-7	5/1/2019	1000	7.2	i			1	<0.1		20
Monticello Winfield		G-7	5/8/2015	500	7.4					<0.1		21
Monticello Winfield		G-11	5/15/2015	1000	6.9	}		1		<0.1	54	23
Monticello Winfield		G-13	5/15/2019	1000	7.3					<0.1	70	23
Monticello Winfield		G-7	5/15/2015	4000	7.2					<0.1	196	23
Monticello Winfield		G-11	5/22/2019	1000	7.2					<0.1		24
Monticello Winfield		G-13	5/22/2015	1000	7.0					<0.1		24
Monticello Winfield	İ	G-7	5/22/2015	2000	7.1					<0.1		24
Monticello Winfield		G-11	5/29/2015	500	7.4			2		<0.1		24
Monticello Winfield		G-7	5/29/201!	2000	7.3				}	<0.1		24
Monticello Winfield		G-13	5/30/201	1500	7.5				]	<0.1		23
Monticello Winfield		G-11	6/5/201	100	7.7		İ			<0.1	-	

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l	TDS (mg/l)	Temp
Aonticello Winfield		G-13	6/5/2015	1000	7.7						<0.1		
nonticello Winfield		G-7	6/5/2015	500	7.1						<0.1		
Nonticello Winfield		G-11	6/19/2015	200	7.3		Vindage and the second				<0.1		
Ionticello Winfield		G-7	6/19/2015	1000	7.9					, ar Maddan Marada annibiditi atti biladi admara	<0.1		
Ionticello Winfield	}	G-13	6/20/2015	1000	7.9						<0.1		
1onticello Winfield		G-11	6/26/2015	25	7.5			da como es melaborar a anta a como a como esta			<0.1		
Ionticello Winfield		G-7	6/26/2015	100	7.8						<0.1		
onticello Winfield		G-11	9/30/2015	No Flow	j					*****************			
Ionticello Winfield		G-13	9/30/2015	No Flow	10.7 Martin 10.0 M								
Ionticello Winfield		G-7	9/30/2015	No Flow									
Ionticello Winfield		G-13	10/24/2015	1000	7.1						<0.1	70	20
Ionticello Winfield		G-11	10/31/2015	500	7.2						<0.1		20
Ionticello Winfield		G-13	10/31/2015	1000	6.9						<0.1		19
Ionticello Winfield		G-7	10/31/2015	10000	7.2						<0.1		21
Ionticello Winfield		G-11	11/6/2015	400	7.0						<0.1		
Ionticello Winfield		G-13	11/6/2015	1500	7.1						<0.1		***************************************
Ionticello Winfield		G-7	11/6/2015	4000	7.4						<0.1		
Ionticello Winfield		G-11	11/14/2015	200	7.2						<0.1		
onticello Winfield		G-13	11/14/2015	1000	7.2						<0.1		
onticello Winfield		G-7	11/14/2015	1000	7.5						<0.1		
onticello Winfield		G-11	11/20/2015	2000	7.3						<0.1		
onticello Winfield		G-13	11/20/2015	1000	7.0						<0.1		
onticello Winfield	1	G-7	11/20/2015	1000	7.0						<0.1		
onticello Winfield		G-11	11/27/2015	2000	7.0						<0.1		
onticello Winfield	(	G-13	11/27/2015	1500	7.4						<0.1		
onticello Winfield	(	G-7	11/27/2015	10000	7.3			-			<0.1		
onticello Winfield		G-11	12/4/2015	500	7.6					·	<0.1		
onticello Winfield	(	G-13	12/4/2015	1000	7.6				1		<0.1		
onticello Winfield	(	3-7	12/4/2015	1000	7.2						<0.1		
onticello Winfield	(	3-11	12/11/2015	200	7.8						<0.1		
onticello Winfield	(	3-13	12/11/2015	1000	7.9		i				<0.1		
onticello Winfield	(	G-7	12/11/2015	500	7.6						<0.1		
onticello Winfield	0	5-11	12/18/2015	500	7.8			-			<0.1		
onticello Winfield	0	G-7	12/18/2015	1000	7.9	-					<0.1		WITT
onticello Winfield	0	G-11	12/23/2015	500	7.5						<0.1		
onticello Winfield	0	6-7	12/23/2015	1000	7.5						<0.1		
onticello Winfield		5-11	12/31/2015	2000	7.0			i	1		<0.1		
onticello Winfield	(6	6-7	12/31/2015 1	10000	7.1					•	<0.1		
onticello Winfield	103	G-11	1/8/2016 1	1000	5.9			ì			<0.1		
onticello Winfield	003 G	i-7	1/8/2016 1	.000	7.3		-	-		1	:0.1	1	

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FACILITY	OUTFALL	POND	DATE	FLOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	(mg/l) Tot	TSM (ml/l)	TDS (mg/l)	Temp
Monticello Winfield	103	G-11	1/15/2016	200	7.4			ĺ			<0.1	184	12
Monticello Winfield	003	G-7	1/15/2016	500	7.2						<0.1	132	11
Monticello Winfield	103	G-11	1/22/2016	100	7.2						<0.1		1
Monticello Winfield	003	G-7	1/22/2016	500	7.0			<u> </u>			<0.1	1	
Monticello Winfield	103	G-11	1/29/2016	50	7.1						<0.1		
Monticello Winfield	003	G-7	1/29/2016	100	7.5						<0.1		
Monticello Winfield	003	G-11	2/5/2016	50	7.0						<0.1		1
Monticello Winfield	002	G-13	2/6/2016	1000	7.4						<0.1	86	11
Monticello Winfield	003	G-11	2/12/2016	50	7.5						<0.1		
Monticello Winfield	003	G-11	2/19/2016	100	7.3						<0.1		
Monticello Winfield	003	G-7	2/19/2016	1000	7.1						<0.1		
Monticello Winfield	003	G-11	2/26/2016	200	7.0						<0.1		1
Monticello Winfield	003	G-7	2/26/2016	2000	7.4						<0.1		
Monticello Winfield		G-11	3/4/2016	100	7.6						<0.1		
Monticello Winfield		G-7	3/4/2016	500	7.7						<0.1		
Monticello Winfield		G-11	3/11/2016	9000	7.9			1			<0.1		
Monticello Winfield		G-13	3/11/2016	1000	7.9						<0.1		1
Monticello Winfield		G-7	3/11/2016	20000	7.6		1				<0.1		
Monticello Winfield		G-11	3/18/2016	200	7.8						<0.1	<u>)</u>	
Monticello Winfield		G-7	3/18/2016	500	7.1						<0.1		
Monticello Winfield		G-11	3/25/2016	100	7.7						<0.1		
Monticello Winfield		G-7	3/25/2016	500	7.4						<0.1		
Monticello Winfield		G-11	4/1/2016	200	7.4						<0.1		18
Monticello Winfield		G-7	4/1/2016	2000	7.8						<0.1	<u> </u>	19
Monticello Winfield		G-11	4/8/2016	100	7.8						<0.1		20
Monticello Winfield		G-7	4/8/2016	100	8						<0.1		21
Monticello Winfield		G-11	4/15/2016	100	7.6						<0.1		21
Monticello Winfield		G-7	4/15/2016	100	8.1		1				<0.1		22
Monticello Winfield	103	G-11	4/20/2016	6000	7.6						0.1	86	22
Monticello Winfield	003	G-7	4/20/2016	6000	6.9			,			0.1	128	22
Monticello Winfield		G-11	4/30/2016	10000	7.4		<u> </u>		j L		<0.1		21
Monticello Winfield		G-7	4/30/2016	40000	7						<0.1		20
Monticello Winfield		G-11	5/6/2016	200	7.2				And Michigan Christian Charles		<0.1		21
Monticello Winfield		G-7	5/6/2016	500	6.9						<0.1		21
Monticello Winfield		G-11	5/13/2016	100	7.5						<0.1		21
Monticello Winfield		G-7	5/13/2016	100	7.1				1		<0.1		21
Monticello Winfield		G-11	6/3/2016	25	6.8						<0.1		24
Monticello Winfield		G-7	6/3/2016	100	7.6				i		<0.1	]	25
Monticello Winfield	103	G-11	9/30/2016	No Flow								]	
Monticello Winfield	002	G-13	9/30/2016	No Flow		1	1		2 2		•		Ì

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/i)	Fe (mg/l)	Mn (mg/i)	Se (mg/l)	(mg/i) Tot TSM	(ml/l)	TDS (mg/l	) Ten
Monticello Winfield	003	G-7	9/30/2016	No Flow		1							1
Monticello Winfield	103	G-11	12/29/2016	100	6.90			allow-was so woweness recommon to	rarita saerik ressausariansari	<0.1		90	16
Monticello Winfield	003	G-7	12/30/2016	2000	6.80					<0.1		116	15
Monticello Winfield	003	G-7	1/6/2017	500	7			drive some terror terror and transcention.		<0.1		134	
Monticello Winfield	003	G-7	1/13/2017	100	7.4					<0.1			
Monticello Winfield	103	G-11	1/20/2017	100	6.7					<0.1		166	1
Monticello Winfield	103	G-11	1/27/2017	20	7.1			-		<0.1			1
Monticello Winfield	003	G-7	1/27/2017	500	7					<0.1			
Monticello Winfield	103	G-11	2/3/2017	50	7.3					<0.1			1
Monticello Winfield	003	G-7	2/3/2017	200	7.1					<0.1			
Monticello Winfield	103	G-11	2/10/2017	20	7.1					<0.1			1
Monticello Winfield	003	G-7	2/10/2017	100	7.3			1		<0.1			
Monticello Winfield	103	G-11	2/17/2017	20	7.4					<0.1		****	
Monticello Winfield	003	G-7	2/17/2017	100	7.6			1		<0.1			1
Monticello Winfield	103	G-11	2/24/2017	20	7.5					<0.1			
Monticello Winfield	003	G-7	2/24/2017	500	7.5				i	<0.1			
Monticello Winfield	103	G-11	3/3/2017	20	7.7					<0.1		Marine Marine Marine Africa	
Monticello Winfield	003	G-7	3/3/2017	200	7.3					<0.1			
Monticello Winfield	003	G-7	3/10/2017	100	7					<0.1			
Monticello Winfield		G-11	3/30/2017	1000	7.9					<0.1			18
Monticello Winfield	103	G-11	3/31/2017	50	7.5				ĺ	<0.1			
Monticello Winfield	103	G-11	4/8/2017	20	7.3					<0.1			22
Monticello Winfield	103	G-11	4/13/2017	1000	5.9				1	<0.1			24
Monticello Winfield	003	G-7	4/13/2017	10000	5.9					<0.1			22
Monticello Winfield	103	G-11	4/21/2017	50	7					<0.1		48	22
Monticello Winfield	003	G-7	4/21/2017	1000	7.6					<0.1	i!	96	24
Monticello Winfield	103	G-11	4/28/2017	20	7.3			ì		<0.1			24
Monticello Winfield	003	G-7	4/29/2017	500	5.9					<0.1			22
Monticello Winfield	003	G-7	5/5/2017	50	7.3					<0.1			25
Monticello Winfield	103	G-11	6/1/2017	50	7.6					<0.1			26
Monticello Winfield	003	G-7	6/2/2017	1000	7					<0.1	ĺ		25
Monticello Winfield	103	G-11	6/9/2017	50	7.8					<0.1			26
Monticello Winfield	003	G-7	6/9/2017	1000	7.5					<0.1			26
Monticello Winfield	003	G-7	6/16/2017	100	7.9					<0.1			27
Monticello Winfield		G-11	7/7/2017	50	'.8					<0.1			30
Monticello Winfield		G-7	7/7/2017	500 7	'.9					<0.1			30
Monticello Winfield	003	3-7	7/15/2017	100 7	'		-			<0.1	2	272	31
Monticello Winfield		<b>3-7</b>	8/11/2017	100 7	'.8		lan Control			<0.1		-	31
Aonticello Winfield	103	3-11	8/19/2017	100 7	'.6					<0.1	1	114	32
nonticello Winfield	1	G-11	8/19/2017	100 7	.6					<0.1			32

FACILITY	OUTFALL	POND	DATE	LOW (gpm	Ph (su)	TSS (mg/l)	Fe (mg/l)	Mn (mg/l)	Se (mg/l)	I (mg/l) Tot	TSM (ml/l)	TDS (mg/i)	Temp
Monticello Winfield	- The state of the	G-7	8/19/2017	500	7.9						<0.1		32
Monticello Winfield		G-11	8/25/2017	20	7.4						<0.1		31
Monticello Winfield		G-7	8/25/2017	50	8.1						<0.1		31
Monticello Winfield		G-11	12/31/2017	No Flow									
Monticello Winfield	1	G-7	12/31/2017	No Flow									
Monticello Winfield	003	G-7	1/26/2018	500	7.4					1	<0.1	150	11
Monticello Winfield		G-7	2/16/2018	500	7.8						<0.1		11
Monticello Winfield	103	G-11	2/24/2018	8000	7.3						<0.1	52	13
Monticello Winfield		G-11	3/2/2018	8000	7.5					i	<0.1	Ĭ	15
Monticello Winfield		G-7	3/2/2018	20000	7.9						<0.1		15
Monticello Winfield		G-11	3/10/2018	500	7.2						<0.1		15
Monticello Winfield		G-7	3/10/2018	100	7.7						<0.1	1	13
Monticello Winfield	1	G-11	3/14/2018	100	7.5						<0.1		17
Monticello Winfield		G-7	3/14/2018	50	7.9						<0.1		16
Monticello Winfield		G-11	3/23/2018	50	7.8						<0.1		19

### Luminant Mining Company LLC - Monticello Lignite Mining Area

TABLE 1 for Outfall No. 012 · Pond G · 7

Samples are (check one): Comp	osites 🔲 Gr	abs	•		
Pollutants	Sample 1 (mg/l)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2	<2	2.0	<2	2.0
CBOD (5-day)	<2	<2	<2	<2	<2
Chemical Oxygen Demand	<6	7	10	<6	7.25
Total Organic Carbon	5.0	9.3	6.8	6.3	6.9
Dissolved Oxygen	3.07	8.72	7.53	6.17	6.37
Ammonia Nitrogen	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Total Suspended Solids	11.0	10	12	11	11
Nitrate Nitrogen	< 0.09	< 0.09	< 0.09	< 0.09	<0.09
Total Organic Nitrogen	0.80	0.52	0.48	0.55	0.59
Total Phosphorus	0.03	0.05	0.05	0.06	0.05
Oil and Grease	<5	<5	<5	<5	<5
Total Residual Chlorine	0.1	0.0	0.0	0.0	0.04
Total Dissolved Solids	140	156	170	4	118
Sulfate	58	48	60	64	58
Chloride	9	9	6	7	8
Fluoride	< 0.4	<0.4	< 0.4	< 0.4	< 0.4
Total Alkalinity (mg/L as CaCO <sub>3</sub> )	<1.00	<1.00	<1.00	<1.00	<1.00
Temperature (° F)	70.16	68.18	69.80	73.40	70.39
pH (standard Units)	7.90	7.58	7.06	7.21	7.44

TABLE 2 for Outfall No.

012 - Pond G - 7

Samples are (check one):	Composites Gr	abs				
Pollutants	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)	MAL (mg/L)
Aluminum, total	0.420		•			2.5
Antimony, total	< 0.010	< 0.010	< 0.010	<0.010	< 0.010	5
Arsenic, total	< 0.001	< 0.010	< 0.010	< 0.010	< 0.010	0.05
Barium, total	0.063	0.064	0.068	0.067	0.066	3
Beryllium, total	< 0.010	< 0.010	< 0.010	<0.010	< 0.010	0.5
Cadmium, total	0.001	< 0.001	< 0.001	< 0.001	0.001	1
Chromium, total	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	3
Chromium, hexavalent	< 0.003	< 0.003	< 0.003	< 0.003	<0.003	3
Chromium, trivalent	< 0.002	0.010	< 0.002	< 0.002	0.004	N/A
Copper, total	<0.010	< 0.010	< 0.010	< 0.010	< 0.010	2
Cyanide, available	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	10
Lead, total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5
Mercury, total	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.005/0.0005
Nickel, total	< 0.010	< 0.010	<0.010	<0.010	< 0.010	2
Selenium, total	< 0.010	< 0.010	<0.010	<0.010	< 0.010	5
Silver, total	< 0.002	<0.002	< 0.002	<0.002	<0.002	0.5
Thallium, total	< 0.010	<0.010	<0.010	< 0.010	<0.010	0.5
Zinc, total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5

#### **Luminant Mining Company LLC- Monticello Lignite Mining Area**

# TABLE 3

Completion of Table 3 is required for all external outfalls which discharge process wastewater. Partial completion of Table 3 is required for all external outfalls with nonprocess wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed (Instructions, Pages 56-57).

TABLE 3 for Outfall No.

012 - Pond G - 7

Samples are (check one): Composites Grabs

Pollutants	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Avg.	MAL
Fonutants	(μg/l)*	(μg/l)*	(μg/l)*	(μg/l)*	(μg/l)*	(μg/L)*
Acrylonitrile						50
Anthracene						10
Benzene	< 0.917	< 0.917	< 0.917	< 0.917	< 0.917	10
Benzidine	< 0.509	< 0.509	<0.509	<0.509	<0.509	50
Benzo(a)anthracene	< 0.316	< 0.316	< 0.316	<0.316	< 0.316	5
Benzo(a)pyrene	< 0.332	< 0.332	< 0.332	< 0.332	< 0.332	5
Bis(2-chloroethyle)ether						10
Bis(2-ethylhexyl)phthalate						10
Bromodichloromethane [Dibromochloromethane]	<0.250	<0.250	<0.250	<0.250	<0.250	10
Bromoform						10
Carbon tetrachloride	< 0.246	<0.246	<0.246	<0.246	< 0.246	2
Chlorobenzene	< 0.218	<0.218	<0.218	<0.218	< 0.218	10
Chlorodibromomethande						10
Chloroform	< 0.508	< 0.508	< 0.508	< 0.508	<0.508	10
Chrysene	< 0.297	<0.297	<0.297	< 0.297	<0.297	5
m-Cresol [3-Methylphenol]	< 0.938	< 0.938	< 0.938	< 0.938	<0.938	10
o-Cresol [2-Methylphenol]	< 0.938	<0.938	< 0.938	< 0.938	< 0.938	10
p-Cresol [4-Methylphenol]	< 0.938	< 0.938	< 0.938	< 0.938	<0.938	10
1,2-Dibromoethane	< 0.418	<0.418	< 0.418	< 0.418	< 0.418	10
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]						10
o-Dichlorobenzene [1,2-Dichlorobenzene]	:					10
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	<0.252	<0.252	<0.252	<0.252	<0.252	10
3,3'-Dichlorobenzidine						5
1,2-Dichloroethane	< 0.214	<0.214	< 0.214	< 0.214	< 0.214	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<0.232	<0.232	<0.232	<0.232	<0.232	10
Dichloromethane [Methylene chloride]						20

#### **Luminant Mining Company LLC- Monticello Lignite Mining Area**

Pollutants (Outfall 012)	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Avg.	MAL
1 Onutants (Outlan 012)	(μg/L)*	(μg/L)*	(μg/L)*	(μg/L)*	(μg/L)*	(μg/L)*
1,2-Dichloropropane						10
1,3-Dichloropropene [1,3-Dichloropropylene]						10
2,4-Dimethylphenol						10
Di-n-Butyl phthalate						10
Ethylbenzene						10
Fluoride				]		500
Hexachlorobenzene	<0.128	<0.128	<0.128	<0.128	<0.128	5
Hexachlorobutadiene	< 0.097	<0.097	< 0.097	<0.097	< 0.097	10
Hexachlorocyclopentadiene						10
Hexachloroethane	< 0.194	<0.194	<0.194	<0.194	<0.194	20
Methyl ethyl ketone	< 0.396	< 0.396	< 0.396	< 0.396	<0.396	50
Nitrobenzene	<0.234	<0.234	<0.234	<0.234	<0.234	10
N-Nitrosodiethylamine	<1.020	<1.020	<1.020	<1.020	<1.020	20
N-Nitroso-di- $n$ -butylamine	<1.040	<1.040	<1.040	<1.040	<1.040	20
Nonylphenol						333
Pentachlorobenzene	<1.610	<1.610	<1.610	<1.610	<1.610	20
Pentachlorophenol	<0.203	< 0.203	<0.203	< 0.203	<0.203	5
Phenathrene	<0.171	<0.171	<0.171	<0.171	<0.171	10
Polychlorinated biphenyls (PCBs)(**)		li .				0.2
Pyridine	<1.650	<1.650	<1.650	<1.650	<1.650	20
1,2,4,5-Tetrachlorobenzene	<1.930	<1.930	<1.930	<1.930	<1.930	20
1,1,2,2-Tetrachloroethane		_				10
Tetrachloroethene [Tetrachloroethylene]	<0.890	<0.890	<0.890	<0.890	<0.890	10
Foluene						10
1,1,1-Trichloroethane	< 0.150	<0.150	<0.150	<0.150	<0.150	10
1,1,2-Trichloroethane						10
Trichloroethene						10
Trichloroethylene]	<0.458	<0.458	<0.458	<0.458	<0.458	
2,4,5-Trichlorophenol	< 0.818	<0.818	<0.818	<0.818	<0.818	50
ΓΤΗΜ (Total Trihalomethanes)	<2.458	<2.458	<2.458	<2.458	<2.458	10
Vinyl Chloride	< 0.326	<0.326	< 0.326	< 0.326	<0.326	10

<sup>(\*)</sup> Indicate units if different from μg/L.

# TABLE 4

Partial Completion of Table 4 (only those pollutants which are required by the conditions specified below) is required for each external outfall.

Completion of Table 4 is not required for internal outfalls. (Instructions, Pages 57-58)

<sup>(\*\*)</sup> Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

# Luminant Mining Company LLC - Monticello Lignite Mining Area

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (μg/L)*	Sample 4 (μg/L)*	Average (µg/L)*	MAL (μg/L)*
Parathion (ethyl)						50
Toxaphene						10
2,4,5-TP [Silvex]						10

<sup>\*</sup> Indicate units if different from  $\mu/L$ .

# TABLE 6

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls. (instructions, Page 58)

TABLE 6 for Outfall No. 012 - Pond G - 7

Samples are (check one):	Composit	es 🔲 G	rabs 🚾			
Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (μg/L)*
Bromide		X	< 0.20	< 0.20	1	400
Color (PCU)	X		17.9	17.9	1	
Nitrate-Nitrite(as N)	X		3.74	3.74	1	
Sulfide(as S)		X	< 0.025	< 0.025	1	
Sulfite(as SO <sub>3</sub> )		X	< 0.0610	< 0.0610	1	
Surfactants		X	<1.00	<1.00	1	
Boron, total	X		0.096	0.096	1	20
Cobalt, total		X	< 0.010	< 0.010	1	0.3
Iron, total	X		0.588	0.588	1	7
Magnesium, total	X		7.935	7.935	1	20
Manganese, total	X		0.020	0.020	11	0.5
Molybdenum, total		X	< 0.010	< 0.010	1	1
Tin, total		X	< 0.010	< 0.010	1	5
Titanium, total		X	< 0.010	< 0.010	1	30

Titanium, total

\* Indicate units if different from μ/L.

# **Luminant Mining Company LLC - Monticello Lignite Mining Area**

# Appendix C WAM MODIFICATIONS



#### WAM modifications

Addition of new Control Point watershed parameters to the DIS file.

Proposed impoundment Pit129

FD585100 A10000 WP585100 1.26875

> Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

FDTCUSBC A10000 WPTCUSBC 35.3043

• Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

FDPPDISC A10000 (WPPPDISC 21.8636

Modifications to Cypress Run3 DAT file.

#### Addition of new Control Points:

Proposed impoundment Pit129

CP585100 585005

513

 Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

CPTCUSBC A10000

7 NONE

• Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

CPPPDISC TCUSBC

NONE

Additional control point modifications to maintain the stream network.
 \*\* Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

^^ Carollo modify existing CP	's to include r	new tracking	CP for Pit 129 analyses
**CP585031 A10000	7	513	
**CP585007 A10000	7	NONE	
**CP585006 A10000	7	NONE	
CP585031 PPDISC	7	513	
CP585007 PPDISC	7	NONE	
CP585006 PPDISC	7	NONE	
** Carollo modify existing CP	s to include n	ew tracking	CP for Pit 129 analyses
**CP585005 A10000	7	NONE	
**CP585004 A10000	7	NONE	
**CP585003 A10000	7	NONE	
**CP585002 A10000	7	NONE	
**CP585001 A10000	7	NONE	
CP585005 PPDISC	7	NONE	
CP585004 TCUSBC	7	NONE	
CP585003 TCUSBC	7	NONE	
CP585002 TCUSBC	7	NONE	
CP585001 TCUSBC	7	NONE	
** Carollo modify existing CPs	s to include n	ew tracking	CP for Pit 129 analyses
**CPA10120 A10000	7	513	
**CPA10100 A10000	7	513	
**CPA10090 A10000	7	513	
CPA10120 TCUSBC	7	513	

CPA10100 TCUSI CPA10090 TCUSI			7 7		513 513						
Modeling of Pit 129 SVPIT129 1410 2079	0	_	4	161	5355	251		3	59	479	1054
SAPIT129 39 50	3759 0 62		4090 2 72	16		20			23	25	33
Modeled Diversion of Pit129 WR585100 236 XMONTH20181231 1 1 1.0 104000PT129 PT129 WSPIT129 5355											
Optional flow switc	hes con	itrollii	ng timin	g of p	pit129	9 wate	r di	scha	arges	i.	
FS 1 1 A10000	0.0	1.0	0600		1	0	1	1	1		
FS 2 1 A10000		1.0	0600		1	0	2	2	1		
FS 3 1 A10000		1.0	0600		1	0	3	3	1		
FS 4 1 A10000		1.0	0600		1	0	4	4	1		
FS 5 1 A10000		1.0	0600		1	0	_	5	1		
FS 6 1 A10000		1.0	0600		.1	0	•	6	1		
FS 7 1 A10000		1.0	0.1	1		-	7 7		1		
FS 8 1 A10000 FS 9 1 A10000		1.0 1.0	0.1 0.1	1	l i		8 8 9 9		1		
FS 10 1 A10000	0.0	1.0	0.1	İ	ı 1			, 10	1		
1 5 10 1 A10000	0.0	1.0	0.1			0	. 0	. 0			

Modeled additional water right simulating a proposed junior water right authorizing impoundment of additional water in LOTP.

1

WRB10040 0 IND20181231 1

0.0

0.0

1.0

1.0

0600

0600

JrFill 4590

1

0 11 11

0 12 12

WSLKOPNS 251000

FS 11 1 A10000

FS 12 1 A10000

Modifications for Discharge Model.

Current Discharge Scenario:

Copy CI record from Run8 Cypress WAM dated 1/13/2010.

CIB10310 50.42 47.26 53.28 49.72 44.71 41.43

CI 40.91 39.96 36.83 38.05 41.43 50.42

Add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
 CIPPDISC 146 184 162 143 155 151
 CI 146 173 142 146 202 178

 Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines.

WRA10340 1392 MUN19700720 1 2 0.600 60404560301 4560 **CYPRESS** WRA10340 0 IND19700720 1 2 0.700 A10020 60404560304 4560 **CYPRESS** MUN19711220 1 2 0.600 A10020 WRA10200 7000 60404564301 4564 BOB WRA10200 4693 IND19711220 1 2 0.700 60404564303 4564 BOB

WRA10200 14	449	MUN19711220	1	2 0.600 B	10310	2MEMBERSFRI	MBOB
4590 BOB LC	OTPE	BOB					
WRA10120 6	42	MUN19550822	1	2 0.600 A1	10020	60404565301	4565
WRA10120	0	IND19550822 1	2	0.700	6	0404565302 4565	
WRA10070 4	00	MUN19380317	1	2 0.600 A1	10020	60404569301	4569
WRA10060	0	MUN19750120 1	2	0.600 A10	0020	60404570301	4570

#### Permitted Discharge Scenario:

- Copy CI record from Run8 Cypress WAM dated 1/13/2010.
   CIB10310 50.42 47.26 53.28 49.72 44.71 41.43
   CI 40.91 39.96 36.83 38.05 41.43 50.42
- Add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
   CIPPDISC 271 255 278 314 318 306
   CI 427 427 408 329 286 302
  - Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines. The modification from the run8 scenario is the full permitted diversion target.

WRA10340	10500	MUN19700720 1 2 0.600	60404560301 4560
CYPRESS			
WRA10340	3590	IND19700720 1 2 0.700 A10020	60404560304 4560
CYPRESS			
WRA10200	10000	MUN19711220 1 2 0.600 A10020	60404564301 4564
BOB			
WRA10200	10900	IND19711220 1 2 0.700	60404564303 4564 BOB
WRA10200	1930	MUN19711220 1 2 0.600 B10310	2MEMBERSFRMBOB
4590 BOB	LOTPB	OB	
WRA10120	1680	MUN19550822 1 2 0.600 A10020	60404565301 4565
WRA10120	550	IND19550822 1 2 0.700	60404565302 4565
WRA10070	400	MUN19380317 1 2 0.600 A10020	60404569301 4569
WRA10060	144	MUN19750120 1 2 0.600 A10020	60404570301 4570

# Appendix D

# REPORT ON WATER QUALITY SAMPLING FROM WATER MONITORING SOLUTIONS, INC.



#### Water Monitoring Solutions.



November 19, 2018

Carollo Engineers, Inc. Tony Smith, PE 5316 Hwy. 290 W., Ste. 330 Austin, TX 78735

**RE: Luminant Mine Pit Sampling** 

Mr. Smith,

On August 7 and October 30, 2018, Water Monitoring Solutions, Inc. (WMS) collected water quality data and laboratory samples in the Luminant Mine Pit near Mount Pleasant, Texas. For both events, sampling was conducted near the North and South ends of the water body. Water quality profiles were recorded at each meter using a YSI, Inc. EXO1 sonde with optical dissolved oxygen, pH, conductivity, and temperature sensors. Laboratory samples were collected at approximately 0.3 meter below the surface and between one and two meters from the bottom. Total depth, air temperature, and secchi transparency was measured at each station and general field observations were recorded.

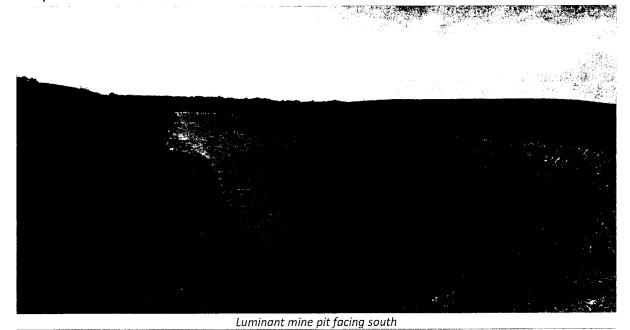
During the August 7<sup>th</sup> site visit, the mine pit was stratified with a thermocline located between five and six meters at each station. The area had experienced a drought through most of the summer and the water was very clear with a mean secchi transparency of 2.25 meters. Laboratory samples were collected between 8:30 and 9:05 AM, and the air temperature was relatively warm at 27.5°C. A light to moderate southerly breeze created small waves on the surface which made keeping the boat in position relatively difficult. Water quality profiles were recorded at two locations at the southern end of the pit. The depth was relatively shallow at 10 meters for southernmost site which is reported as South A. Another profile was conducted farther into the pit where the total depth was 13.2 meters deep. Laboratory samples were collected at this location. After making several attempts to find deep water near the northern end, samples were collected at a station that was 7.5 meters deep.

Ambient conditions were much different for the October 30<sup>th</sup> site visit. The region had received several inches of rain over the previous weeks, and the mine pit was no longer stratified. The water was turbid with a mean secchi transparency of 0.6 meters. Laboratory samples were collected between 8:55 and 9:25 AM, and the air temperature averaged 20°C. A moderate to gusty southerly breeze produced wave activity which made keeping the boat in position difficult. Water quality profiles were recorded for both ends of the pit. During this visit, the

### Water Monitoring Solutions.



North site was collected farther away from the shore and was deeper at 14.0 meters. The total depth for each station was between 13 and 14 meters. Laboratory samples were collected approximately 0.3 meter below the surface and about 1 meter above the bottom of the water body.



The results of the water quality profiles showed that the mine pit would meet Texas Surface Water Quality Standards (TSWQS). Dissolved oxygen averaged 7.4 mg/L in the mixed surface layer during the August visit and was 7.3 mg/L in October. The pH was slightly basic with a mean of 8.0 s.u. in the summer and slightly lower at 7.6 s.u. in the fall. Recent rainfall and lake turnover likely contributed to the lower pH in October. The mean specific conductance was 277  $\mu$ S/cm for both sampling events. Although specific conductance was not high, it should be noted that conductance is typically in the range of 150 - 160  $\mu$ S/cm in Lake Bob Sandlin and in

In general, there was little variation in the results across all samples. Regardless of stratification, temperature, and weather variability, most parameters had similar results. Laboratory analysis showed that nutrients were limited in the mine pit with a mean of 0.04 mg/L of Total Phosphorus and 0.08 mg/L Nitrate-Nitrogen. Both Ammonia and Nitrite-Nitrogen were below detection limits for all samples, and Total Kjedahl Nitrogen was low with a mean of 0.51 mg/L. As a result of limited nutrients, chlorophyll- $\alpha$  and pheophytin were very low in the surface samples with a mean of 2.02 µg/L and less than detection limits, respectively. Alkalinity is typically low in the region and the mine pit was no different with a mean of 55.6 mg/L.

Lake Cypress Springs.

### Water Monitoring Solutions.



*E. coli* bacteria was collected with the surface samples and was below detection limits in the summer. Bacteria were present in the October samples and in a much higher concentration at the South station as compared with the North. Waterfowl were observed upon arrival at the mine pit, and are one possible source of the bacteria. Although present, the *E. coli* results were well below Texas Surface Water Quality Standards and likely pose no human contact recreation risk.

The only laboratory result that should be noted is sulfate. Big Cypress Creek, the receiving water for the mine pit, is impaired and shown on the Texas 303(d) List for sulfate. The mean sulfate result for the mine pit samples was 63.7 mg/L with a range of 5 mg/L. The TSWQS standard for reservoirs is 50 mg/L and 100 mg/L for streams and rivers. Since there are no apparent sources contributing sulfate to the water, the source of sulfate is most likely from the soils that had been exposed during mining operations.

Parameter	Units	Mean	Max	Min	Range
Phosphorus, Total (As P)	mg/L	0.0404	0.0544	0.0264	0.028
Nitrate (as N)	mg/L	0.0804	0.18	0.0188	0.1612
Nitrite (as N)	mg/L	Non-Detect			
Nitrogen, Ammonia (as N)	mg/L	Non-Detect			
Total Kjeldahl Nitrogen (as N)	mg/L	0.51	0.78	0.19	0.59
Total Suspended Solids	mg/L	7	12	1	11
Sulfate	mg/L	63.7	67	62	5
Chloride	mg/L	5.41	5.62	5.07	0.55
Total Organic Carbon	mg/L	2.89	3.38	2.54	0.84
Total Alkalinity (CaCO3)	mg/L	55.6	58.1	54.2	3.9
Chlorophyll-a	ug/L	2.017	3.68	0.764	2.916
Pheophytin-a	ug/L	Non-Detect			
E. coli	MPN/100mL	15.02	25.9	4.13	21.77

Results of Laboratory Analysis

The complete results of the laboratory analysis and water quality profiles are included as an attachment in an Excel spreadsheet along with the LCRA Laboratory Reports in PDF format. Please review and contact me with any questions.

Thank you for the opportunity to partner with you on this project.

Regards,

Randy Rushin

Randy Robli

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			****

### WAM modifications

Addition of new Control Point watershed parameters to the DIS file.

Proposed impoundment Pit129

FD585100 A10000 WP585100 1.26875

Flow Analysis location T

 Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

FDTCUSBC A10000 WPTCUSBC 35.3043

• Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

FDPPDISC A10000 (WPPPDISC 21.8636

Modifications to Cypress Run3 DAT file.

### Addition of new Control Points:

• Proposed impoundment Pit129

CP585100 585005

513

 Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

CPTCUSBC A10000

7 NONE

Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

CPPPDISC TCUSBC

CPA10120 TCUSBC

NONE

Additional control point modifications to maintain the stream network.

es to include r	new tracking	CP for Pit 129 analyses
7	513	
7	NONE	
7	NONE	
7	513	
7	NONE	
7	NONE	
s to include n	new tracking	CP for Pit 129 analyses
7	NONE	
s to include n	ew tracking	CP for Pit 129 analyses
7	513	
7	513	
7	513	
	7 7 7 7 7 7 8 to include r 7 7 7 7 7 7	7 513 7 NONE 7 NONE 7 513 7 NONE

513

CPA10100 TCUS CPA10090 TCUS		7 7	513 513				
Modeling of Pit 129 SVPIT129 1410 2079 SAPIT129 39 50	0 9 3759	4 4090 2 72	161 5355 16 98	251 20	359 23	479 25	1054 33
Modeled Diversion WR585100 236 WSPIT129 5355	XMONTH20	0181231	1 1	1.0	1040	000PT129	PT129
Optional flow switch FS 1 1 A10000 FS 2 1 A10000 FS 3 1 A10000 FS 4 1 A10000 FS 6 1 A10000 FS 7 1 A10000 FS 8 1 A10000 FS 10 1 A10000 FS 11 1 A10000 FS 12 1 A10000	0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0	0600 0600 0600 0600 0600 0600 0.1 0.1 0.1	of pit129 1 1 1 1 1 1 1 1 1 1	0 1 0 2 0 3 0 4	1 1 2 1 3 1 4 1 5 1 6 1 1 1 10 1		
Modeled additional impoundment of ac WRB10040 0 WSLKOPNS 2510	dditional wate IND201812	er in LOT		sed junio	_	t authorizi 590	ng
CIB10310 50.42 CI 40.91 39.	Scenario: cord from Ru 47.26 53.2 96 36.83 3 representing 184 162 3 142 1 flow paramet	n8 Cypre 8 49.72 38.05 47 a 10 yea 143 46 202 ters and bress Cre	2 44.71 1.43 50. ar minimu 155 7 2 178 return flov eek arm o	41.43 42 m return f 151 w control f f Lake O	flow for Pilg points from The Pines.		

60404560304 4560

60404564303 4564

60404564301 4564

BOB

IND19700720 1 2 0.700 A10020

IND19711220 1 2 0.700

MUN19711220 1 2 0.600 A10020

CYPRESS WRA10340

CYPRESS WRA10200

WRA10200 4693

BOB

0

WRA10200 1449	MUN19711220	1	2 0.600 B10310	2MEMBERSFRMBOB
4590 BOB LOTP	BOB			
WRA10120 642	MUN19550822	1	2 0.600 A10020	60404565301 4565
WRA10120 0	IND19550822 1	2	0.700	60404565302 4565
WRA10070 400	MUN19380317	1	2 0.600 A10020	60404569301 4569
WRA10060 0	MUN19750120 1	2	2 0.600 A10020	60404570301 4570

### Permitted Discharge Scenario:

- Copy Cl record from Run8 Cypress WAM dated 1/13/2010.
   CIB10310 50.42 47.26 53.28 49.72 44.71 41.43
   Cl 40.91 39.96 36.83 38.05 41.43 50.42
- Add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
   CIPPDISC 271 255 278 314 318 306
   CI 427 427 408 329 286 302
  - Add return flow parameters and return flow control points from Run8 for Water rights upstream of the Big Cypress Creek arm of Lake O The Pines. The modification from the run8 scenario is the full permitted diversion target.

		ie tile fall permitted diversion target.	
WRA10340 1	10500	MUN19700720 1 2 0.600	60404560301 4560
CYPRESS			
WRA10340 3	3590	IND19700720 1 2 0.700 A10020	60404560304 4560
CYPRESS			
WRA10200 1	0000	MUN19711220 1 2 0.600 A10020	60404564301 4564
BOB			
WRA10200 1	0900	IND19711220 1 2 0.700	60404564303 4564 BOB
WRA10200 1	1930	MUN19711220 1 2 0.600 B10310	2MEMBERSFRMBOB
4590 BOB L	OTPB	OB	
WRA10120 1	1680	MUN19550822 1 2 0.600 A10020	60404565301 4565
WRA10120	550	IND19550822 1 2 0.700	60404565302 4565
WRA10070 4	400	MUN19380317 1 2 0.600 A10020	60404569301 4569
WRA10060	144	MUN19750120 1 2 0.600 A10020	60404570301 4570

			!

### cyp\_DischargeScenarios

						:	
					·		
				·			

m cyp\_CurrentDischarges\_woPit129-Base 0 **BOB FYLOTP** 0 104000PT129 10405850306 10405850304 10405850303 10405850305 10405850302 10405850301 10405850307 9.020 Ŋ 0.091 99 0.078 0.077 0.162 9.020 0.084 0.081 0.072 0.051 99 Full Authorized Diversions, No Return Flows 10 10 10 10 10 10 10 10 9.020 0.080 0.084 0.013 99 9 0.085 Cypress Water Availability Modeling 100 100 100 100 100 100 100 100 0.075 0.089 0.020 9/ 0.104 0.004 Monthly Water Use Factors 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 0.020 0.100 0.109 9/ 0.063 0.001 Updated 6/18/2015 KA 99 General Comments 48500 10000 10000 10000 10000 10000 10000 10000 10000 241800 0.100 0.068 0.109 0.000 1948 0.077 1.0 SI 5813 MON IRR 51 7 \*\*FY \*\*FY \*\*FY \*\*FY \*\*FY \*\*FY \*\*FY \*\*FY \*\*FY **∀**4×× \* \* \* 8 \* \* \* 

0.038

0.053

0.142 0.084

0.200

0.077

0.081

0.080 0.097

0.080 0.241

0.079

MIN

0

0

**CP585007 **CP585006 CP585007 CP585006 CP585006 CP585036 CP585034 CP585033 CP585033 CP585033	TXU app 585008 585037 585009 585010 Carollc	v P I	UC REC UC OTHER UC CONST UC MONTH UC
5 5 5 5 5 P P P	5850, A10120 A10120 A10120 A10120 modif	l Poj add A1006 TCUSE add	0.080 0.083 0.083 0.083 0.083 1.0 31
	6/24/05, kb	additional  3C additional	0.084 0.083 0.083 0.083 0.083 0.083 2.0 1.0 28.25
	CPs		0.088 0.083 0.083 0.083 0.083 2.0 1.0 31
7 7 7 7 7	7 7 7 7 7 to include	points 7 7 point f	0.090 0.083 0.083 0.083 0.083 0.083 1.0
7 7	NO! 5: NO! NO! NO! new tracking	for flow for modeli	yp_curren 0.090 0.083 0.083 0.083 0.083 1.0 1.0 31
NONE NONE 513 NONE 513 513 513	NONE 513 NONE NONE Cking CP for Pit	analyses NONE NONE Eng of pit	0.087 0.083 0.083 0.083 0.083 1.0 1.0 30
	it 129 anal	regarding permi 129	P1(129-B
	alyses		9.50 8.50 8.50 8.50 8.50 8.50 8.50 8.50 8
		tting of pit 129	

	:129-Base	129 dilalyses					
-	Cyp_currentDiscnarges_woPit129-Base de new tracking CD for Dit 120 2253	NONF CT LOL FILE	NON	NON	NON	NONE	I INON
	cyp_currentDiscnarges_woPit129-Base * Carollo modify existing CPs to include new tracking CP جمع Dit عمر عمر الم	7	7	7		7	7
	modify exis	A10000	A10000	A10000	A10000	A10000	PDISC
	* Carollo	*CP585005 A10000	*CP585004 A10000	*CP585003 A10000	*CP585002 A10000	*CP585001 A10000	P585005 PPDISC

(

harg	בו ז כם דווכדממע					CN	ENON 7	7 NONE	7 NONE	7 NONE	7 NONE	7 NONE	NON 7	for A5814	7 0AD413	7 OAD413	7 OAD413	for A5813	FNON 7	7 NONE		C4582, for Barnes Creek watershed		7 810170		7 0AD413	7 OAD413	7	7 NONE	7 NONE	Z VONE	Č
modifv	A10006	A10000	A10000	A10000		PPDISC	TCUSBC	TCUSBC	TCUSBC	TCUSBC	A10070	A10010	A10010	control points	581432	A10260	A10240	control points	D10000	D10000	D10000	additional CPs for	B10170	B10170		A10340	A10340	A10300	A10000	A10200	A10200	010010
** Carollo	**CP585005	**CP585004	**CP585003	**CP585002	**CP585001	CP585005	CP585004	CP585003	CP585002	CP585001	CP585011	CP585012	CP585013	** add con	CP581431	CP581432	CP581433	** add con	CP581301	CP581302	CP581303	** additio	CP458232	CP458237	<del>*</del>	CPA10370	CPA10350	CPA10340	**CPA10300	CPA10300 **	CPA10290	CD11000

	513 513	7		B10040 B10040	CPB10110 CPB10100
	513	7		B10040	CPB10120
	NONE	7		B10040	CPB10150
		7		B10150	CPB10170
	513	7		B10170	CPB10180
	513	7		B10150	CPB10200
	513	7		B10150	CPB10210
	513	7		B10230	CPB10220
	513	7		B10170	CPB10230
	QAD <b>41</b> 3	7		B10150	CPB10250
	QAD <b>41</b> 3	7		B10150	CPB10260
		7		B10150	CPB10270
	QAD413	7		B10150	CPB10290
	QAD413	7		B10150	CPB10300
	NONE	7		810150	CPB10310
	QAD413	7		B10310	CPB10320
	NONE	0		B10150	CPA10000
	513	7		A10000	CPA10010
	NONE	7		A10010	CPA10020
	QAD413	7		A10010	CPA10030
	513	7		A10010	CPA10040
	513	7		A10010	CPA10050
	513	7		A10010	CPA10060
	513	7		A10010	CPA10070
	513	7		TCUSBC	CPA10090
	513	7		TCUSBC	CPA10100
	513	7		TCUSBC	CPA10120
ω	513	7		0 A10000	**CPA10090
ω	513	7		0 A10000	**CPA10100
		7		0 A10000	**CPA10120
for Pit 129 analyses	new tracking CP	include	modify existing CPs to		** Carollo
		7		A10000	CPA10200
		7		A10200	CPA10240
1		7		0 A10000	**CPA10240
cyp_CurrentDischarges_woPit129-Base	CurrentDischar	сур_			

cyp_CurrentDischarges_woPit129-Base	7 513	7	7 0AD413	7 NONF	7	NONE .	7 0AD413	7 0AD413	7 0AD413	7 QAD413	9 NONE	7 QAD412	7 QAD412	7 QAD412	7 513	7 513	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 QAD413	7 QAD413	7 NONE	7 QAD413	7 QAD413	7 QAD413	7 OAD413	NONE	7 513	7 513	7 513	7 QAD412
CPB10090 B10040	CPB10080 B10040	CPB10070 B10040	CPB10050 B10040	**CPB10040 B10000	CPB10040 B10000	CPB10000 F10230	CPC10050 C10010	CPC10040 C10010	CPC10030 C10010	•		_	_	_	CPD10160 D10150	CPD10150 D10130	CPD10140 D10130	_	_	_	_	CPD10080 D10000	_	_	_	CPD10040 D10000	CPD10030 D10000	CPD10020 D10000	CPD10010 D10000	CPD10000 E10060	CPE10090 E10080	CPE10080 E10060	CPE10070 E10060	CPE10060 E10040

	NONE	NONE	2	OUT TUO	SAI
			0	OUT	CP 513
			00	0 TU0 TU0	CPQAD413 CPOAD512
			0	TUO	CPQAD412
	NONE		7	TUO	CP 10010
	QAD413		7	10010	CP 10020
	QAD413		7	10010	CP 10040
	QAD413		7	10040	CP 10050
	NONE		0	TUO	CPF10000
			7	F10000	CPF10005
	513		7	F10005	CPF10020
	QAD412		7	F10020	CPF10030
	513		7	F10005	CPF10080
	QAD413		7	F10080	CPF10090
	QAD512		7	F10080	CPF10100
	513		7	F10080	CPF10110
	513		7	F10080	CPF10120
	NONE		7	F10080	CPF10130
	NONE		7	F10130	CPF10140
	NONE		7	F10130	CPF10160
	NONE		7	F10130	CPF10170
	NONE		7	F10170	CPF10180
	NONE		7	F10130	CPF10190
	NONE		7	F10190	CPF10210
	NONE		7	F10210	CPF10220
	NONE		7	F10220	CPF10230
	513		7	F10230	CPF10240
	QAD512		7	F10230	CPF10250
	NONE		0	F10160	CPE10000
	QAD412		7	E10000	CPE10010
	513		7	E10010	CPE10020
	NONE		7	E10000	CPE10040
1	QAD412	İ	7	E10040	CPE10050
cyp CurrentDischarges woPit129-Base	ntDischa	b Curre	су		

			WMTP	PT129	5850 5850
	9-Base	0    	Pilgrims Pride WWTP	104000PT129	10405850001 10405850002
	CurrentDischarges_woPit129-Base NONE	ZERO ZERO -3 0	3.72 44.71 41.43 3.05 41.43 50.42 10 year minimum return flow for Pilgrims 143 155 151 146 202 178	ion	
\	tDischarg NONE NONE NONE NONE NONE NONE NONE	ZERO	41.43 50.42 num retur 151 178	Information }	
		ZERO	44.71 41.43 ear minin 155 202	Storage F pit 129	
		2	94 gg a	servoir S eling of	1 1 BACKUP
	240DM OUT 270DM OUT 70DUM OUT 20MUN OUT .VNGER OUT NGRFD OUT GHSPR OUT EFFSN OUT RECTY OUT	OUT 2 ====================================	2 47.26 53.28 1 39.96 36.83 inflow representing 6 184 162 6 173 142	Associated Reservoir Storage right for modeling of pit 129 IND20181231 1	05, kb IND20041231 IND20041231
		OUT ============ Inflow Records	47.26 39.96 10w repr 184 173	br r	6/24/05, k IND20
	00 100 100 100 100 100 100	0UT ======= nt Inflo	9.0 4.0 4.0 4.1	Rights add wa 48 535	5850, 6/ 50 0
	CPA240DM CPB270DM CPB70DUM CPB20MUN CPAVNGER CPDNGRFD CPHGHSPR CPJEFSN CPJEFSN CPJEFSN CPJEFSN CPJEFSN CPJEFSN	CPA-ZERO ** ========  ** Constant	** CIB10310 CI ** Carollo CIPPDISC CI **	** Water F ** Carollo **WR585100 **WSPIT129 **	**TXU app ! WR585001 WR585002 SO

5850	10405850302	ы	206	0	WR585032
5850	10405850305	Н	IND20041231	694 80 80	WR585035
			0.979 0.5841	287.3	WSR58503
5850	10405850303	Н	IND20041231	0	WR585033
			0.979 0.5841	509.3	WSR58504
5850	10405850304	۲	IND20041231	0	WR585034
			0.979 0.5841	327	WSR58506
5850	10405850306	Н	IND20041231	0	WR585036
			0.979 0.5841	271.4	WSR58501
5850	10405850301	Н	IND20041231	0	WR585031
			0.979 0.5841	525.6	WSR58507
5850	10405850307	Ц	IND20041231	0	WR585037
	JP	BACKUP			90
5850	10405850013	Ь	IND20041231	0	WR585013
	JP	BACKUP			90
5850	10405850012	Н	IND20041231	0	WR585012
	JP	BACKUP			SO
5850	10405850011	Ь	IND20041231	0	WR585011
	JP	BACKUP			S0
5850	10405850010	Ъ	IND20041231	0	WR585010
	JP	BACKUP			S0
5850	10405850009	Н	IND20041231	0	WR585009
	JP	BACKUP			90
5850	10405850008	Ь	IND20041231	0	WR585008
	JP	BACKUP	-		SO
5850	10405850007	Ь	IND20041231	0	WR585007
	JP	BACKUP			SO
5850	10405850006	Ь	IND20041231	0	WR585006
	IP P	BACKUP			SO
5850	10405850005	Ъ	IND20041231	0	WR585005
		BACKUP			SO
5850	10405850004	Н	IND20041231	0	WR585004
		BACKUP			SO
5850	10405850003	1	IND20041231	0	WR585003
	<pre>cyp_CurrentDischarges_woPit129-Base</pre>				

_woPit129-Base
_CurrentDischarges
⊐

WSR58502 **	245.1	0.979 0.5841	cyp_Curren <sup>.</sup>	cyp_CurrentDischarges_woPit129-Base	.29-Base	
** APPLICATION	ATION 5814	14				
WR581431	0	OTHER20031028	<del>, ,</del>		104010101	
WS HR9	356	0.979 0.5841			10405814301	
WR581432	0	OTHER20031028	⊣		10/0501/1303	
WS HR21	263	0.979 0.5841			10403014307	
WR581433	0	OTHER20031028	⊣		10/0501/1001	
WS HR10	1495	0.4012 0.856			10403814303	
** APPLICA	<b>ATION 5813</b>					
WR581301	685	581320031001	$\leftarrow$		10/05013001	
WR581303	0	581320031001	$\vdash$		10405813001	
20			BACKUP		COOCTOCALOT	
WR581302	0	581320031001	<b>~</b>		10/05913003	
SO			BACKUP		700010001	
WRD10130	0	REC19830222	<b>—</b>		10/0/22/24	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
WSWHTOAK	6.7	0.979 0.5841	0		TOCACCAGAGT	4554
WRD10160	0	REC19830222	П		CAENEENADAL	7007
WSBASSLK	3.4	0.979 0.5841	0		7001010101	4004
WRD10140	0	REC19830222	T		10404334303	1221
MSDOGMOD	9	0.979 0.5841	0		000000000000000000000000000000000000000	4004
WRD10180	0	REC19830222	⊣		1020222001	1001
WSLKAUTM	130	0.979 0.5841	0		†00†00†0†	4224
WRD10170	0	REC19830222	₩.		10404334305	1001
WSCATFSH	Ŋ	0.979 0.5841	0			4004
WRD10150	0	REC19830222	$\vdash$		10404334306	1221
WSLKPINE	10.5	0.979 0.5841	0			4004
WRD10190	0	REC19830222	₩		TACASSADAD	7007
WSLKWALL	2	0.979 0.5841	0		/00t00t0t	4004
WRF10080	2343	MUN19830418	₩.		19494349991	0757
F10080	8.29	0.979 0.5841	0	ı	1000101	101
20	3293.45	2343				
WRF10080	1281	IND19830418	1	-	10/0/3/0002	0707
F10080		0.979 0.5841	0	1	70064040404	4040
20	3293.45	1281				

							*
	60404562002		_	<u> </u>	IRR19630801	24.0	WRA10290 **
	60404561001		1		IRR19630831	11.61	WRA10300
							*
						/ 2800	**
4560 CYPRESS	60404560305		_	Н	REC19660131	0	WRA10340
						/2800	**
4560 CYPRESS	60404560304	0.700 A10020	2	Н	IND19700720	9	WRA10340
						12000	**
4560 CYPRESS	60404560303			ш	IRR19700720	210	WRA10340
							*
						72800	WSLKCYPS
4560 CYPRESS	60404560302			Ц	MUN19660131	1000	WRA10340
						/ 2000	**
4560 CYPRESS	60404560301	0.600	. 2	Ъ	MUN19700720	1392	WRA10340
							*
							*
					Springs	Cypress :	** Lake
							*
						ļ	*
			0		0.979 0.5841	230	WSA10350
	60404559301			ш	REC19751215	0	WRA10350
			0		0.979 0.5841	350	WSA10370
	60404558301			ш	REC19750106	0	WRA10370
	1 10404525101			щ	IRR19841218	202.5	WRF10180
			0		0.979 0.5841	380	WSB10250
	10404522301			Н	REC19841127	0	WRB10250
	cyp_CurrentDischarges_woPit129-Base	p_CurrentDischarg	Ç				

Lake Monticello

cyp_CurrentDischarges_woPit129-Base 60404563301 4563	60404563302 4563				60404564301 4564 BOB	60404564302 4564 BOB	60404564303 4564 BOB	60404564305 4564 BOB	2MEMBERSFRMBOB 4590 BOB LOTPBOB	1TXU_MONTE 4590 BOB LOTPBOB	TE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO	60404564304 4564 BOBROR		======================================	
CurrentDischa					0.600 A10020		0.700		AUTHORIZATION 2 0.600 B10310	ZATION	SANDLIN WATER RIGHT. NOTE			1 2 0.600 A10020 6	
cyp_(	H				1 2 0	-	1 2 0	_		IND AUTHORIZATION 1	ANDLIN WA	·	 	1 2 0	<b>o</b> (
IND19700406	IND19730604			ın	MUN19711220	IND19711220	IND19711220	REC19711220 1	** LOTP WATER FROM BOB SANDLIN - MUNI WRA10200 1449 MUN19711220 1 WSRORSAN 213350	** LOTP WATER FROM BOB SANDLIN - IND WRA10200 10000 IND19711220 1 WSRORSAN 213350	** REMAINING AUTHORIZATION OF BOB SA	** BOB SANDLIN STORAGE, INFLOWS ONLY. WRA10200 19600 IND19780313 1 **		MUN19550822 1 0.4012 0.856	, L
15300	1000 40100			Bob Sandlin	7000 213350	8000 213350	4693 213350	0 213350	ATER FROM 1449	ATER FROM 10000 213350	ING AUTHOR	NDLIN STON 19600	# # # # # # # # # # # # # # # # # # #	642	
WRA10240 WSLKMONT **	WRA10240 WSLKMONT **	* *	- <del>*</del> *	Lake	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN	** LOTP WAWA10200 WSBORSAN	** LOTP WAWA10200	** REMAIN]	** BOB SAN WRA10200 **	**	WRA10120 WSTANKSL	0070

				0		0.9/9 0.5841	88	**
	60404575301			,	Н	19	6	WRB10290
						1.40	5.43	SO
							5.0	OR
				0		0.979 0.5841	5.0	WSOFF320
				0		0.979 0.5841	0.5	WSB10320
4574	60404574301				ш	IRR19511231	1.4	WRB10320
						1.40	5.43	SO
				0		0.979 0.5841	5.0	WSOFF320
4574	60404574001				Н	IRR19511231	0	WRB10320
	60404573001				щ	IRR19551231	11	WRA10010
				0		0.979 0.5841	42	WSE10020
	10404573301				М	IND19850604	25.3	WRE10020
				0		0.979 0.5841	10	WSA10030
	60404572301				1	IRR19631231	4.4	WRA10030
				0		0.979 0.5841	12	WSA10040
	60404571301				<b>1</b>	IRR19631231	4	WRA10040
				0		0.979 0.5841	100	<b>WSOLDCTY</b>
4570	60404570302				Н	REC19750120	0	WRA10060
				0		0.979 0.5841	100	<b>WSOLDCTY</b>
4570	60404570301	A10020	0.600	2	<b>–</b>	MUN19750120	0	WRA10060
				0		0.4012 0.856	1176	<b>WSNEWCTY</b>
4569	60404569302				1	REC19380317	0	WRA10070
				0		0.4012 0.856	1176	<b>WSNEWCTY</b>
4569	60404569301	A10020	0.600	2	щ	_	400	WRA10070
				0		0.979 0.5841	35	WSA10050
	60404568301				Ы		7.5	WRA10050
				0		0.979 0.5841	5	WSA10100
	60404567301				Н	IRR19561231	6	WRA10100
				0		0.979 0.5841	0.23	WSA10090
	60404566301				Н	195	21.44	WRA10090
				0		0.4012 0.856	2700	WSTANKSL
4565	60404565303				Н	REC19550822	0	WRA10120
				0		0.4012 0.856	2700	WSTANKSL
	<pre>cyp_CurrentDischarges_woPit129-Base</pre>	ntDischar	_Currer	cyp				

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4576

cyp_currentDischarges_woPit129-Base	60404576301	60404576302		60404577391		60404578301		68484579381	1000	68484588381		68484581381		
					0		0		0		0		0	
	7	H		П		Н		7		Н		Н		
	IND19730910	REC19730910		IRR19500930	0.979 0.5841	IRR19521231	0.979 0.5841	IRR19531231	0.979 0.5841	IRR19581231	0.979 0.5841	REC19690922	0.979 0.5841	
	Reservoir 11000 23587	0 23587		124	96	9	Н		64	2	0.5	0	510	
<del>*</del> :	** Welsh Reservoir WRB10270 11000 WS WELSH 23587 **	** WRB10270 WS WELSH **	* * * *	WRB10230	WSB10230	WRB10220	WSB10220	WRB10210	WSB10210	WRB10200	WSB10200	WRB10180	WSB10180	* *

Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir, is used to supplement water supply to Ellison Crk Reservoir using the SO Record. Ellison Creek Reservoir \* \* \* \* \* \* \* \*

4582 ELLISON	4582 ELLISON	4582 ELLISON
60404582001	60404582002	60404582004
MUN19720508 1	IND19421130 1	ess creek at priority 19421130 1
2000 24700	24700	الات الت
WRB10170 WSELLISN **	WRB10170 21000 INI WSELLISN 24700 ** Eill from Change Co	WRB10170

WRB10050 WSB10050	WRB10070 WSJOHNSN **	** Wilkes WRB10070 WSJOHNSN **	* *	** **	WRB10080	WSB10090	WRB10090	WSB10100	WRB10100	WSB10110	WRB10110	WSB10120	WRB10120	*	*	SO	WSBARNES	WR458232	WSBARNES	WR458232	** Miscel	* 0	WSELLISN	
0 240	0 10100	Reservoir 6668 10100		2500	150	12	Ь	50	0.56	60	14.2	4.79	38.3				24000	0	24000	0	Miscellaneous		24700	!
REC19751208 0.979 0.5841	REC19600504	pir (aka Johnson IND19600504		0.4012 0.856	195	0.979 0.5841	_	0.979 0.5841	IRR19550331	0.979 0.5841	IRR19480930	0.979 0.5841	IRR19620731			458237		197	0.4012 0.856	OTHER19720508	impoundments on	датата вавал		
1 0	ц	Reservoir) 1		c.	<u>н</u>	0	ъ	0	Ц	0	<u>ц</u>	0	₽			BACKUP			Ø		Barnes Cr etc.			Cyp_cai
60404589301	60404588302	60404588301			60404587301		60404586301		60404585301		60404584301		60404583301					4582BU		60404582303				10. 800 MO: TOTAL
	4588	4588																4582 barnes		4582 barnes				

FYLOTP	FYLOTP																									
4590	4590																									
======================================	ZIND		60404591391	1001000	60404592001	60404593301	100000000000000000000000000000000000000	60404594002	60404595001	50104505001 60404506001	60404597301 60404597301	Torribator	60404598301	Torontotoo	60404500001	100000000000000000000000000000000000000		69494699991	69494691391	Tootototo	60404602301	100700100	60404603301		50404504301	100100100
REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT (10040 40070 MUN19570916 1 (1007) 251000 -1				0	₩.		0			· ·	1	0		0		0			1	0		0		0		
0F V	Н		Н		Н	⊣		Н	Н	⊣	⊣		Т		Н			7	1		Н		+		7	
REDUCE LOTP DEMAND FOR PORTION 10040 40070 MUN19570916 KOPNS 251000 -1	IND19570916		IRR19670430	0.979 0.5841	IRR19690930	IRR19620531	0.979 0.5841	IRR19550103	MUN19630218	IRR19570319	IRR19760621	0.979 0.5841	IND19700126	0.979 0.5841	IRR19530731	0.979 0.5841	47	IRR19660630	REC19461121	0.979 0.5841	REC19600211	0.4012 0.856	REC19730312	0.979 0.5841	IRR19670630	0 070 0 5011
LOTP DE 40070 251000	151800 251000	       	∞	9	96.88	82	100	1080	2000	80.21	25	35	10	5	47	7	40.42	62.5	0	135	0	1414	0	116	7.03	28
** REDUCE WRB10040 WSLKOPNS	$\mathbf{a}$		WRF10250	WSF10250	WRF10230	WRF10240	WSF10240	WRF10220	WRF10210	WRF10190	WRC10040	WSC10040	WRC10030	WSC10030	WRC10010	WSC10010	SO	WRF10170	WRD10090	WSD10090	WRD10080	WSD10080	WRD10070	WSELWOOD	WRD10060	WSD10060

			0	0.4012 0.856	600	WS 10040
	60404620301		1	REC19781016	0	WR 10040
			0	0.979 0.5841	184	WS 10050
	60404619301		Н	REC19760524	0	WR 10050
			0	0.979 0.5841	42	WSF10020
4618	60404618302	1	1	IRR19810413	51	WRF10020
			0	0.979 0.5841	42	WSF10020
4618	60404618301	1	1	IRR19790221	42	WRF10020
			0	0.979 0.5841	112	WSLINDEN
	60404617301	т-	1	REC19720207	0	WRF10030
			0	0.4012 0.856	1325	WSSHADOW
	60404616301	<b>1</b>	1	REC19690811	0	WRF10110
			0	0.979 0.5841	54	WSF10120
	60404615301	ц	1	IRR19751215	10	WRF10120
4614	60404614002	щ	1	MUN19561127	8442	WRF10130
4614	60404614001	ц	1	MUN19470418	7558	WRF10130
	60404613001	ц	1	MIN19690224	165.21	WRF10140
	60404612001	ц	1	IRR19550323	46.58	WRF10160
			0	0.4012 0.856	744	<b>WSHOLMES</b>
	60404611301		1	IND19430701	955	WRE10010
	60404610001		1	IRR19551010	122	WRE10040
			0	0.979 0.5841	228.2	WSE10050
4609	60404609301		1	IND19821206	225	WRE10050
			0	0.979 0.5841	4.8	WSE10060
4609	60404609001		1	IND19680318	15	WRE10060
			0	0.979 0.5841	20	WSE10070
	60404608301		Н	IRR19520630	18.2	WRE10070
			0	0.979 0.5841	330	WSD10010
	60404607301		1	REC19740812	0	WRD10010
			0	0.979 0.5841	294	WSD10020
	60404606301		1	REC19740812	0	WRD10020
			0	0.979 0.5841	114	WSD10040
4605	60404605302		Н	REC19741209	0	WRD10040
			0	0.979 0.5841	36	WSD10030
4605	60404605301		Ц	REC19741209	0	WRD10030
	t129-Base	cyp_CurrentDischarges_woPit129-Base	C			

															5272	7717	5373	7/76							2602		בעשס	0000	foot	9999	6666		6666
129-Base 60404621301	70707	10402024301	10/05090301	TOCOSOCOLOT	10405112301	TOCOTTCOLOT	10405167301	100 /0100104	10405212301	10011100	10405251301	TOCTCZCOLOT			10405272301	1001	10/05/7/39/	7017170101	10705307301	TOCTOCOLOT	10405579301	1000	10405537301	1	1949569391	100000000000000000000000000000000000000	10405608302	7000000	elevation 168 5	201	Torrector	for each year	60409999302
cyp_CurrentDischarges_woPit129-Base	0	Ø		0		4		0		0		0	1 IF5272							0		0		0		0		0	portion of Caddo Lake un to	3		diversion from Caddo Lake	
⊣	-	l	1		Н		⊣		1		Н		1		Н		Н		Т		$\leftarrow$		1		1		1		xas'	Т		ana's	<b>-</b>
REC19	0.979 0.5841 REC19860404	0.979 0.5841	REC19860729	0.979 0.5841	REC19861125	0.979 0.5841	IND19880121	0.979 0.5841	IRR19890112	0.979 0.5841	IRR19890810	0.979 0.5841	CONST19891214		MUN19891214		REC19891214		REC19900710	0.979 0.5841	IND19950522	0.979 0.5841	REC19950801	0.979 0.5841	IRR19980320	0.979 0.5841	REC19980320	0.979 0.5841	right is to fill Texas'	OTHER99999999		water right is for Louisiana's	SECTOR CALLOIN
0 0	166	550	0	300	0	277	0	477	0	60.0	0	86	1025.6		6180	12720	0	12720	0	80	0	173.7	0	296	34	55.6	0	55.6	water rig	0	125000	water rig 40000	0000
WR 10020	WS 10020 WRD10120	WSD10120	WRC10050	WSC10050	WRF10100	WSF10100	WRA10280	WSPONDH1	WRB10300	WSB10300	WRB10260	WSB10260	IFD10110	<del>(</del>	WRD10110	WSLKGILM	WRD10110	WSLKGILM	WRF10090	WSF10090	WRA10260	WSPONDH4	WRE10080	WSE10080	WRE10090	WSE10090	WRE10090	WSE10090		WRF10005	WS CADDO	** This was ware was ware ware ware ware ware ware ware ware	

S CADDO 165000

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Storage-Area Tables

**	D	1999	3000	7 T P P	9500	14999	)) 1000	30000	19999	7.7.000 7.7.000	70000	97999
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
*												
NSNHOCAS	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
*												
** Carollo add		itional	additional SVSA curve	rve for Pit	Pit 129.							
**SVPIT129	0	9,	1 16		1 35			4 141	0 2079	9 3759	9 4090	5355
**SAPIT129	0	12	2 16	6 20		3 25	.5 33		Ψ			
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** Drought Indices	Indice	ίς										
** The Ded Diver Compact contains a may consumptive use limitation on Toyas's diversions downstream of		1	7	) M	O	VO 1160 ]	1 m 1 + 0 + 1 0	n on Tov	ocic div	one i one	downstra:	of m

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

<sup>\*</sup> \*

<sup>1</sup> CADDO

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### cyp\_CurrentDischarges\_woPit129-FYLOTP

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cyp\_CurrentDischarges\_woPit129-FYLOTP

		2 Full Authorized Diversions, No Return Flows	T3 Updated 6/18/2015 KA	*
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General Comments \* \* \*

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\*\* Monthly Water Use Factors
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76	99	0.091	0.078	0.077	9.076	0.162	0.038	0.077	0.087	0.083	0.083
76	99	0.084	9.016	0.081	9.072	0.051	0.053	0.081	0.090	0.083	0.083
99	99	9.016	0.085	0.080	0.084	0.013	0.097	0.080	0.00	0.083	0.083
69	9/	0.075	680.0	0.020	0.104	0.004	0.142	0.084	0.088	0.083	0.083
69	9/	0.020	0.100	6,063	0.109	0.001	0.241	0.080	0.084	0.083	0.083
69	9/	0.077	0.100	9.068	0.109	0.000	0.200	0.02	080.0	0.083	0.083
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                                                                                                                                                                                                                                                                        ** Carollo add additional control point for modeling of pit 129
                                                                                                                                                                                                                                                                                                CPTCUSBC
                                                                                                                                                                                                                                                                                                         ** Carollo add additional control points for flow analyses regarding permitting of pit 129
**CP585001
                                **CP585004
                                          **CP585005
                                                   ** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
                                                                                                                                                     **CP585006
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cyp\_CurrentDischarges\_woPit129-FYLOTP

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	for A58 for A58 C4582,	10370 A10340 10350 A10340 10340 A10300 1PA10300 A10000 10290 A10200 10280 A10240 10280 A10240 10260 A10200 10240 A10000 10200 A10000 10100 A10000 10100 A10000 10100 A10000 10100 A10000 101000 A10000 10120 A10000
PPDISC TCUSBC TCUSBC TCUSBC	85011 A10070 85012 A10010 add control points 81431 581432 81432 A10260 81433 A10240 add control points 81301 D10000 81302 D10000 81303 D10000 additional CPs for 58232 B10170	A10340 A10340 A10300 A10200 A10200 A10200 A10000 A10000 A10000 A10000 A10000 A10000 A10000
CP585005 CP585004 CP585003 CP585002	иии иии иии 44	** CPA10370 A: CPA10350 A: CPA10340 A: **CPA10300 A: ** CPA10290 A: CPA10290 A: CPA10290 A: CPA10240 A: **CPA10240 A: **CPA10200 A: ** CPA10240 A: ** CPA10200 A: ** CPA10240 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10200 A: ** CPA10120 A: ** CPA101

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	A10010	CPA10030
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7 513	A10010	CPA10060
7 513	A10010	CPA10070
7 513	TCUSBC	CPA10090

cyp_CurrentDischarges_woPit129-FYLOTP	7 OAD412	7 OAD412	7 513	7 513	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 QAD412	7 0AD413	7 0AD413	7 NONE	7 QAD413	7 QAD413	7 0AD413	7 0AD413	9 NONE	7 513	7 513	7 513	7 0AD412	7 QAD412	7 NONE	7 513	7 QAD412	9 NONE	7 QAD512	7 513	7 NONE	7 NONE	7 NONE	7 NONE	7 NONE	7 NONE	7 NONE	7 NONE
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				nt Inflow Records	** Constant
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	NONE	NONE	2	TUO	CPLVGSTN
	NONE	NONE	2	OUT	CPJEFFSN
	NONE	NONE	2	OUT	CPHGHSPR
	NONE	NONE	2	OUT	CPDNGRFD
	NONE	NONE	2	OUT	CPAVNGER
	NONE	NONE	2	OUT	CPB20MUN
	NONE	NONE	2	OUT	CPB70DUM
	NONE	NONE	2	OUT	CPB270DM
	NONE	NONE	2	OUT	CPA240DM
	NONE	NONE	2	OUT	CPSULPHR
	NONE	NONE	2	OUT	CPSABINE
			0	OUT	CP 513
			0	OUT	CPQAD512
			0	OUT	CPQAD413
			0	OUT	CPQAD412
	NONE		7	OUT	CP 10010
	QAD413		7	10010	CP 10020
	QAD413		7	10010	CP 10040
	QAD413		7	10040	CP 10050
	NONE		0	OUT	CPF10000
			7	F10000	CPF10005
	513		7	F10005	CPF10020
	QAD412		7	F10020	CPF10030
	513		7	F10005	CPF10080
	QAD413		7	F10080	CPF10090
	QAD512		7	F10080	CPF10100
	513		7	F10080	CPF10110
	513		7	F10080	CPF10120
				F10080	CPF10130
woPit129-FYLOTP	CurrentDischarges w	rentDi	cyp Cur		

Cyp_CurrentDischarges_woPit129-FYLOTP			, add inflow representing a 10 year minimum return flow for Pilgrims Pride WMTP	11MM 1351 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
harges_wa	41.43	50.42	um return	151	178
rentDisc	44.71	41.43	ar minim	155	202
cyp_Cur	49.72	38.05	a 10 ye	143	146
	53.28	36.83	esenting	162	142
	47.26	39.96	low repre	184	173
:		40.91	add inf	146	146
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	-1810310 5-	· ·	0	CIPPDISC	<b>⊢</b> *

*					
<pre>** Water Rights **</pre>		Associated R	and Associated Reservoir Storage Information		
** Carollo a **WR585100	dd water 482	add water right for modeling 482 IND20181231 1	odeling of pit 129 31 1	OCTHOOOD	, ,
**WSPIT129 **	5355			104600F   129	P1129
**TXU app 58	5850, 6/24	6/24/05, kb			
		IND20041231		10/05050001	0101
WR585002	0	IND20041231	. —	10403030001 10405850003	0000 0000
SO			BACKUP	700000000	9000
WR585003	0	IND20041231	1	10405850003	7070
20			BACKUP		9191
WR585004	0	IND20041231	1	19495859994	6267
20			BACKUP	1000000000	acoc
WR585005	0	IND20041231	П	10/05850005	0101
20			BACKUP	COOCCOCOTOT	9000
WR585006	0	IND20041231	Ţ	10405850006	בסבס
20			BACKUP	000000000	9696
WR585007	0	IND20041231	1	10/05850007	0000
SO			BACKUP	100000000	9000
WR585008	0	IND20041231	П	10405850008	5850
SO			BACKUP		2
WR585009	0	IND20041231	1	10405850009	5850
20			BACKUP		)
WR585010	0	IND20041231	1	10405850010	5850
20			BACKUP		)
WR585011	0	IND20041231	1	10405850011	5850
50	,		BACKUP		
WK585012	0	IND20041231	Т	10405850012	5850
05			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850

4334	10404334305	Ъ	REC19830222	0	WRD10170
		0	0.979 0.5841	130	WSLKAUTM
4334	10404334304	ы		0	WRD10180
		0	0.979 0.5841	6	WSDOGWOD
4334	10404334303	щ		0	WRD10140
		0	0.979 0.5841	3.4	WSBASSLK
4334	10404334302	H		0	WRD10160
		0	0.979 0.5841	6.7	WSWHTOAK
4334	10404334301	Н	REC19830222	0	WRD10130
		BACKUP			SO
	10405813002	Н	581320031001	0	WR581302
		BACKUP			SO
	10405813003	Ь	581320031001	0	WR581303
	10405813001	Н	581320031001	685	WR581301
				APPLICATION 5813	** APPLIC
			0.4012 0.856	1495	WS HR10
	10405814303	Н	OTHER20031028	0	WR581433
			0.979 0.5841	263	WS HR21
	10405814302	⊣	OTHER20031028	0	WR581432
			0.979 0.5841	356	WS HR9
	10405814301	Н	OTHER20031028	0	WR581431
			14	APPLICATION 5814	** APPLIC/
					*
			0.979 0.5841	245.1	WSR58502
5850	10405850302	Ь	IND20041231	0	WR585032
			0.4012 0.856	604.8	WSR58505
5850	10405850305	Ь	IND20041231	0	WR585035
			0.979 0.5841	287.3	WSR58503
5850	10405850303	ב	IND20041231	0	WR585033
			0.979 0.5841	509.3	WSR58504
5850	10405850304	Ь	IND20041231	0	WR585034
			0.979 0.5841	327	WSR58506
5850	10405850306	Н	IND20041231	0	WR585036
			0.979 0.5841	271.4	WSR58501
5850	10405850301	Ь	IND20041231	0	WR585031
			0.979 0.5841	525.6	WSR58507
5850	10405850307	ш	IND20041231	0	WR585037
		BACKUP			SO
	<pre>cyp_CurrentDischarges_woPit129-FYLOTP</pre>	cyp_Cu			

	4334	7007	4334	43/19	) †		4349	0101														4560 CYPRESS	4560 CYPRESS	4560 CYPRESS		4560 CYPRESS		4560 CYPRESS	
YLOTP	10404334306	7000000000	1046433430/	10404349001	1000		18484349882	1000		10404522391	1000	18484575181	60404558301	Torontotoo	60404559301	Torretore						60404560301	60404560302	60404560303		60404560304		60404560305	
cyp_CurrentDischarges_woPit129-FYLOTP 0				-	I		$\vdash$	l				-	I																
scharges																										A10020			
rrentDi																						0.600				0.700			
rp_cu 9	d	0	0		0			0			0			0		0						7				7			
ΰ	Н	Н	ı	1			Н			7		T	1		⊣							7	$\vdash$	7		Н		Н	
0.979 0.5841	REC19830222	(FC15	0.979 0.5841	MUN19830418	0.979 0.5841		IND19830418	0.979 0.5841	1281	REC19841127	0.979 0.5841	IRR19841218	REC19750106	0.979 0.5841	REC19751215	0.979 0.5841			Springs			MUN19700720	MUN19660131	IRR19700720		IND19700720		REC19660131	
·	10 0	•	5	2343	8.29	3293.45	1281	8.29	3293.45	0	380	202.5	0	350	0	230			Lake Cypress			1392 72800	1000 72800	210	0087/	0	72800	0	72800
WSCATFSH	WRD10150 WSLKPTNF	WRD10190	WSLKWALL	WRF10080	-10080	SO		-10080				WRF10180	WRA10370	WSA10370	WRA10350	WSA10350	*	*		<del>+</del>	<del>*</del>	WRA10340 WSLKCYPS **	WRA10340 WSLKCYPS **	WRA10340	WSLKLYPS **	WRA10340	WSLKCYPS **	WRA10340	WSLKCYPS **

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WRA10200		** LOTP W WRA10200	** LOTP WWRA10200	WRA10200 WSBOBSAN	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	** Lake	*	*	WRA10240 WSLKMONT **	WRA10240 WSLKMONT **	*	** Lake	*	WRA10300 WRA10290 **
19600	ING AUTHOR	ATER FROM 10000	ATER FROM 1449 213350	0 213350	4693 213350	8000 213350	7000 213350	Bob Sandlin			1000 40100	15300 40100		Lake Monticello		11.61 24.0
A10200 19600 IND19780313 1	REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE	BOB SANDLIN - IND19711220	BOB SANDLIN - MUN19711220	REC19711220	IND19711220	IND19711220	MUN19711220	3			IND19730604	IND19700406				IRR19630831 IRR19630801
NLY.	SANI	IND /	MUNI 1	Н	щ	Н	ب				1	ъ				р р
	NIJ	ОНТИА	AUTH 2		2		2									
	WATER R	IND AUTHORIZATION	AUTHORIZATION 2 0.600 B		0.700		0.600									
	IGHT.	Z	ON B10310				A10020									
	NOTE		10				20									
	THAT															
	SIHT		2ME													
60404	AUTH	1TXU_	2MEMBERS	60404	60404	60404	60404				60404	60404				60404 60404
564304	WAS	MONTE	FRMBOB	.564305	.564303	-564302	.564301				.563302	563301				60404561001 60404562002
4	DEEMI	mi	æ	γ.	ü	)2	)1				)2	)1				)1
4564	ED T0	4590	4590	4564	4564	4564	4564				4563	4563				
BOBROR	DEEMED TO NOT HAVE															
ROR	HAVE	ВОВ	вов	вов	ВОВ	вов	вов									
	ACCESS	вов сотрвов	LOTPBOB													
	T0															

5301 4565		5302 4565		שאבע צמצב		1301	1000	73.01	<b>.</b>	3301		3301 4569		1307 1560		1301 4570		3302 4570		301		381		3301	!	3001	1991 4574			1301 4574					3301
68484565381		60404565302		60404565303		69494566391		60404567391		69494568391		60404569301		68484569382		60404570301		60404570302		69494571391		60404572391		10404573301		60404573901	60404574001			60404574301					60404575301
0.600 A10020	1											A10020				A10020																			
0.600		0.700										0.600				0.600																			
	0	7	0		0		0		0		0	7	0		0	7	0		0		0		0		0			0			0	0			
7		Т		Н		┰		7		Н		1		7		Н		Н		П		٦		7		Н	Н			Н					7
MUN19550822	0.4012 0.856	IND19550822	0.4012 0.856	REC19550822	0.4012 0.856	IRR19591231	0.979 0.5841	IRR19561231	0.979 0.5841	IRR19631231	0.979 0.5841	MUN19380317	0.4012 0.856	REC19380317	0.4012 0.856	MUN19750120	0.979 0.5841	REC19750120	0.979 0.5841	IRR19631231	0.979 0.5841	IRR19631231	0.979 0.5841	IND19850604	0.979 0.5841	IRR19551231	IRR19511231	0.979 0.5841	1.40	IRR19511231	0.979 0.5841	0.979 0.5841		1.40	REC19730430
642	2700	0	2700	0	2700	21.44	0.23	9	S	7.5	35	400	1176	0	1176	0	100	0	100	4	12	4.4	10	25.3	45	11	0	5.0	5.43	1.4	0.5	5.0	5.0	5.43	0
WRA10120	WSTANKSL	WRA10120	WSTANKSL	WRA10120	WSTANKSL	WRA10090	WSA10090	WRA10100	WSA10100	WRA10050	WSA10050	WRA10070	WSNEWCTY	WRA10070	WSNEWCTY	WRA10060	WSOLDCTY	WRA10060	WSOLDCTY	WRA10040	WSA10040	WRA10030	WSA10030	WRE10020	WSE10020	WRA10010	WRB10320	WSOFF320	SO	WRB10320	m	WSOFF320	OR	SO	WRB10290

** Fill f WRB10170 WSELLISN	B10170 ELLISN	WRB10170 WSELLISN **	** Cypress  ** is used  ** Ellison  **	*	WSB10180 **	WRB10180	WSB10200	WRB10200	WRB10210	WSB10220	WRB10220	WSB10230	WRB10230	*	*	WRB10270 WS WELSH **	*	WS WELSH	** Welsh	*	*	WSB10290 **
from Cypress 24700	21000 24700	2000 24700			510	0	0. 5	ر 1	ر د د	¦	6	96	124			0 23587		23587	Reservoir			80
ess Creek at priority 19421130 1	IND19421130	MUN19720508	Crk diversion point, to supplement water s Creek Reservoir		0.979 0.5841	_	0.979 0.5841	TRR19581231	1KK19531231	0.979 0.5841	IRR19521231	0.979 0.5841	IRR19500930			REC19730910			TND19730910			0.979 0.5841
iori 1	H	щ	CP B:			Ы	ŀ	<u> </u>	H		Ь		ш			Н		ı	_			Ç
y			Crk diversion point, CP B10150 which is on Cypress Crk, downs to supplement water supply to Ellison Crk Reservoir using the Creek Reservoir		0		0	ď	Ø	0		0										0 C)P_call clicatschal &cs_wortct52-11
60404582004	60404582002	60404582001	downstream of Eing the SO Record			60404581301		69494589391	604045/9301		60404578301		60404577301			60404576302			60101576301			7
4582 ELLISON	4582 ELLISON	4582 ELLISON	tream of Ellison Reservoir, SO Record.													4576		Č	1576			

26000 B10150

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** Miscel. **	laneous	Miscellaneous impoundments on Barnes Cr etc.	Barnes	Cr etc.		
WR458232 WSBARNES	9	OTHER19720508	d		60404582303	4582 barnes
WR458232 WSBARNES	24000	197	Ø		4582BU	4582 barnes
0S *		458237	BACKUP			
<del>*</del>						
WRB10120	38.3	IRR19620731	⊣		60404583301	
WSB10120	4.79	0.979 0.5841	0		Torrortotoo	
WRB10110	14.2	IRR19480930	⊣		60404584301	
WSB10110	99	0.979 0.5841	0		10000	
WRB10100	0.56	IRR19550331	1		60404585301	
WSB10100	20	0.979 0.5841	0		H	
WRB10090	1	IRR19641231	Н		60404586301	
WSB10090	12	0.979 0.5841	0			
WRB10080	150	IRR19561231	П		60404587301	
WSSIMPSN	2500	0.4012 0.856	0		1	
<del>*</del>						
**						
*						
** Wilkes	Reservoir	oir (aka Johnson	Reservoir)	, r.		
WRB10070 WSJOHNSN **	6668 10100	IND19			60404588301	4588
WRB10070 WSJOHNSN **	9 10100	REC19600504	Н		60404588302	4588
**						
WRB10050 WSB10050 **	240	REC19751208 0.979 0.5841	1 0		60404589301	

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Lake O'the Pines

0

IND19880121 0.979 0.5841

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WRA10280 WSPONDH1

SVJOHNSN SAJOHNSN SVLKCYPS SALKCYPS	** Storage-Areā ** Storage-Areā ** SVLKMONT 0 SALKMONT 0 SVBOBSAN 0 SABOBSAN 0	This F10005 CADDO	This F10005				WRF10090 WSF10090 WRA10260		WRD10110	WSB10200 IFD10110 10:		WRB10300
0000		123000 water right 40000 165000	water right 0 0	, 00 t	296 34	173.7	0 0 0 8	0 12720	6180 12720	1025.6		9 0
150 50 3000 500	Tables 1000 175 0 300	is	is to THER99	9/9 REC1		0.979 0.5841 REC19950801	REC19900710 0.979 0.5841	REC19891214	MUN19891214	CONST19891214	Η,	IRR19890112
700 110 6000 750	2000 350 5000 1100	Louis: 99999		0.5841 19980320	.5841 30320	0.5841 9950801	9900710 0.5841 9950522	91214	91214	9891214	90810	.9890112 0 5841
1400 170 11000 1100	5500 700 17500 2300	for Louisiana's di 199999999 1	Texas' por	, d	1 0 0 0	1 6	9 1	Н	Ы	1 1	<b>р</b>	cyp_cu 1 a
2400 245 20000 1600	9500 975 35000 3400	diversion from Caddo	portion of Caddo									CYP_CURRENTUISCHARGES_WOPIT129-FYLOTP L B
3900 340 30000 2100	14000 1150 57500 4450	from Cad	Caddo Lake									charges_v
5700 445 47000 2700	22500 1475 87500 5600	Lake	ke up to				1			IF5272		woPit129-
7800 550 72000 3450	30000 1725 155000 8000	for each 60409	el	10405	10405	10405	10405	10405	10405		10405	
9600 650 92000 4150	40000 2000 190000 8950	each year 60409999302	evation 168.5 60409999301	10405608302	10405608301	10405537301	)5302301	5272302	5272301		5251301	5212301
12600 790 120000 5100	55000 2525 270000 10750	9999	5 feet 9999	5608	5608			5272	5272			
15800 900 186000 7150	70000 3100 350000 12350											

1930	5355 98
47000 2200 40000 1865	4090
36500 1860 259000 18500 36000	3759 62
27500 1620 1620 1625 16250 365000 64250 30100 1600 1630	2079
Cyp_CurrentDischarges_woPit129-FYLOTP 7500 9250 11750 15500 20500 6600 780 920 1090 1340 6000 18000 36000 74000 12750 70000 140000 235000 370000 560000 820500 27750 34500 42250 51500 44000 8200 11200 1130 1230 4980 8230 12270 17270 23420 570 720 895 1100 1350	1410 39
oPit129- 15500 1090 74000 74000 170000 17400 1130 1130 1130	1054 33
harges_w 11750 920 36000 6000 235000 34500 12000 12270 890	479
rentDisc 9250 780 18000 3000 140000 2 27750 8200 710 8230	.t 129. 359 23
Cyp_Cur 7500 660 6000 1000 70000 1 20500 400 470 470	e for Pit 251 20
6000 580 400 35000 15000 2600 370 2470	dd additional SVSA curve 0 94 161 0 12 16
3500 500 50 50 10000 8500 500 130 670	ltional S 94 12
0000000000	add addi
SVELLISN SAELLISN SVLKOPNS SALKOPNS SV CADDO SA CADDO SA WELSH SV WELSH SVLKGILM SALKGILM	** Carollo add **SVPIT129 **SAPIT129 **

\*\* Drought Indices

\*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

\*\* Therefore, this DI record is only included as a place holder.

Streamflow And Evaporation Records

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			m																								
9-Base			0																								
es_wPit12		,	Ø				EVI OTP	80B																			
cyp_CurrentDischarges_wPit129-Base n Flows			'n			18488PT129			10405850307	10405850301	10405850306	10405850304	10405850303	10405850305	10405850302				9/	99	0.091	0.078	0.077	9.02	0.162	0.038	0.077
p_Currer Flows		=======================================	    6          																9/	99	0.084	9.020	0.081	0.072	0.051	0.053	0.081
<u> </u>			======= ==============================			10	) İ	10	10	10	10	10	10	10	10				99	99	9.016	0.085	0.080	0.084	0.013	0.097	080.0
cyp_Cur ailability Modeling Diversions, No Return Flows 5 KA			11			100	100	100	100	100	100	100	100	100	100		ırs		99	9/	0.075	680.0	0.020	0.104	0.004	0.142	0.084
	s,		    			1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		se Factors		99	9/	0.070	0.100	0.063	0.109	0.001	0.241	0.080
Cypress Water Availability Modeling Full Authorized Diversions, No Retu Updated 6/18/2015 KA	Comments	1978	11			10000	241800	48500	10000	10000	10000	10000	10000	10000	10000		Monthly Water Us		99	9/							0.079
Cypress Full Au Updated	General	=======================================	=======================================	,	<del>ল</del> 	( 1	/ 1.0	1.0						1			Monthly		5813		MON		QNI		IRR		Z K
1222**	* * * *	" *	) * ( ) * (	2	S *	**FY	**FY	**FY	**FY	**FY	** ¥¥ •	<b>≯</b> ± *	<b>≻</b> * · *	¥ ¥ **	<b>≯</b> ∃**	* *	* *	* *	S	S	) N	S	) N	S	Ŋ	) N	) N

cyp_CurrentDischarges_wPit129-Base	** Carollo modity existing CPs to include new tracking CP for Pit 129 analyses	
	5	
	S	
•	existing	
:	modity	A10000
, , , , , , , , , , , , , , , , , , ,	Carollo	**CDESEGGE A1GGG
÷	+	**

	513 513	7		B10040 B10040	CPB10110 CPB10100
	513	7		B10040	CPB10120
	NONE	7		B10040	CPB10150
		7		B10150	CPB10170
	513	7		B10170	CPB10180
	513	7		B10150	CPB10200
	513	7		B10150	CPB10210
	513	7		B10230	CPB10220
	513	7		B10170	CPB10230
	QAD413	7		B10150	CPB10250
	QAD413	7		B10150	CPB10260
		7		B10150	CPB10270
	QAD413	7		B10150	CPB10290
	QAD413	7		B10150	CPB10300
	NONE	7		B10150	CPB10310
	QAD413	7		810310	CPB10320
	NONE	0		B10150	CPA10000
	513	7		A10000	CPA10010
	NONE	7		A10010	CPA10020
	QAD413	7		A10010	CPA10030
	513	7		A10010	CPA10040
	513	7		A10010	CPA10050
	513	7		A10010	CPA10060
	513	7		A10010	CPA10070
	513	7		TCUSBC	CPA10090
	513	7		TCUSBC	CPA10100
	513	7		TCUSBC	CPA10120
ω	513	7		)0 A10000	**CPA10090
ω .	513	7		00 0010000	**CPA10100
ω	513	7		20 A10000	**CPA10120
for Pit 129 analyses	new tracking CP	include	existing CPs to	modify	** Carollo
		7		A10000	CPA10200
		7		A10200	CPA10240
I	I	7:		10 A10000	**CPA10240
cyp_CurrentDischarges_wPit129-Base	CurrentDischa	сур			

cyp_CurrentDischarges_wPit129-Base	513	0,00,013			NONE	0AD413	0AD413	0AD413	QAD413	NONE	QAD412	QAD412	QAD412	513	513	0AD412	QAD412	QAD412	QAD412	QAD412	0AD412	QAD413	QAD413	NONE	QAD413	QAD413	QAD413	OAD413	NON	513	513	513	QAD412
cy 7		, _	,	7	0	7	7	7	7	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	0	7	7	7	7
810040	B10040 B10040	B10040	40 B10000	B10000	F10230	C10010	C10010	C10010	C10000	F10180	D10000	D10000	D10160	D10150	D10130	D10130	D10000	D10000	D10000	D10000	D10000	D10000	D10000	D10000	D10000	D10000	D10000	D10000	E10060	E10080	E10060	E10060	E10040
CPB10090	CPB10080 CPB10070	CPB10050	**CPB10040	CPB10040	CPB10000	CPC10050	CPC10040	CPC10030	CPC10010	CPC10000	CPD10190	CPD10180	CPD10170	CPD10160	CPD10150	CPD10140	CPD10130	CPD10120	CPD10110	CPD10090	CPD10080	CPD10070	CPD10060	CPD10050	CPD10040	CPD10030	CPD10020	CPD10010	CPD10000	CPE10090	CPE10080	CPE10070	CPE10060

CPQAD412 CPQAD413 CPQAD512 CP 513 CPSABINE CPSULPHR	CPF10000 CPF10000 CP 10050 CP 10040 CP 10010	CPF10110 CPF10110 CPF10090 CPF10090 CPF10030 CPF10020	CPE10050 CPE10040 CPE10010 CPE10000 CPE10000 CPF10230 CPF10230 CPF10120 CPF10190 CPF101170 CPF101170 CPF101170 CPF101170
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10040 10040 10010 10010 0UT	F10080 F10080 F10080 F10005 F10005 F10005	E10040 E10000 E10000 F10160 F10230 F10230 F10220 F10130 F10130 F10130 F10130 F10130 F10130 F10080
22000	77770		17777777700777
NONE			
NONE	NONE QAD413 QAD413 QAD413 QAD413 NONE	513 513 QAD512 QAD413 513 QAD412 513	QAD412 NONE 513 QAD412 NONE NONE NONE NONE NONE NONE NONE NON
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		Pride WWTP	PT129	5850 5850
as e	11 (0 11	Pilgrims Pric	104000PT129	10405850001 10405850002
129-B		ır Pil	104	104
S_wPit.	-3	·low fo	_	
Cyp_CurrentDischarges_wPit129-Base NONE	ZERO	.72 44.71 41.43 .05 41.43 50.42 10 year minimum return flow for 143 155 151 146 202 178	Water Rights and Associated Reservoir Storage Information arollo add water right for modeling of pit 129 5100 482 IND20181231 1 1.0 T129 5355	
yp_Currel None None None None None None None	2 ZERO	44.71 41.43 ear minim 155 202	Storage pit 129 1.0	
0000000000	2	4 w w	servoir eling of 1 1	1 1 BACKUP
		nt Inflow Records 50.42 47.26 53.28 40.91 39.96 36.83 add inflow representing 146 184 162 146 173 142	<pre>dights and Associated Reservoir S add water right for modeling of 482 IND20181231 1 1 5355</pre>	05, kb IND20041231 IND20041231
0UT 0UT 0UT 0UT 0UT 0UT 0UT	OUT	Inflow Records .42 47.26 .91 39.96 d inflow repre 146 173	id Asso ir righ	6/24/05,   IND2() IND2()
	II 		Rights an add wate 482 5355	5850, 6/2 50 0
CPA240DM CPB270DM CPB20DUM CPB20MUN CPAVNGER CPDNGRFD CPHGHSPR CPJEFFSN CPLVGSTN CPLVGSTN **	li li	** Constant ** CIB10310 5 CI ** Carollo a CIPPDISC CI **	** Water F ** Carollo WR585100 WSPIT129 **	**TXU app WR585001 WR585002 SO

9585	10405850302	Ь	IND20041231	0	WR585032
1			0.4012 0.856	604.8	WSR58505
5850	10405850305	Н	IND20041231	0	WR585035
			0.979 0.5841	287.3	WSR58503
5850	10405850303	1	IND20041231	0	WR585033
			0.979 0.5841	509.3	WSR58504
5850	10405850304	1	IND20041231	0	WR585034
			0.979 0.5841	327	WSR58506
5850	10405850306	<b>–</b>	IND20041231	0	WR585036
			0.979 0.5841	271.4	WSR58501
5850	10405850301	Н	IND20041231	0	WR585031
			0.979 0.5841	525.6	WSR58507
5850	10405850307	ሥ	IND20041231	0	WR585037
		BACKUP			SO
5850	10405850013	Ь	IND20041231	0	WR585013
  -  -		BACKUP			SO
5850	10405850012	Н	IND20041231	0	WR585012
 		BACKUP			SO
5850	10405850011	Ь	IND20041231	0	WR585011
		BACKUP			SO
5850	10405850010	1	IND20041231	0	WR585010
		BACKUP			SO
5850	10405850009	Н	IND20041231	0	WR585009
		BACKUP			SO
5850	10405850008	1	IND20041231	0	WR585008
		BACKUP			S0
5850	10405850007	Ь	IND20041231	0	WR585007
		BACKUP			S0
5850	10405850006	<u> </u>	IND20041231	0	WR585006
	j	BACKUP			S0
5850	10405850005	Н	IND20041231	0	WR585005
		BACKUP			SO
5850	10405850004	Н	IND20041231	0	WR585004
		BACKUP			SO
5850	10405850003	Н	IND20041231	0	WR585003
	<pre>cyp_CurrentDischarges_wPit129-Base</pre>				

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WSR58502 245.1 0.979 0.5841 \*\*

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14	OTHER20031028	OTHFR20031028	0.979 0.5841	0	0.4012 0.856	m	581320031001	581320031001		581320031001		REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	REC19830222	0.979 0.5841	MUN19830418	0.979 0.5841	2343	IND19830418	
** APPLICATION 581	9 7 7 7	9	263	0	1495	CATION 581	685	0		0		0	6.7	0	3.4	0	9	0	130	0	5	0	10.5	0	5	2343	8.29	3293.45	1281	
** APPLIC	WR581431 WS HR9	581	WS HR21	WR581433	WS HR10	** APPLIC	WR581301	WR581303	20	WR581302	20	WRD10130	WSWHTOAK	WRD10160	WSBASSLK	WRD10140	MSDOGMOD	WRD10180	WSLKAUTM	WRD10170	WSCATFSH	WRD10150	WSLKPINE	WRD10190	WSLKWALL	WRF10080	WSF10080	20	WRF10080	

				,	JP_carre		0 (0   + 4		
WRB10250	0	_	<b>—</b>					10404522301	
WSB10250	380	0.979 0.5841		0					
WRF10180	202.5	IRR19841218	Н				Ц	10404525101	
WRA10370	0	REC19750106	Н					60404558301	
WSA10370	350	0.979 0.5841		0					
WRA10350	0	REC19751215	Н					60404559301	
WSA10350	230	0.979 0.5841		0					
*									
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Lake	Cypress S	Springs							
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WRA10340 WSLKCYPS **	1392 72800	MUN19700720	Н	2	0.600			60404560301	4560 CYPRESS
WRA10340 WSLKCYPS	1000 72800	MUN19660131	Ь					60404560302	4560 CYPRESS
101010	710	1010700700	۷					6040456000	VECO CADDECC
WRA10340 WSLKCYPS **	210 72800	IRR19700720	Н					60404560303	4560 CYPRESS
WRA10340 WSLKCYPS **	0 72800	IND19700720	H	2	0.700	A10020		60404560304	4560 CYPRESS
WRA10340 WSLKCYPS **	0 72800	REC19660131	Н					60404560305	4560 CYPRESS
*									
WRA10300	11.61	IRR19630831	Ь					60404561001	
WRA10290 **	24.0	IRR19630801	Н					60404562002	
*									
	Lake Monticello	0							
**									

					вов	BOB	вов	BOB	BOB LOTPBOB	BOB LOTPBOB	DEEMED TO NOT HAVE ACCESS TO	BOBROR			
4563	4563				4564	4564	4564	4564	4590	4590	MED TO N	4564		4565	4565
oit129-Base 60404563301	60404563302				60404564301	60404564302	60404564303	60404564305	2MEMBERSFRMBOB	1TXU_MONTE	THAT THIS AUTH WAS DEE	60404564304	## ## ## ##	60404565301	60404565302
cyp_CurrentDischarges_wPit129-Base 60404					2 0.600 A10020		2 0.700		AUTHORIZATION 2 0.600 B10310	IND AUTHORIZATION 1	SANDLIN WATER RIGHT. NOTE THAT LY.			2 0.600 A10020 0	2 0.700
$\leftarrow$	н				н	н	1	Н	MUNI A	IND AL	SANDL	Н	22	Н	Н
IND19700406	IND19730604			in	MUN19711220	IND19711220	IND19711220	REC19711220	** LOTP WATER FROM BOB SANDLIN - M WRA10200 1449 MUN19711220 WSBOBSAN 213350	** LOTP WATER FROM BOB SANDLIN - I WRA10200 10000 IND19711220 WSBOBSAN 213350	** REMAINING AUTHORIZATION OF BOB SAN ** BOB SANDLIN STORAGE, INFLOWS ONLY.	IND19780313	=======================================	MUN19550822 0.4012 0.856	.95
15300 40100	1000 40100			Bob Sandlin	7000 213350	8000 213350	4693 213350	9 213350	TER FROM 1449 213350	TER FROM 10000 213350	NG AUTHOFIDEIN STOF	19600		642 2700 (	
WRA10240 WSLKMONT **	WRA10240 WSLKMONT **	*	*	** Lake B **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN **	WRA10200 WSBOBSAN	** LOTP WA WRA10200 WSBOBSAN	** LOTP WA WRA10200 WSBOBSAN	** REMAINI ** BOB SAN	WRA10200 **	Ш	WRA10120 WSTANKSL	WRA10120

			0		0.979 0.5841	88	**
	60404575301			Ь	19	0	WRB10290
					1.40	5.43	SO
						5.0	OR
			0		0.979 0.5841	5.0	WSOFF320
			0		0.979 0.5841	0.5	WSB10320
4574	60404574301			ш	IRR19511231	1.4	WRB10320
					1.40	5.43	90
			0		0.979 0.5841	5.0	WSOFF320
4574	60404574001			حر	IRR19511231	0	WRB10320
	60404573001			щ	IRR19551231	11	WRA10010
			0		0.979 0.5841	42	WSE10020
	10404573301			بــر	IND19850604	25.3	WRE10020
			0		0.979 0.5841	10	WSA10030
	60404572301			щ	IRR19631231	4.4	WRA10030
			0		0.979 0.5841	12	WSA10040
	60404571301			Ц	IRR19631231	4	WRA10040
			0		0.979 0.5841	100	<b>WSOLDCTY</b>
4570	60404570302			Н	REC19750120	0	WRA10060
			0		0.979 0.5841	100	<b>WSOLDCTY</b>
4570	A10020 60404570301	0.600	2	Ы	MUN19750120	0	WRA10060
			0		0.4012 0.856	1176	WSNEWCTY
4569	60404569302			Н	REC19380317	0	WRA10070
			0		0.4012 0.856	1176	<b>WSNEWCTY</b>
4569	A10020 60404569301	0.600	2	Н	MUN19380317	400	WRA10070
			0		0.979 0.5841	35	WSA10050
	60404568301			Н	_	7.5	WRA10050
			0		0.979 0.5841	ъ	WSA10100
	60404567301			ᆫ	IRR19561231	6	WRA10100
			0		0.979 0.5841	0.23	WSA10090
	60404566301			Н	IRR19591231	21.44	WRA10090
			0		0.4012 0.856	2700	WSTANKSL
4565	60404565303			Ь	REC19550822	0	WRA10120
			0		0.4012 0.856	2700	WSTANKSL
	cyp_CurrentDischarges_wPit129-Base	yp_Curre	.Q				

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60404576301	60404576302		60404577301		69494578391	1000	60404579301	1000	60404580301	Toroportotoo	60404581301	
				0		0		0		0		0
$\vdash$	↔		7		Н		Т		Н		1	
IND19730910	REC19730910		IRR19500930	0.979 0.5841	IRR19521231	0.979 0.5841	IRR19531231	0.979 0.5841	IRR19581231	0.979 0.5841	REC19690922	0.979 0.5841
eservoir 11000 23587	9 23587		124	96	9	1 0	75	64 0	2	0.5 0	0	510 0
** Welsh Reservoir WRB10270 11000 WS WELSH 23587 **	** WRB10270 WS WELSH 2 **	* * * *	WRB10230	WSB10230	WRB10220	WSB10220	WRB10210	WSB10210	WRB10200	WSB10200	WRB10180	WSB10180 **

Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir, is used to supplement water supply to Ellison Crk Reservoir using the SO Record. Ellison Creek Reservoir \* \* \* \* \* \*

4582 ELLISON	4582 ELLISON	4582 ELLISON
60404582001	60404582002	60404582004
MUN19720508 1	IND19421130 1	ress Creek at priority 19421130 1
2000 24700	21000 24700	from Cyp
WRB10170 WSELLISN **	WRB10170 21000 WSELLISN 24700	** Fill + WRB10170

** WRB10050 WSB10050	WRB10070 WSJOHNSN **	** Wilkes WRB10070 WSJOHNSN **	* :	*	*	WSSIMPSN	WRB10080	WSB10090	WRB10090	WSB10100	WRB10100	WSB10110	WRB10110	WSB10120	WRB10120	*	*	SO	WSBARNES	WR458232	WSBARNES	WR458232	** Miscel	*	SO	WSELLISN
0 240	0 10100	Reservoir 6668 10100			!	2500	150	12	Ь	50	0.56	60	14.2	4.79	38.3				24000	0	24000	0	Miscellaneous			24700
REC19751208 0.979 0.5841	REC19600504	oir (aka Johnson IND19600504				0.4012 0.856	13	0.979 0.5841	IRR19641231	0.979 0.5841	IRR19550331	0.979 0.5841	IRR19480930	0.979 0.5841	IRR19620731			458237		OTHER19720508	0.4012 0.856	OTHER19720508	impoundments on		26000 B10150	
Н	Ь	Reservoir) 1					بر		щ		<b>–</b>		1		1			BACKUP					Barnes			
0		voir)			,	0		0		0		0		0				•			0		s Cr etc.			c) F _ cm - c : cp + 1 c : c : 0 c p
60404589301	60404588302	60404588301					60404587301		60404586301		60404585301		60404584301		60404583301					4582BU		60404582303		•		i c
	4588	4588																		4582		4582				
																				barnes		barnes				

				4590 FYLOTP	4590 FYLOTP																									
			# #	45	45	ij																								
129-Base			======================================	JMUN	2IND		101101101	TOCTECHOLOO	60404592001	60404593301	1	60404594002	60404595001	60404596001	60404597301		60404598301		60404599001			60404600001	60404601301	1	60404602301		60404603301	1	60404604301	
cyp_CurrentDischarges_wPit129-Base			ZED TO BE TAKEN AT				τ-	4	_	l <del>(  </del>	l	-	· <del>~ 1</del>	1								₽								
cyp_Currer			WATER AUTHORIZED			=======================================		0			0					0		0		0				0		0		0		0
		 	Р.	-	н	    	_	l	7	۲		7	7	Н	Н		П		1			T	Н		T		Н		1	
				MUN195/0916 -1	IND19570916		IRR19670430	0.979 0.5841	IRR19690930	IRR19620531	0.979 0.5841	IRR19550103	MUN19630218	IRR19570319	IRR19760621	0.979 0.5841	IND19700126	0.979 0.5841	IRR19530731	0.979 0.5841	47	IRR19660630	REC19461121	0.979 0.5841	REC19600211	0.4012 0.856	REC19730312	0.979 0.5841	IRR19670630	0.979 0.5841
		Lake O'the Pines	LOTP DE	48878 251000	151800 251000		œ	9	96.88	85	100	1080	2000	80.21	25	35	10	2	47	7	40.42	62.5	0	135	0	1414	0	116	7.03	28
* *	* *	** Lake ( ** ======	** REDUCE	WNB18848 WSLKOPNS	WRB10040 WSLKOPNS	                      	WRF10250	WSF10250	WRF10230	WRF10240	WSF10240	WRF10220	WRF10210	WRF10190	WRC10040	WSC10040	WRC10030	WSC10030	WRC10010	WSC10010	20	WRF10170	WRD10090	WSD10090	WRD10080	WSD10080	WRD10070	WSELWOOD	WRD10060	WSD10060

			0	0.4012 0.856	600	WS 10040
	60404620301		Н	REC19781016	0	WR 10040
			0	0.979 0.5841	184	WS 10050
	60404619301		Н	REC19760524	0	WR 10050
			0	0.979 0.5841	42	WSF10020
4618	60404618302	Ь	Н	IRR19810413	51	WRF10020
			0	0.979 0.5841	42	WSF10020
4618	60404618301	Ч	Н	IRR19790221	42	WRF10020
			0	0.979 0.5841	112	WSLINDEN
	60404617301	ц	Ь	REC19720207	0	WRF10030
			0	0.4012 0.856	1325	WSSHADOW
	60404616301	ц	Н	REC19690811	0	WRF10110
			0	0.979 0.5841	54	WSF10120
	60404615301	ц	H	IRR19751215	10	WRF10120
4614	60404614002	<u> </u>	Н	MUN19561127	8442	WRF10130
4614	60404614001	Ц	H	MUN19470418	7558	WRF10130
	60404613001	-	H	MIN19690224	165.21	WRF10140
	60404612001	ц	Н	IRR19550323	46.58	WRF10160
			0	0.4012 0.856	744	<b>WSHOLMES</b>
	60404611301		Н	IND19430701	955	WRE10010
	60404610001		Ľ	IRR19551010	122	WRE10040
			0	0.979 0.5841	228.2	WSE10050
4609	60404609301		1	IND19821206	225	WRE10050
			0	0.979 0.5841	4.8	WSE10060
4609	60404609001		1	IND19680318	15	WRE10060
			0	0.979 0.5841	20	WSE10070
	60404608301		<b>L</b>	IRR19520630	18.2	WRE10070
			0	0.979 0.5841	330	WSD10010
	60404607301		<b>L</b>	REC19740812	0	WRD10010
			0	0.979 0.5841	294	WSD10020
	60404606301		1	REC19740812	0	WRD10020
			0	0.979 0.5841	114	WSD10040
4605	60404605302	•	1	REC19741209	0	WRD10040
			0	0.979 0.5841	36	WSD10030
4605	60404605301	(	<u>~</u>	REC19741209	0	WRD10030
	:129-Base	cyp_CurrentDischarges wPit129-Base				

																	5777	777	6777	7/70							2025		2602		feet	9999	000		6666
29-Base	60404621301		10405054301	1	10405080301	10000000	10405117301	100111	10405167301	100 (010)	10405717301	1017170171	10405251301	1001070101			18485272381	1017/7001	18485777387	70407717004	1040530301	10000000	10405579301	1000700000	10405537301	1	10405608301	100000000000000000000000000000000000000	10405608302	7000000	elevation 168 5	301	1000000000	for each wear	
cyp_CurrentDischarges_wPit129-Base		0		0		0		0		0		0		0	165272						_	0		0		0		0		0	portion of Caddo Lake un to	L		is for Louisiana's diversion from Caddo Lake £	
	7	•	1	•	Н	•	1	9	1	9	⊣	•	1	•	1		7		$\vdash$		_	3	⊣	S	Т	v	Н	S	⊣	S				ana's	, H
	REC19	0.979 0.5841	REC19860404	0.979 0.5841	REC19860729	0.979 0.5841	REC19861125	0.979 0.5841	IND19880121	0.979 0.5841	IRR19890112	0.979 0.5841	IRR19890810	0.979 0.5841	CONST19891214		MUN19891214		REC19891214		REC19900710	0.979 0.5841	IND19950522	0.979 0.5841	REC19950801	0.979 0.5841	IRR19980320	0.979 0.5841	REC19980320	0.979 0.5841	right is to fill Texas	OTHER99999999		right is for Louisi	
(	, S	169	0	550	0	300	0	277	0	477	0	6.00	0	86	1025.6		6180	12720	0	12720	0	80	0	173.7	0	596	34	55.6	0	55.6	water rig	0	125000	water rig	40000
	WK 10020	WS 18828	WRD10120	WSD10120	WRC10050	WSC10050	WRF10100	WSF10100	WRA10280	WSPONDH1	WRB10300	WSB10300	WRB10260	WSB10260	IFD10110	**	WRD10110	WSLKGILM	WRD10110	WSLKGILM	WRF10090	WSF10090	WRA10260	WSPONDH4	WRE10080	WSE10080	WRE10090	WSE10090	WRE10090	WSE10090	** This	WRF10005	WS CADDO	** This	WRF10005

WS CADDO 165000 \*\*

Storage-Area Tables

am of s	downstre	ersions ( e subjec	use limitation on Texas's diversions downstream of Water rights with this DI are subject to this	n on Tex with th	imitatio r rights		max consumptive is not spilling.		contains a Caddo Lake		Drought Indices The Red River Compact Lake O the Pines when	** Drough  ** The Red  ** Lake 0
	72	62	50	39	ω	25	23	20	16		0	\$APIT129 **
	4090	3759	2079	1410	1054	479	359	251	161	94	0	SVPIT129
							Pit 129.	for	SVSA curve	additional	add	** Carollo
												*
			1630	1350	1100	895	720	570	430	285	0	SALKGILM
			30860	23420	17270	12270	8230	4980	2470	670	0	SVLKGILM
1930	1865	1740	1600	1230	1130	890	710	470	370	130	0	SA WELSH
44600	40000	36000	30100	20000	17400	12000	8200	4000	2600	500	0	SV WELSH
			64250	51500	42250	34500	27750	20500	15000	8500	0	SA CADDO
			865000	560000	370000	235000	140000	70000	35000	10000	0	SV CADDO
		18500	16250	12750	9500	6000	3000	1000	500	50	0	SALKOPNS
		259000	200000	130000	74000	36000	18000	6000	400	50	0	SVLKOPNS
	2200	1860	1620	1340	1090	920	780	660	580	500	0	SAELLISN
	47000	36500	27500	20500	15500	11750	9250	7500	6000	3500	0	SVELLISN
	7150	5100	4150	3450	2700	2100	1600	1100	750	500	0	SALKCYPS
	186000	120000	92000	72000	47000	30000	20000	11000	6000	3000	0	SVLKCYPS
	900	790	650	550	445	340	245	170	110	50	0	SAJOHNSN
18000	15800	12600	9600	7800	5700	3900	2400	1400	700	150	0	NSNHOEVS
			,									*
	12350	10750	8950	8000	5600	4450	3400	2300	1100	300	0	SABOBSAN
	350000	270000	190000	155000	87500	57500	35000	17500	5000	0	0	SVBOBSAN
3675	3100	2525	2000	1725	1475	1150	975	700	350	175	0	SALKMONT
97000	70000	55000	40000	30000	22500	14000	9500	5500	2000	1000	0	SVLKMONT
												*

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.
\*\* Therefore, this DI record is only included as a place holder.

D \*

CADD0

wPit129-Base	
cyp_CurrentDischarges wPit1	

	4 0 125000 125001 865000	100 100 100 100		Streamflow And Evaporation Records		
1	TS	IP	*	* *	* *	

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cyp\_CurrentDischarges\_wPit129Div-FYLOTP T1 Cypress Water Availability Modeling Full Authorized Diversions, No Return Flows Updated 6/18/2015 KA T3 \*\* \*\* \*\* **General Comments** \*\* JD 51 1948 1 -1 -1 0 5 0 0 3 0 0 0 JO RO -1 \*\* \*\*FY 10000 1000 100 10 104000PT129 FΥ 1.0 241800 1000 100 **FYLOTP** \*\*FY 1.0 48500 1000 100 10 BOB \*\*FY 1 10000 1000 100 10 10405850307 \*\*FY 1 10000 1000 100 10 10405850301 \*\*FY 10000 1 1000 100 10 10405850306 \*\*FY 10000 1 1000 100 10 10405850304 \*\*FY 1 10000 1000 100 10405850303 10 \*\*FY 1 10000 1000 100 10 10405850305 \*\*FY 1 10000 1000 100 10 10405850302 \*\* \*\* Monthly Water Use Factors \*\* 5813 UC 60 60 60 60 76 76 UC 76 76 76 60 60 60 UC MUN 0.077 0.070 0.075 0.076 0.084 0.091 UC 0.100 0.100 0.089 0.085 0.076 0.078 IND UC 0.068 0.063 0.070 0.080 0.081 0.077 UC 0.109 0.109 0.104 0.084 0.072 0.076 UC IRR 0.000 0.001 0.004 0.013 0.051 0.162 UC 0.200 0.241 0.142 0.097 0.053 0.038

UC

UC

UC

UC

MIN

REC

0.079

0.080

0.083

0.083

0.080

0.084

0.083

0.083

0.084

0.088

0.083

0.083

0.080

0.090

0.083

0.083

0.081

0.090

0.083

0.083

0.077

0.087

0.083

0.083

```
cyp CurrentDischarges wPit129Div-FYLOTP
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
           0.083
                                   0.083
                                           0.083
UC
                   0.083
                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                     1.0
UC MONTH
                   28.25
                              31
                                      30
                                              31
                                                      30
              31
              31
                      31
                              30
                                      31
                                              30
                                                      31
UC
**
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                    NONE
                                                    NONE
CPPPDISC TCUSBC
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                     513
**
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                       7
                                                    NONE
                                       7
CP585037 A10120
                                                     513
                                       7
CP585009 A10120
                                                    NONE
CP585010 A10120
                                                    NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                       513
                                         7
                                                      NONE
**CP585007 A10000
                                         7
                                                      NONE
**CP585006 A10000
                                                     513
                                       7
CP585031 PPDISC
                                       7
                                                     NONE
CP585007 PPDISC
                                       7
                                                     NONE
CP585006 PPDISC
                                       7
                                                     513
CP585036 585034
                                                     513
CP585034 585033
                                       7
CP585033 585032
                                       7
                                                      513
                                       7
                                                      513
CP585035 585032
                                                      513
CP585032 585005
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                                      NONE
**CP585004 A10000
                                         7
                                                      NONE
                                         7
**CP585003 A10000
                                                      NONE
**CP585002 A10000
                                         7
                                                      NONE
**CP585001 A10000
                                         7
                                                       NONE
```

```
cyp_CurrentDischarges_wPit129Div-FYLOTP
CP585005 PPDISC
                                       7
                                                    NONE
CP585004 TCUSBC
                                       7
                                                    NONE
CP585003 TCUSBC
                                       7
                                                    NONE
CP585002 TCUSBC
                                       7
                                                    NONE
CP585001 TCUSBC
                                       7
                                                    NONE
CP585011 A10070
                                       7
                                                    NONE
CP585012 A10010
                                       7
                                                    NONE
CP585013 A10010
                                       7
                                                    NONE
** add control points for A5814
CP581431 581432
                                       7
                                                  QAD413
CP581432 A10260
                                       7
                                                  QAD413
CP581433 A10240
                                       7
                                                  QAD413
** add control points for A5813
CP581301 D10000
                                       7
                                                    NONE
CP581302 D10000
                                       7
                                                    NONE
CP581303 D10000
                                       7
                                                    NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                  B10170
CP458237 B10170
                                       7
                                                  B10170
CPA10370 A10340
                                       7
                                                  QAD413
CPA10350 A10340
                                       7
                                                  QAD413
CPA10340 A10300
                                       7
**CPA10300 A10000
                                         7
                                                     NONE
CPA10300 A10200
                                       7
                                                    NONE
**
CPA10290 A10200
                                       7
                                                    NONE
CPA10280 A10240
                                       7
                                                  QAD413
CPA10260 A10240
                                       7
                                                  QAD413
**CPA10240 A10000
                                         7
CPA10240 A10200
                                       7
CPA10200 A10000
                                       7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                       513
**CPA10100 A10000
                                         7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                       7
                                                     513
CPA10100 TCUSBC
                                                    513
```

#### cyp CurrentDischarges wPit129Div-FYLOTP CPA10090 TCUSBC 7 513 7 513 CPA10070 A10010 7 513 CPA10060 A10010 513 CPA10050 A10010 7 7 CPA10040 A10010 513 CPA10030 A10010 7 QAD413 NONE CPA10020 A10010 7 513 7 CPA10010 A10000 CPA10000 B10150 0 NONE QAD413 CPB10320 B10310 7 NONE CPB10310 B10150 7 7 QAD413 CPB10300 B10150 CPB10290 B10150 7 QAD413 CPB10270 B10150 7 7 QAD413 CPB10260 B10150 CPB10250 B10150 7 QAD413 7 513 CPB10230 B10170 513 CPB10220 B10230 7 7 CPB10210 B10150 513 513 7 CPB10200 B10150 7 513 CPB10180 B10170 CPB10170 B10150 7 B10040 7 NONE CPB10150 513 7 CPB10120 B10040 513 CPB10110 B10040 7 CPB10100 7 513 B10040 CPB10090 B10040 7 513 7 513 CPB10080 B10040 7 CPB10070 B10040 7 QAD413 CPB10050 B10040 7 NONE \*\*CPB10040 B10000 CPB10040 B10000 7 NONE 0 CPB10000 F10230 7 QAD413 CPC10050 C10010 CPC10040 C10010 7 QAD413 CPC10030 C10010 7 QAD413 QAD413 CPC10010 C10000 7 NONE CPC10000 F10180

		cyp_CurrentDischarges_wPit129Div-FYLOTP
CPD10190	D10000	7 QAD412
CPD10180	D10000	7 QAD412
CPD10170	D10160	7 QAD412
CPD10160	D10150	7 513
CPD10150	D10130	7 513
CPD10140	D10130	7 QAD412
CPD10130	D10000	7 QAD412
CPD10120	D10000	7 QAD412
CPD10110	D10000	7 QAD412
CPD10090	D10000	7 QAD412
CPD10080	D10000	7 QAD412
CPD10070	D10000	7 QAD413
CPD10060	D10000	7 QAD413
CPD10050	D10000	7 NONE
CPD10040	D10000	7 QAD413
CPD10030	D10000	7 QAD413
CPD10020	D10000	7 QAD413
CPD10010	D10000	7 QAD413
CPD10000	E10060	0 NONE
CPE10090	E10080	7 513
CPE10080	E10060	7 513
CPE10070	E10060	7 513
CPE10060	E10040	7 QAD412
CPE10050	E10040	7 QAD412
CPE10040	E10000	7 NONE
CPE10020	E10010	7 513
CPE10010	E10000	7 QAD412
CPE10000	F10160	0 NONE
CPF10250	F10230	7 QAD512
CPF10240	F10230	7 513
CPF10230	F10220	7 NONE
CPF10220	F10210	7 NONE
CPF10210	F10190	7 NONE
CPF10190	F10130	7 NONE
CPF10180	F10170	7 NONE
CPF10170	F10130	7 NONE
CPF10160	F10130	7 NONE
CPF10140	F10130	7 NONE

			cvp Curr	entDisc	harges_wPi	.t129Div-	FYLOTP
CPF10130	F10080		7		NONE		
CPF10120	F10080		7		513		
CPF10110	F10080		7		513		
CPF10100	F10080		7		QAD512		
CPF10090	F10080		7		QAD413		
CPF10080	F10005		7		513		
CPF10030	F10020		7		QAD412		
CPF10020	F10005		7		513		
CPF10005	F10000		7				
CPF10000	OUT		0		NONE		
CP 10050	10040		7		QAD413		
CP 10040	10010		7		QAD413		
CP 10020	10010		7		QAD413		
CP 10010	OUT		7		NONE		
CPQAD412	OUT		0				
CPQAD413	OUT		0				
CPQAD512	OUT		0				
CP 513	OUT		0				
CPSABINE	OUT		2	NONE	NONE		
CPSULPHR	OUT		2	NONE	NONE		
CPA240DM	OUT		2	NONE	NONE		
CPB270DM	OUT		2	NONE	NONE		
CPB70DUM	OUT		2	NONE	NONE		
CPB20MUN	OUT		2	NONE	NONE		
CPAVNGER	OUT		2	NONE	NONE		
CPDNGRFD	OUT		2	NONE	NONE		
CPHGHSPR	OUT		2	NONE	NONE		
CPJEFFSN	OUT		2	NONE	NONE		
CPLVGSTN	OUT		2	NONE	NONE		
CPORECTY	OUT		2	NONE	NONE		
**							
CPA-ZERO **	OUT	.===========	2	ZERO	ZERO 	-3 	<u>0</u>
**				<b></b>			<b></b>
**			•				
** Const	ant Infl	ow Records					
	<b>-</b>						

, c

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			cyp_CurrentDischarges_wPit129Div-FYL07	·P
CIB10310	50.42	47.26 53.28	49.72 44.71 41.43	
CI	40.91	39.96 36.83	38.05 41.43 50.42	
** Caroll	o add inf	low representin	g a 10 year minimum return flow for Pil	grims Drida WWTD
CILLDISC	146	184 162	143 155 151	PI THIS LITUE MMIL
CI	146	173 142	146 202 178	
**			=== <b>1</b> , <b>3</b>	
**				
** Water	Rights a	nd Associated F	eservoir Storage Information	
**			and the same same same same same same same sam	
** Caroll	o add wat	er right for mo	deling of pit 129	
WR585100	482	IND20181231		000PT129 PT129
WSPIT129	5355		- 1 1.0	000PT129 PT129
WRB10040	0	IND20181231	1	]n[:]] 4500
WSLKOPNS	251000		_	JrFill 4590
**				
**TXU app	5850, 6/	24/05. kb		
WR585001	50	IND20041231	1 10/1	0000001 5050
WR585002	0	IND20041231	104	95850001 5850
SO			BACKUP	<b>05850002 5850</b>
WR585003	0	IND20041231		05050000 5050
SO			BACKUP	95850003 5850
WR585004	0	IND20041231		25050004 5050
S0	_		BACKUP	<b>05850004</b> 5850
WR585005	0	IND20041231		25050005 5050
SO	•	1.10200 (1251	BACKUP	05850005
WR585006	0	IND20041231		35050006 5050
SO	_	1.10200 11231	BACKUP	95850006 5850
WR585007	0	IND20041231		05050007 5050
SO	-	11020041231	BACKUP	95850007 5850
WR585008	0	IND20041231		25050000 5050
SO	_	1.15200 11251	BACKUP	95850008 5850
WR585009	0	IND20041231		35050000 5050
S0	•	1.1020041231	BACKUP	95850009 5850
WR585010	0	IND20041231		35050010 5050
so	<u>.</u>		BACKUP	95850010 5850
WR585011	0	IND20041231		958500 <b>1</b> 1 5850
S0			BACKUP	958500 <b>1</b> 1 5850
WR585012	0	IND20041231		05850012 5850
				77070017 2020

S0			BACKI	IP	<b>011</b>	
WR585013	0	IND20041231	1		0405850013	5850
SO			BACKU		, 103030023	5050
WR585037	0	IND20041231	1	16	9405850307	5850
WSR58507	525.6	0.979 0.5841				
WR585031	0	IND20041231	1	16	0405850301	5850
WSR58501	271.4	0.979 0.5841				
WR585036	0	IND20041231	1	16	9405850306	5850
WSR58506	327	0.979 0.5841				
WR585034	0	IND20041231	1	16	0405850304	5850
WSR58504	509.3	0.979 0.5841				
WR585033	0	IND20041231	1	16	0405850303	5850
WSR58503	287.3	0.979 0.5841				
WR585035	0	IND20041231	1	16	0405850305	5850
WSR58505	604.8	0.4012 0.856				
WR585032	0	IND20041231	1	16	0405850302	5850
WSR58502	245.1	0.979 0.5841				
**						
** APPLICA						
WR581431	0	OTHER20031028	1	16	0405814301	
WS HR9	356	0.979 0.5841				
WR581432	0	OTHER20031028	1	16	0405814302	
WS HR21	263	0.979 0.5841				
WR581433	0	OTHER20031028	1	16	0405814303	
WS HR10	1495	0.4012 0.856				
** APPLICA						
WR581301	685	581320031001	1		0405813001	
WR581303	0	581320031001	1		0405813003	
SO	_		BACKI			
WR581302	0	581320031001	1		0405813002	
SO	_		BACKI			
WRD10130	0	REC19830222	1		0404334301	4334
WSWHTOAK	6.7	0.979 0.5841		0		
WRD10160	0	REC19830222	1		0404334302	4334
WSBASSLK	3.4	0.979 0.5841		0		
WRD10140	0	REC19830222	1		0404334303	4334
WSDOGWOD	6	0.979 0.5841	_	0		
WRD10180	0	REC19830222	1	16	0404334304	4334

cyp\_CurrentDischarges\_wPit129Div-FYLOTP WSLKAUTM 0.979 0.5841 0 WRD10170 0 REC19830222 1 10404334305 4334 **WSCATFSH** 0.979 0.5841 0 WRD10150 REC19830222 10404334306 4334 WSLKPINE 10.5 0.979 0.5841 0 WRD10190 0 REC19830222 10404334307 4334 WSLKWALL 0.979 0.5841 0 WRF10080 2343 MUN19830418 1 10404349001 4349 WSF10080 8.29 0.979 0.5841 0 S0 3293.45 2343 WRF10080 1281 IND19830418 1 1 10404349002 4349 WSF10080 8.29 0.979 0.5841 0 S0 3293.45 1281 WRB10250 0 REC19841127 10404522301 WSB10250 380 0.979 0.5841 0 WRF10180 202.5 IRR19841218 1 10404525101 WRA10370 0 REC19750106 60404558301 WSA10370 350 0.979 0.5841 0 WRA10350 0 REC19751215 60404559301 WSA10350 230 0.979 0.5841 0 \*\* \*\* Lake Cypress Springs \*\* \*\* WRA10340 1392 MUN19700720 1 2 0.600 60404560301 4560 CYPRESS WSLKCYPS 72800 \*\* WRA10340 1000 MUN19660131 60404560302 4560 CYPRESS **WSLKCYPS** 72800 WRA10340 210 IRR19700720 60404560303 4560 CYPRESS WSLKCYPS 72800 WRA10340 0 IND19700720 0.700 A10020 1 2 60404560304 4560 CYPRESS WSLKCYPS 72800 \*\* WRA10340 0 REC19660131 60404560305 4560 CYPRESS

WSLKCYPS  **  **	72800		cyp_	_cui i	CITEDISC	ur ge3	1012701	·		
WRA10300 WRA10290 **	11.61 24.0	IRR19630831 IRR19630801	1 1					60404561001 60404562002		
** Lake N ** **	Monticello									
WRA10240 WSLKMONT **	15300 40100	IND19700406	1					60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1					60404563302	4563	
**	2-l- 641	_								
** Lake I **	Bob Sandlir	1								
WRA10200 WSBOBSAN **	7000 213350	MUN19711220	1	2	0.600	A10020		60404564301	4564	ВОВ
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1					60404564302	4564	ВОВ
WRA10200 WSBOBSAN **	4693 213350	IND19711220	1	2	0.700			60404564303	4564	ВОВ
WRA10200 WSBOBSAN		REC19711220	1					60404564305	4564	вов
** LOTP W WRA10200 WSBOBSAN	1449	BOB SANDLIN - 1 MUN19711220	MUNI 1			ON B10310		2MEMBERSFRMBOB	4590	вов Lотрвов
** LOTP W WRA10200 WSBOBSAN	ATER FROM E 10000 213350	BOB SANDLIN - IND19711220	1				TE TUAT	1TXU_MONTE	4590	BOB LOTPBOB
** KEMAIN	ING AUTHOR.	TYAITON OF BOR	SANL	)LTI/	WAIEK K	TOHI. NO	IC IMAI	THIS AUTH WAS DEE	יובט וט אט	I HAVE ACCESS TO

** BOB SAI	NDLIN ST	ORAGE, INFLOWS O	NLY.		· circbis	charges_wr.	10129010-F1001F		
WRA10200	19600	IND19780313	1				60404564304	4564	DODDOD
**								4504	BOBROR
** =====	======	=======================================	====	====	======	========	=======================================		
WKA10120	642	MUN19550822	1	2		A10020	60404565301	4565	
WSTANKSL	2700	0.4012 0.856		0			00 10 1303301	4505	
WRA10120	0	IND19550822	1	2	0.700		60404565302	4565	
WSTANKSL	2700	0.4012 0.856		0			30 70 1303302	7505	
WRA10120	0	REC19550822	1				60404565303	4565	
WSTANKSL	2700	0.4012 0.856		0			30.0.505505	4505	
WRA10090	21.44	IRR19591231	1				60404566301		
WSA10090	0.23	0.979 0.5841		0			00.0.00000		
WRA10100	6	IRR19561231	1				60404567301		
WSA10100	5	0.979 0.5841		0					
WRA10050	7.5	IRR19631231	1				60404568301		
WSA10050	35	0.979 0.5841		0					
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569	
WSNEWCTY	1176	0.4012 0.856		0				1303	
WRA10070	0	REC19380317	1				60404569302	4569	
WSNEWCTY	1176	0.4012 0.856		0				.505	
WRA10060	0	MUN19750120	1	2	0.600	A10020	60404570301	4570	
WSOLDCTY	100	0.979 0.5841		0				.3,0	
WRA10060	0	REC19750120	1				60404570302	4570	
WSOLDCTY	100	0.979 0.5841		0				.5,0	
WRA10040	4	· · · · · · · ·	1				60404571301		
WSA10040	12	0.979 0.5841		0					
WRA10030	4.4	IRR19631231	1				60404572301		
WSA10030	10	0.979 0.5841		0					
WRE10020	25.3	IND19850604	1				10404573301		
WSE10020	42	0.979 0.5841		0					
WRA10010	11	IRR19551231	1				60404573001		
WRB10320	0	IRR19511231	1				60404574001	4574	
WSOFF320	5.0	0.979 0.5841		0					
SO	5.43	1.40							
	1.4	IRR19511231	1				60404574301	4574	
WSB10320	0.5	0.979 0.5841		0					
WSOFF320	5.0	0.979 0.5841		0					
OR	5.0								

60	- 43	4.0	CJP.		112011	
SO .	5.43	1.40				
WRB10290	0	REC19730430	1		60404575301	
WSB10290	80	0.979 0.5841		0		
**						
**						
**						
** Welsh	Reservo	ir				
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587					.270
**						
**						
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587	KECT3/30310	1		00404570502	45/0
**	2358/					
**						
**						
WRB10230	124	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.5841		0		
WRB10220	6	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.5841		0		
WRB10210	75	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.5841		0		
WRB10200	2	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.5841		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.5841		0		
**						
**						
** Cynres	s Crk d	iversion noint (	^P R1	.0150 which is on Cypress Crk,	downstream of F	Ellison Reservoir
				to Ellison Crk Reservoir usi		
		Reservoir	иррту	to Ellison cik keservoli usli	ing the 50 kecord	4 •
**	JII CI CCK	Wegel AOTI				
WRB10170	2000	MUN19720508	1		60404582001	4582 ELLISON
		MUN13/20208	1		00404582001	4582 ELLISUN
WSELLISN **	24700					
	24.000	TND404040	_		6040450000	4500 517 5000
WRB10170	21000	IND19421130	1		60404582002	4582 ELLISON
WSELLISN	24700					
** Fill 1	rom Cyp	ress Creek at pr	iorit	y		

WRB10170 WSELLISN SO **	24700	19421130 26000 B10150	cyp 1	_CurrentDischarges_wPit129D	iv-FYLOTP 60404582004	4582	ELLISON
** Miscel **	laneous	impoundments on	Barr	nes Cr etc.			
WR458232 WSBARNES	0 24000	OTHER19720508 0.4012 0.856		0	60404582303	4582	barnes
WR458232 WSBARNES	0 24000	OTHER19720508			4582BU	4582	barnes
S0 **		458237	BACK	(UP			
**							
WRB10120 WSB10120	38.3 4.79	IRR19620731 0.979 0.5841	1	0	60404583301		
WRB10110	14.2	IRR19480930	1	Ø	60404584301		
WSB10110 WRB10100	60 0.56	0.979 0.5841 IRR19550331	1	0			
WSB10100	50	0.979 0.5841	1	0	60404585301		
WRB10090 WSB10090	1 12	IRR19641231 0.979 0.5841	1	0	60404586301		
WRB10080 WSSIMPSN	150 2500	IRR19561231	1	-	60404587301		
**	2300	0.4012 0.856		0			
** **					•		
** Wilkes	Reserv	oir (aka Johnson	Rese	ervoir)			
WRB10070 WSJOHNSN **	6668 10100	IND19600504	1	ŕ	60404588301	4588	
WRB10070 WSJOHNSN **	0 10100	REC19600504	1		60404588302	4588	
** WRB10050 WSB10050 **	0 240	REC19751208 0.979 0.5841	1	0	60404589301		

\*\* \*\*

** Lake	O'the Pi	nes	_		_							
** =====	======	============	====	=====			=====		====		:	
** REDUCE	LOTP DE	MAND FOR PORTION	OF	WATER	AUTHORIZED	TO BE	TAKEN	ΑT	BOB	SANDLIN		
WRB10040	40070	MUN19570916	1							1MUN	4590	FYLOTP
WSLKOPNS	251000	-1										
WRB10040	151800	IND19570916	1							2IND	4590	FYLOTP
WSLKOPNS	251000											
** =====			====	=====	========	=====	======	===	====	========	=	
**												
WRF10250	8	IRR19670430	1				1		6040	04591301		
WSF10250	6	0.979 0.5841		0								
WRF10230	96.88	IRR19690930	1				1		604	04592001		
WRF10240	85	IRR19620531	1				1		604	04593301		
WSF10240	100	0.979 0.5841		0								
WRF10220	1080	IRR19550103	1				1			04594002		
WRF10210	2000	MUN19630218	1				1			04595001		
WRF10190	80.21	IRR19570319	1				1			04596001		
WRC10040	25	IRR19760621	1						604	04597301		
WSC10040	35	0.979 0.5841		0								
WRC10030	10	IND19700126	1						604	04598301		
WSC10030	5	0.979 0.5841		0								
WRC10010	47	IRR19530731	1						604	04599001		
WSC10010	7	0.979 0.5841		0								
S0	40.42	47										
WRF10170	62.5	IRR19660630	1				1			04600001		
WRD10090	0	REC19461121	1						604	04601301		
WSD10090	135	0.979 0.5841		0								
WRD10080	0	REC19600211	1						604	04602301		
WSD10080	1414	0.4012 0.856		0								
WRD10070	0	REC19730312	1						604	04603301		
WSELWOOD	116	0.979 0.5841		0								
WRD10060	7.03	IRR19670630	1						604	04604301		
WSD10060	28	0.979 0.5841		0								
WRD10030	0	REC19741209	1						604	04605301	4605	
WSD10030	36	0.979 0.5841		0								
WRD10040	0	REC19741209	1						604	04605302	4605	
WSD10040	114	0.979 0.5841		0								
WRD10020	0	REC19740812	1						604	04606301		

cyp\_CurrentDischarges\_wPit129Div-FYLOTP WSD10020 294 0.979 0.5841 0 WRD10010 0 REC19740812 1 60404607301 WSD10010 330 0.979 0.5841 0 WRE10070 18.2 IRR19520630 60404608301 WSE10070 20 0.979 0.5841 0 WRE10060 15 IND19680318 1 60404609001 4609 WSE10060 4.8 0.979 0.5841 0 WRE10050 225 IND19821206 1 60404609301 4609 WSE10050 228.2 0.979 0.5841 0 WRE10040 122 IRR19551010 1 60404610001 WRE10010 955 IND19430701 1 60404611301 **WSHOLMES** 0.4012 744 0.856 0 WRF10160 46.58 IRR19550323 1 1 60404612001 WRF10140 165.21 MIN19690224 1 60404613001 WRF10130 7558 MUN19470418 1 60404614001 4614 WRF10130 8442 MUN19561127 1 60404614002 4614 WRF10120 10 IRR19751215 1 60404615301 WSF10120 54 0.979 0.5841 0 WRF10110 0 REC19690811 1 1 60404616301 **WSSHADOW** 1325 0.4012 0.856 0 WRF10030 0 REC19720207 1 1 60404617301 **WSLINDEN** 112 0.979 0.5841 0 WRF10020 42 IRR19790221 1 1 60404618301 4618 WSF10020 0.979 0.5841 42 0 WRF10020 51 IRR19810413 1 1 60404618302 4618 WSF10020 0.979 0.5841 42 0 WR 10050 0 REC19760524 1 60404619301 WS 10050 0.979 0.5841 184 0 WR 10040 0 REC19781016 60404620301 WS 10040 0.4012 600 0.856 0 WR 10020 0 REC19470922 1 60404621301 WS 10020 160 0.979 0.5841 0 WRD10120 0 REC19860404 1 10405054301 WSD10120 550 0.979 0.5841 0 WRC10050 REC19860729 0 1 10405080301 WSC10050 0.979 0.5841 300 0 WRF10100 0 REC19861125 1 10405112301 WSF10100 0.979 0.5841 277 0

			сур_	_Curre	ntDisc	harges_wl	Pit129Di	v-FYLOTF	)				
WRA10280	0	IND1988012	1 1		`			1040	5167301				
WSPONDH1	477	0.979 0.584	1	0									
WRB10300	0	IRR1989011	2 1					1040	5212301				
WSB10300	0.09	0.979 0.584	1	0									
WRB10260	0	IRR1989081	0 1		10405251301								
WSB10260	86	0.979 0.584	1	0									
IFD10110	1025.6	CONST1989121	4 1	1			IF5272						
**													
WRD10110	6180	MUN1989121	4 1					1040	5272301	5272			
WSLKGILM	12720												
WRD10110	0	REC1989121	4 1				*	1040	5272302	5272			
WSLKGILM	12720												
WRF10090	0	REC1990071	0 1				1	1040	5302301				
WSF10090	80	0.979 0.584	1	0									
WRA10260	0	IND1995052	2 1					1040	5529301				
WSPONDH4	173.7	0.979 0.584	1	0									
WRE10080	0	REC1995080	1 1					1040	5537301				
WSE10080	296	0.979 0.584	1	0									
WRE10090	34	IRR1998032	0 1					1040	5608301	5608			
WSE10090	55.6	0.979 0.584	1	0									
WRE10090	0	REC1998032						1040	5608302	5608			
WSE10090	55.6	0.979 0.584		0									
	water ri	ght is to fill		porti	ion of	Caddo La	ake up t						
WRF10005	0	OTHER9999999	9 1					6040	99993 <b>01</b>	9999			
WS CADDO													
		ght is for Lou		s dive	ersion	from Cad	ldo Lake						
WRF10005	40000	MUN9999999	9 1					6040	9999302	9999			
WS CADDO	165000												
**													
	rage-Area	Tables											
**													
SVLKMONT	0	1000 200		00	9500	14000	22500	30000	40000	55000	70000	97000	
SALKMONT	0	<b>1</b> 75 35		'00	975	1150	1475	1725	2000	2525	3100	3675	
SVBOBSAN	0	0 500			35000	57500	87500	155000	190000	270000	350000		
SABOBSAN	0	300 110	00 23	800	3400	4450	5600	8000	8950	10750	12350		
**	_					2022			0.555	42525	45000	10000	
SVJOHNSN	0	150 76		100	2400	3900	5700	7800	9600	12600	15800	18000	
SAJOHNSN	0	50 <b>1</b> 1	.0 1	.70	245	340	445	550	650	790	900	950	

<b>***</b> *** *** *** ***	cyp_CurrentDischarges_wPit129Div-FYLOTP													
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000			
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150			
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500					
SAELLISN	0	500	580	660	780	920	1090	1340	1620	36500	47000			
SVLKOPNS	0	50	400	6000	18000	36000	74000			1860	2200			
SALKOPNS	0	50	500					130000	200000	259000				
				1000	3000	6000	9500	12750	16250	18500				
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000					
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250					
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600		
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740		44600		
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860	1740	1865	1930		
SALKGILM	0	285	430	570										
**	Ū	203	450	370	720	895	1100	1350	1630					
** Carollo add	i add	ditional	SVSA cur	ave for	Di+ 120									
SVPIT129														
	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355		
SAPIT129	0	12	16	20	23	25	33	39	50	62				
**							,,,	23	90	02	72	98		

<sup>\*\*</sup> Drought Indices

100

DI 1 CADDO IS 125000 125001 865000 0 IΡ 100 100 100

\*\* Streamflow And Evaporation Records

\*\* ED

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder. \*\*

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```
cyp_CurrentDischarges_wPit129-FYLOTP
    Cypress Water Availability Modeling
    Full Authorized Diversions, No Return Flows
Т3
    Updated 6/18/2015 KA
 **
**
**
    General Comments
**
JD
      51
            1948
                        1
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                        0
                                                                                 3
                                                                                        0
                                                                                                 0
   0
JO
RO
      -1
**
**FY
             10000
                      1000
                                100
                                         10
                                                104000PT129
FΥ
     1.0
         241800
                    1000
                             100
                                                           FYLOTP
**FY
       1.0
             48500
                      1000
                                100
                                         10
                                                                BOB
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850307
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850301
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850306
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850304
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850303
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850305
**FY
         1
             10000
                      1000
                               100
                                         10
                                               10405850302
**
    Monthly Water Use Factors
**
UC
    5813
              60
                      60
                              60
                                       60
                                               76
                                                       76
UC
              76
                      76
                              76
                                       60
                                               60
                                                       60
UC
     MUN
           0.077
                   0.070
                           0.075
                                   0.076
                                           0.084
                                                   0.091
UC
           0.100
                   0.100
                           0.089
                                   0.085
                                           0.076
                                                   0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                           0.081
                                                   0.077
UC
           0.109
                   0.109
                           0.104
                                   0.084
                                           0.072
                                                   0.076
UC
           0.000
     IRR
                   0.001
                           0.004
                                   0.013
                                           0.051
                                                   0.162
UC
           0.200
                   0.241
                           0.142
                                   0.097
                                           0.053
                                                   0.038
```

UC

MIN

0.079

0.080

0.084

0.080

0.081

0.077

```
cyp_CurrentDischarges_wPit129-FYLOTP
                                           0.090
                                                    0.087
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                           0.083
                                                    0.083
UC
     REC
           0.083
                   0.083
                           0.083
                                   0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                    0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                    0.083
UC
                                                      1.0
                     2.0
                             2.0
                                      2.0
                                              2.0
UC CONST
             2.0
                                                      1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                              1.0
UC MONTH
                   28.25
                              31
                                       30
                                               31
                                                       30
              31
              31
                              30
                                       31
                                               30
                                                       31
UC
                      31
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
                                                     NONE
CPTCUSBC A10000
                                        7
                                                     NONE
CPPPDISC TCUSBC
** Carollo add additional control point for modeling of pit 129
                                                      513
CP585100 585005
                                        7
**TXU app 5850, 6/24/05, kb
                                        7
                                                     NONE
CP585008 A10120
                                        7
                                                      513
CP585037 A10120
                                                     NONE
                                        7
CP585009 A10120
                                        7
                                                     NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
                                          7
                                                        513
**CP585031 A10000
                                          7
                                                       NONE
**CP585007 A10000
                                          7
                                                       NONE
**CP585006 A10000
                                        7
                                                      513
CP585031 PPDISC
                                        7
                                                     NONE
CP585007 PPDISC
CP585006 PPDISC
                                        7
                                                     NONE
                                        7
                                                      513
CP585036 585034
                                        7
                                                      513
CP585034 585033
                                        7
                                                      513
CP585033 585032
                                        7
                                                      513
CP585035 585032
                                        7
                                                      513
CP585032 585005
```

cyp\_CurrentDischarges\_wPit129-FYLOTP
\*\* Carollo modify existing CPs to include new tracking CP for Pit 129 analyse

** Carollo modify existing CPs to	include new	tracking CP for Pit 129 analyses
**CP585005 A10000	7	NONE
**CP585004 A10000	7	NONE
**CP585003 A10000	7	NONE
**CP585002 A10000	7	NONE
**CP585001 A10000	7	NONE
CP585005 PPDISC	7	NONE
CP585004 TCUSBC	7	NONE
CP585003 TCUSBC	7	NONE
CP585002 TCUSBC	7	NONE
CP585001 TCUSBC	, 7	NONE
CP585011 A10070	7	NONE
CP585012 A10010	7	NONE
CP585013 A10010	, 7	NONE
** add control points for A5814	,	NONE
CP581431 581432	7	QAD413
CP581432 A10260	7	QAD413
CP581433 A10240	7	QAD413
** add control points for A5813	,	6404I3
CP581301 D10000	7	NONE
CP581302 D10000	7	NONE
CP581303 D10000	7	NONE
** additional CPs for C4582, for E		watershed
CP458232 B10170	7	B10170
CP458237 B10170	7	B10170
**	•	510170
CPA10370 A10340	7	QAD413
CPA10350 A10340	7	QAD413
CPA10340 A10300	7	Q.12.123
**CPA10300 A10000	7	NONE
CPA10300 A10200	7	NONE
**	-	
CPA10290 A10200	7	NONE
CPA10280 A10240	7	QAD413
CPA10260 A10240	7	QAD413
		<del>-</del>

#### cyp\_CurrentDischarges wPit129-FYLOTP \*\*CPA10240 A10000 CPA10240 A10200 7 CPA10200 A10000 \*\* Carollo modify existing CPs to include new tracking CP for Pit 129 analyses \*\*CPA10120 A10000 7 513 \*\*CPA10100 A10000 7 513 \*\*CPA10090 A10000 513 7 CPA10120 TCUSBC 7 513 CPA10100 TCUSBC 7 513 7 CPA10090 TCUSBC 513 CPA10070 A10010 513 7 CPA10060 A10010 7 513 7 CPA10050 A10010 513 CPA10040 A10010 7 513 CPA10030 A10010 7 QAD413 CPA10020 A10010 7 NONE CPA10010 A10000 7 513 CPA10000 B10150 NONE 0 CPB10320 B10310 7 QAD413 NONE CPB10310 B10150 7 CPB10300 B10150 7 QAD413 7 QAD413 CPB10290 B10150 CPB10270 B10150 7 CPB10260 B10150 7 QAD413 CPB10250 B10150 7 QAD413 7 513 CPB10230 B10170 7 513 CPB10220 B10230 CPB10210 B10150 7 513 7 CPB10200 B10150 513 CPB10180 B10170 513 7 CPB10170 B10150 7 CPB10150 B10040 7 NONE CPB10120 B10040 7 513 CPB10110 B10040 513 7

7

513

CPB10100 B10040

```
cyp_CurrentDischarges_wPit129-FYLOTP
CPB10090
          B10040
                                                     513
CPB10080
          B10040
                                       7
                                                     513
CPB10070
          B10040
                                       7
CPB10050 B10040
                                       7
                                                  QAD413
**CPB10040 B10000
                                         7
                                                      NONE
CPB10040 B10000
                                       7
CPB10000 F10230
                                       0
                                                    NONE
CPC10050 C10010
                                       7
                                                  QAD413
CPC10040 C10010
                                                  QAD413
CPC10030 C10010
                                                  QAD413
CPC10010 C10000
                                       7
                                                  QAD413
CPC10000 F10180
                                       0
                                                    NONE
CPD10190 D10000
                                       7
                                                  QAD412
CPD10180 D10000
                                       7
                                                  QAD412
CPD10170 D10160
                                       7
                                                  QAD412
CPD10160 D10150
                                       7
                                                     513
CPD10150 D10130
                                       7
                                                     513
CPD10140 D10130
                                       7
                                                  QAD412
CPD10130 D10000
                                       7
                                                  QAD412
CPD10120 D10000
                                       7
                                                  QAD412
CPD10110 D10000
                                       7
                                                  QAD412
CPD10090
         D10000
                                       7
                                                  QAD412
CPD10080
         D10000
                                       7
                                                  QAD412
CPD10070
         D10000
                                       7
                                                  QAD413
CPD10060
         D10000
                                       7
                                                  QAD413
CPD10050
          D10000
                                       7
                                                    NONE
CPD10040
         D10000
                                       7
                                                  QAD413
CPD10030
         D10000
                                       7
                                                  QAD413
CPD10020
         D10000
                                       7
                                                  QAD413
CPD10010
         D10000
                                       7
                                                  QAD413
CPD10000
         E10060
                                       0
                                                    NONE
CPE10090
         E10080
                                       7
                                                     513
CPE10080
          E10060
                                       7
                                                     513
CPE10070
          E10060
                                       7
                                                     513
CPE10060
         E10040
                                       7
                                                  QAD412
```

```
cyp CurrentDischarges wPit129-FYLOTP
CPE10050
          E10040
                                                   QAD412
                                        7
CPE10040
          E10000
                                        7
                                                     NONE
CPE10020
          E10010
                                        7
                                                      513
CPE10010
          E10000
                                        7
                                                   OAD412
                                                     NONE
CPE10000
          F10160
                                        0
CPF10250 F10230
                                        7
                                                   QAD512
CPF10240 F10230
                                        7
                                                      513
                                        7
                                                     NONE
CPF10230
          F10220
CPF10220
                                                     NONE
          F10210
                                        7
CPF10210 F10190
                                        7
                                                     NONE
CPF10190 F10130
                                        7
                                                     NONE
CPF10180 F10170
                                        7
                                                     NONE
                                        7
CPF10170 F10130
                                                     NONE
CPF10160
          F10130
                                        7
                                                     NONE
CPF10140
                                        7
                                                     NONE
          F10130
                                        7
CPF10130 F10080
                                                     NONE
                                        7
CPF10120
          F10080
                                                      513
CPF10110
                                                      513
                                        7
          F10080
                                        7
CPF10100
          F10080
                                                   QAD512
                                        7
                                                   QAD413
CPF10090
          F10080
CPF10080
         F10005
                                        7
                                                      513
CPF10030
                                        7
                                                   QAD412
          F10020
                                        7
CPF10020
          F10005
                                                      513
                                        7
CPF10005
          F10000
CPF10000
             OUT
                                                     NONE
                                        0
CP 10050
           10040
                                        7
                                                   QAD413
CP 10040
           10010
                                        7
                                                   OAD413
CP 10020
           10010
                                        7
                                                   QAD413
CP 10010
                                        7
                                                     NONE
             OUT
CPQAD412
             OUT
                                        0
CPQAD413
             OUT
                                        0
CPQAD512
             OUT
                                        0
CP
     513
             OUT
                                        0
CPSABINE
             OUT
                                        2
                                             NONE
                                                     NONE
CPSULPHR
             OUT
                                        2
                                             NONE
                                                     NONE
```

```
cyp_CurrentDischarges_wPit129-FYLOTP
CPA240DM
           OUT
                                      NONE
                                  2
                                              NONE
CPB270DM
           OUT
                                  2
                                      NONE
                                             NONE
CPB70DUM
           OUT
                                  2
                                      NONE
                                             NONE
CPB20MUN
           OUT
                                  2
                                      NONE
                                             NONE
CPAVNGER
           OUT
                                  2
                                      NONE
                                              NONE
CPDNGRFD
           OUT
                                  2
                                      NONE
                                             NONE
CPHGHSPR
           OUT
                                  2
                                      NONE
                                              NONE
CPJEFFSN
           OUT
                                      NONE
                                             NONE
CPLVGSTN
           OUT
                                  2
                                      NONE
                                             NONE
CPORECTY
           OUT
                                      NONE
                                             NONE
**
CPA-ZERO
           OUT
                                      ZERO
                                              ZERO
                                                      -3
**
**
   Constant Inflow Records
**
CIB10310
         50.42
                47.26
                              49.72 44.71
                       53.28
                                            41.43
CI
         40.91
                39.96
                       36.83
                              38.05
                                     41.43
                                            50.42
** Carollo add inflow representing a 10 year minimum return flow for Pilgrims Pride WWTP
CIPPDISC
           146
                  184
                         162
                                143
                                       155
                                              151
CI
           146
                  173
                         142
                                146
                                       202
                                              178
**
**
   Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100
           482
                  IND20181231 1 1
                                       1.0
                                                            104000PT129
                                                                        PT129
WSPIT129
          5355
**TXU app 5850, 6/24/05, kb
WR585001
            50
                  IND20041231
                              1
                                                            10405850001
                                                                          5850
WR585002
                  IND20041231
             0
                              1
                                                            10405850002
                                                                         5850
SO
                             BACKUP
```

			cyp_cui i elicoraciiai gea_wr rcrz	J-I ILOIF	
WR585003	0	IND20041231	1	10405850003	5850
S0			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
S0			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
S0			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
S0			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
S0			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
S0			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
S0			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
S0			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
S0			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
S0			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850

WS  **	R58502	245.1	0.979 0.5841			, geo zezz.		
**	APPLI	CATION 58	14					
WR.	581431	0	OTHER20031028	1			10405814301	
WS	HR9	356	0.979 0.5841				10403014301	
WR:	581432	0	OTHER20031028	1			10405814302	
	HR21	263	0.979 0.5841				10-10301-1302	
	581433	0	OTHER20031028	1			10405814303	
	HR10	1495	0.4012 0.856				10,03014303	
		CATION 58	13					
	581301	685	581320031001	1			10405813001	
	581303	0	581320031001	1			10405813003	
S0				BACKL	JP			
	581302	0	581320031001	1			10405813002	
SO.				BACKU	JP			
	010130	0	REC19830222	1			10404334301	4334
	WHTOAK	6.7	0.979 0.5841		0			
	010160	0	REC19830222	1			10404334302	4334
	BASSLK	3.4	0.979 0.5841		0			
	010140	0	REC19830222	1			10404334303	4334
	DOGWOD	6	0.979 0.5841		0			
	010180	0	REC19830222	1			10404334304	4334
	_KAUTM	130	0.979 0.5841		0			
	010170	0	REC19830222	1			10404334305	4334
	CATFSH 010150	5	0.979 0.5841	_	0			
	KPINE	0	REC19830222	1	_		10404334306	4334
	010190	10.5	0.979 0.5841		0			
	-KWALL	0 5	REC19830222	1	_		10404334307	4334
	- 10080	2343	0.979 0.5841	4	0			
	10080	8.29	MUN19830418 0.979 0.5841	1	•	1	10404349001	4349
SO	10000	3293.45	0.979 0.5841 2343		0			
	10080	1281		1				
	10080	8.29	IND19830418 0.979 0.5841	1	0	1	10404349002	4349
SO.	_0000	3293.45	1281	`	0			
			1201					

			·	cvr	Curren	tDischard	es wPit129	9-FVI OTP	
WRB10250	0	REC19841127	1	٦٢-		CDIDCHAI E	.C3_WI 1C12.	10404522301	
WSB10250	380	0.979 0.5841		0					
WRF10180	202.5	IRR19841218	1				1	10404525101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.5841		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.5841		0					
**									
**									
	Cypress	Springs							
**									
**				_					
WRA10340	1392	MUN19700720	1	2	0.600			60404560301	4560 CYPRESS
WSLKCYPS	72800								
**	4000		_						
WRA10340	1000	MUN19660131	1					60404560302	4560 CYPRESS
WSLKCYPS **	72800								
WRA10340	210	IRR19700720	1					60404560303	4560 CYPRESS
WSLKCYPS	72800	100120						00404500505	4300 CIPRESS
**	72800								
WRA10340	0	IND19700720	1	2	0.700	A10020		60404560304	4560 CYPRESS
WSLKCYPS	72800	111013700720	_	_	0.700	AIOOLO		00404500504	4300 CH RE33
**	, 2000								
WRA10340	0	REC19660131	1					60404560305	4560 CYPRESS
WSLKCYPS	72800		_						
**									
**									
WRA10300	11.61	IRR19630831	1					60404561001	
WRA10290	24.0	IRR19630801	1					60404562002	
**									
**									
** Lake	Monticel	lo							

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WRA10240 WSLKMONT	15300 40100	IND19700406	1	сур	_Currer	ntDischarges_wP	it129-FYLOTP 60404563301	4563	
WRA10240 WSLKMONT	1000 40100	IND19730604	1				60404563302	4563	
** **									
	Bob Sandli	n							
**	Janaii	!!							
WRA10200	7000	MUN19711220	1	2	0.600	A10020	60404564301	4564	ВОВ
WSBOBSAN **	213350								
WRA10200	8000	IND19711220	1				60404564302	4564	ВОВ
WSBOBSAN **	213350								
WRA10200	4693	IND19711220	1	2	0.700		60404564303	4564	ВОВ
WSBOBSAN **	213350						00 10 130 1303	7504	DOD
WRA10200	0	REC19711220	1				60404564305	4564	BOB
WSBOBSAN							00404304303	4304	вов
** LOTP W. WRA10200	ATER FROM I	BOB SANDLIN - N							
WSBOBSAN	1449 213350	MUN19711220	1	2	0.600	B10310	2MEMBERSFRMBOB	4590	BOB LOTPBOB
** LOTP W		BOB SANDLIN - :	IND A	UTHO	RIZATIO	N			
WRA10200	10000	IND19711220	1				1TXU_MONTE	4590	ВОВ LОТРВОВ
WSBOBSAN ** PEMATN		TZATION OF BOD	C 4 4 1 1 1 1						
** BOB SA	NDLIN STORA	AGE, INFLOWS OF	SAND VIV	LTN	WATER R	IGHT. NOTE THA	T THIS AUTH WAS DEEM	IED TO N	OT HAVE ACCESS TO
WRA10200	19600	IND19780313	1				60404564304	4564	BOBROR
** **									
WRA10120	======== 642	========= MUN19550822				*=====================================			
WSTANKSL		.4012 0.856	1	2 0	0.000	A10020	60404565301	4565	
WRA10120	0	IND19550822	1	2	0.700		60404565302	4565	

				сур	_Curren	tDischarge	es_wPit129-FYLOTP	
WSTANKSL	2700	0.4012 0.856		0				
WRA10120	0	REC19550822	1				60404565303	4565
WSTANKSL	2700	0.4012 0.856		0				
WRA10090	21.44	IRR19591231	1				60404566301	
WSA10090	0.23	0.979 0.5841		0				
WRA10100	6	IRR19561231	1				60404567301	
WSA10100	5	0.979 0.5841		0				
WRA10050	7.5	IRR19631231	1				60404568301	
WSA10050	35	0.979 0.5841		0				
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10070	0	REC19380317	1				60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10060	0	MUN19750120	1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10060	0	REC19750120	1				60404570302	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10040	4	IRR19631231	1				60404571301	
WSA10040	12	0.979 0.5841		0				
WRA10030	4.4	IRR19631231	1				60404572301	
WSA10030	10	0.979 0.5841		0				
WRE10020	25.3	IND19850604	1				10404573301	
WSE10020	42	0.979 0.5841		0				
WRA10010	11	IRR19551231	1				60404573001	
WRB10320	0	IRR19511231	1				60404574001	4574
WSOFF320	5.0	0.979 0.5841		0				
S0	5.43	1.40						
WRB10320	1.4	IRR19511231	1				60404574301	4574
WSB10320	0.5	0.979 0.5841		0				
WSOFF320	5.0	0.979 0.5841		0				
OR	5.0							
SO	5.43	1.40						
WRB10290	0	REC19730430	1				60404575301	
WSB10290	80	0.979 0.5841		0				

\*\*

**				cyp_currentbischarges_wpiti29-FYLOIP
**				
** Welsh	Reservo:	ir		
WRB10270	11000	IND19730910	1	
WS WELSH	23587	11010700010	_	60404576301 4576
**	23307			
**				
WRB10270	0	REC19730910	1	60404576302 4576
WS WELSH	23587			60404576302 4576
**				
**				
**				
WRB10230	124	IRR19500930	1	60404577301
WSB10230	96	0.979 0.5841		0
WRB10220	6	IRR19521231	1	60404578301
WSB10220	1	0.979 0.5841		0
WRB10210	75	IRR19531231	1	60404579301
WSB10210	64	0.979 0.5841		0
WRB10200	2	IRR19581231	1	60404580301
WSB10200	0.5	0.979 0.5841		0
WRB10180	0	REC19690922	1	60404581301
WSB10180	510	0.979 0.5841		0
**				
**				
** Cypre	ss Crk di	iversion point, (	CP B1	0150 which is on Cypress Crk, downstream of Ellison Reservoir,
13 030	eu co sup	obrament Maret 2	upply	to Ellison Crk Reservoir using the SO Record.
ETTT20	on Creek	Reservoir		<b>6</b>
**				
WRB10170	2000	MUN19720508	1	60404582001 4582 ELLISON
WSELLISN	24700			
**				
WRB10170	21000	IND19421130	1	60404582002 4582 ELLISON
WSELLISN	24700			
** Fill 1	rom Cypr	ress Creek at pr	iorit	ту
WRB10170		19421130	1	60404582004 4582 ELLISON

					Су	yp_currentbischarges_wPiti29-FYLOTP	
WSELLISN	24700						
S0		26000	B10150				
**							
** Miscel	laneous	impound	dments on	Barn	es	Cr etc.	
**							
WR458232	0	OTHER1	L9720508			60404582303 4582 bar	nes
WSBARNES	24000	0.4012	0.856		0		
WR458232	0	OTHER1	L9720508			4582BU 4582 bar	nes
WSBARNES	24000						
S0			458237	BACK	UP		
**							
**							
WRB10120	38.3	IRR1	L9620731	1		60404583301	
WSB10120	4.79	0.979	0.5841		0		
WRB10110	14.2	IRR1	L9480930	1		60404584301	
WSB10110	60	0.979	0.5841		0		
WRB10100	0.56	IRR1	19550331	1		60404585301	
WSB10100	50	0.979	0.5841		0		
WRB10090	1	IRR1	19641231	1		60404586301	
WSB10090	12	0.979	0.5841		0		
WRB10080	150	IRR1	19561231	1		60404587301	
WSSIMPSN	2500	0.4012	0.856		0		
**							
**							
**							
** Wilkes	Reserv	oir (aka	a Johnson	Rese	rvc	oir)	
WRB10070	6668	•	19600504	1		60404588301 4588	
NZNHOCZW	10100						
**							
WRB10070	0	REC1	19600504	1		60404588302 4588	
NSJOHNSN	10100						
**							
**							
WRB10050	0	REC1	19751208	1		60404589301	
WSB10050	240	0.979	0.5841		0		

## CVD CupportDischanges + Di+120 FV4 OFD

**				cyp_	_CurrentDisc	charge	s_wPit1	.29-FYL	OTP		
**											
**   240	O'the Pi	noc									
	=======										
		MAND FOR PORTION	===: ^E	=====: !!ATED	::	=====: TO DE	====== TAKEN		========	:=	
WRB10040	40070	MUN19570916	1	WATER	AUTHORIZED	IO RE	TAKEN	AT ROB			
WSLKOPNS	251000	-1	-						1MUN	4590	FYLOTP
WRB10040	151800	IND19570916	1						2.TND	4500	<b>5</b> ) // 6 <b>5</b> -
WSLKOPNS	251000		_						2IND	4590	FYLOTP
** =====	=======	=======================================	===:	=====:	========	====				_	
**										:=	
WRF10250	8	IRR19670430	1				1	604	04591301		
WSF10250	6	0.979 0.5841		0			_	004	04991301		
WRF10230	96.88	IRR19690930	1		•		1	604	04592001		
WRF10240	85	IRR19620531	1				1		04593301		
WSF10240	100	0.979 0.5841		0							
WRF10220	1080	IRR19550103	1				1	604	04594002		
WRF10210	2000	MUN19630218	1				1	604	04595001		
WRF10190	80.21	IRR19570319	1				1	604	04596001		
WRC10040	25	IRR19760621	1					604	04597301		
WSC10040	35	0.979 0.5841		0							
WRC10030	10	IND19700126	1					604	04598301		
WSC10030	5	0.979 0.5841		0							
WRC10010 WSC10010	47	IRR19530731	1	_				604	04599001		
SO SO	7 40.42	0.979 0.5841 47		0							
WRF10170	62.5	• •	4								
WRD10090	02.5	IRR19660630 REC19461121	1				1		04600001		
WSD10090	135	0.979 0.5841	1	0				604	04601301		
WRD10080	0	REC19600211	1	0					0450000		
WSD10080	1414	0.4012 0.856	_	0				604	04602301		
WRD10070	0	REC19730312	1	v				C0.4	04603304		
WSELWOOD	116	0.979 0.5841	_	0				604	04603301		
WRD10060	7.03	IRR19670630	1	J				601	04604301		
WSD10060	28	0.979 0.5841		0				004	-00430I		

				cyp_CurrentDischarge	es wPit12	9-FYLOTP	
WRD10030	0	REC19741209	1		_	60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			

				cyp_CurrentDischarges_wPit129-FYLOTP
WR 10020	0	REC19470922	1	60404621301
WS 10020	160	0.979 0.5841		0
WRD10120	0	REC19860404	1	10405054301
WSD10120	550	0.979 0.5841		0
WRC10050	0	REC19860729	1	10405080301
WSC10050	300	0.979 0.5841		0
WRF10100	0	REC19861125	1	1 10405112301
WSF10100	277	0.979 0.5841	_	0
WRA10280	0	IND19880121	1	10405167301
WSPONDH1	477	0.979 0.5841		0
WRB10300	0	IRR19890112	1	10405212301
WSB10300	0.09	0.979 0.5841		0
WRB10260	0	IRR19890810	1	10405251301
WSB10260	86	0.979 0.5841		0
IFD10110	1025.6	CONST19891214	1	1 IF5272
**				1.32.72
WRD10110	6180	MUN19891214	1	10405272301 5272
WSLKGILM	12720			10403272301 3272
WRD10110	0	REC19891214	1	10405272302 5272
WSLKGILM	12720			10403272302 3272
WRF10090	0	REC19900710	1	1 10405302301
WSF10090	80	0.979 0.5841		0
WRA10260	0	IND19950522	1	10405529301
WSPONDH4	173.7	0.979 0.5841		0
WRE10080	0	REC19950801	1	10405537301
WSE10080	296	0.979 0.5841		0
WRE10090	34	IRR19980320	1	10405608301 5608
WSE10090	55.6	0.979 0.5841		0
WRE10090	0	REC19980320	1	10405608302 5608
WSE10090	55.6	0.979 0.5841		0
** This		ght is to fill Te	xas'	' portion of Caddo Lake up to elevation 168.5 feet
WRF10005	0	OTHER99999999	1	60409999301 9999
WS CADDO	125000			
** This	water ri	ght is for Louisi	ana'	's diversion from Caddo Lake for each year
WRF10005	40000	MUN99999999	1	6040999302 9999

#### cyp\_CurrentDischarges\_wPit129-FYLOTP

WS CADDO	165000			-,	F		6					
** Stor	age-Area	Tables										
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN **	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
** Caroll	o add ad	ditional	SVSA cu	rve for	Pit 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129	0	12	16	20	.23	25	33	39	50	62	72	98

<sup>\*\*</sup> Drought Indices

\*\*

DI 1 1 CADDO

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

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cyp\_PermittedDischarges\_woPit129-Base Cypress Water Availability Modeling Full Authorized Diversions, No Return Flows Updated 6/18/2015 KA T3 \*\* \*\* General Comments \*\* \*\* \*\* JD 51 1948 1 -1 -1 5 0 0 3 0 0 0 JO RO -1 \*\* \*\*FY 10000 1 1000 100 10 104000PT129 \*\*FY 241800 1.0 1000 100 **FYLOTP** \*\*FY 1.0 48500 1000 100 10 BOB \*\*FY 1 10000 1000 100 10 10405850307 \*\*FY 1 10000 1000 100 10 10405850301 \*\*FY 1 10000 1000 100 10 10405850306 \*\*FY 1 10000 1000 100 10 10405850304 \*\*FY 1 10000 1000 100 10 10405850303 \*\*FY 1 10000 1000 100 10 10405850305 \*\*FY 1 10000 1000 100 10 10405850302 \*\* Monthly Water Use Factors \*\* \*\* 5813 UC 60 60 60 60 76 76 UC 76 76 76 60 60 60 UC MUN 0.077 0.070 0.075 0.076 0.084 0.091 UC 0.100 0.100 0.089 0.085 0.076 0.078 UC 0.068 IND 0.063 0.070 0.080 0.081 0.077 UC 0.109 0.109 0.104 0.084 0.072 0.076 UC IRR 0.000 0.001 0.013 0.004 0.051 0.162 UC 0.200 0.241 0.142 0.097 0.053 0.038 UC MIN

0.079

0.080

0.084

0.080

0.081

0.077

```
cyp PermittedDischarges woPit129-Base
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                           0.090
                                                   0.087
UC
     REC
           0.083
                   0.083
                           0.083
                                           0.083
                                                    0.083
                                   0.083
           0.083
UC
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                    0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                    0.083
                     2.0
UC CONST
             2.0
                             2.0
                                     2.0
                                              2.0
                                                      1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                              1.0
                                                      1.0
UC MONTH
              31
                   28.25
                              31
                                       30
                                               31
                                                       30
UC
              31
                      31
                              30
                                      31
                                               30
                                                       31
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                       7
                                                     NONE
CPPPDISC TCUSBC
                                       7
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
                                       7
**TXU app 5850, 6/24/05, kb
                                       7
CP585008 A10120
                                                     NONE
                                       7
CP585037 A10120
                                                      513
                                                     NONE
CP585009 A10120
                                       7
                                       7
CP585010 A10120
                                                     NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                                        513
**CP585007 A10000
                                          7
                                                       NONE
**CP585006 A10000
                                          7
                                                       NONE
CP585031 PPDISC
                                       7
                                                      513
CP585007 PPDISC
                                       7
                                                     NONE
                                       7
CP585006 PPDISC
                                                     NONE
                                       7
CP585036 585034
                                                      513
CP585034 585033
                                       7
                                                      513
CP585033 585032
                                       7
                                                      513
                                       7
                                                      513
CP585035 585032
                                       7
                                                      513
CP585032 585005
```

** Caroll	o modify existing CPs	to include new	thacking CD for D	** 120	
**CP58500	5 A10000	7	NONE	10 129	anaiyses
**CP58500		7			
	3 A10000	7	NONE		
	2 A10000	7	NONE		
**CP58500		7	NONE		
	PPDISC	7	NONE		
	TCUSBC	7	NONE		
	TCUSBC	7	NONE		
	TCUSBC	7	NONE		
CP585001	TCUSBC	7	NONE		
	A10070	7	NONE		
CP585012		7	NONE		
CP585013	A10010	7	NONE		
	ntrol points for A581		NONE		
CP581431	581432		040445		
CP581432	A10260	7	QAD413		
CP581433	A10240	7 7	QAD413		
	ntrol points for A581		QAD413		
CP581301	D10000	.s 7			
CP581302			NONE		
CP581303		7	NONE		
		7	NONE		
CP458232	onal CPs for C4582, f B10170				
CP458237	B10170	7	B10170		
**	010170	7	B10170		
CPA10370	A10340	7	040443		
	A10340		QAD413		
	A10300	7 7	QAD413		
**CPA1030					
CPA10300	A10000	7	NONE		
**	A10200	7	NONE		
CPA10290	A10200	7	NONE		
CPA10280	A10240	7	NONE OAD413		
CPA10260	A10240	7	QAD413		
		,	QAD413		

```
cyp PermittedDischarges woPit129-Base
**CPA10240 A10000
CPA10240 A10200
                                       7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120
           A10000
                                         7
                                                        513
**CPA10100
                                         7
                                                        513
           A10000
**CPA10090 A10000
                                                        513
                                         7
CPA10120 TCUSBC
                                       7
                                                      513
CPA10100 TCUSBC
                                       7
                                                      513
CPA10090 TCUSBC
                                       7
                                                      513
CPA10070 A10010
                                       7
                                                      513
                                       7
                                                      513
CPA10060
         A10010
                                       7
CPA10050
                                                      513
         A10010
CPA10040 A10010
                                       7
                                                      513
                                                  QAD413
CPA10030 A10010
                                       7
                                                     NONE
CPA10020 A10010
                                       7
CPA10010 A10000
                                        7
                                                      513
                                                     NONE
CPA10000 B10150
                                        0
CPB10320
                                       7
                                                   QAD413
          B10310
                                                     NONE
CPB10310
         B10150
                                        7
                                                  QAD413
CPB10300 B10150
                                        7
                                        7
                                                  QAD413
CPB10290
          B10150
CPB10270
          B10150
                                        7
                                        7
                                                   QAD413
CPB10260
         B10150
                                                  QAD413
CPB10250 B10150
                                        7
CPB10230 B10170
                                        7
                                                      513
CPB10220
                                        7
                                                      513
          B10230
CPB10210
          B10150
                                        7
                                                      513
                                        7
                                                      513
CPB10200
          B10150
                                        7
                                                      513
CPB10180
          B10170
CPB10170
                                        7
          B10150
                                        7
                                                     NONE
CPB10150
          B10040
                                        7
                                                      513
CPB10120
          B10040
                                                      513
CPB10110
          B10040
                                        7
CPB10100 B10040
                                        7
                                                      513
```

```
cyp_PermittedDischarges_woPit129-Base
CPB10090
          B10040
                                                     513
CPB10080
          B10040
                                       7
                                                     513
CPB10070
          B10040
                                       7
CPB10050 B10040
                                       7
                                                  QAD413
**CPB10040 B10000
                                         7
                                                      NONE
CPB10040
          B10000
                                       7
CPB10000 F10230
                                       0
                                                    NONE
CPC10050 C10010
                                       7
                                                  QAD413
CPC10040 C10010
                                       7
                                                  QAD413
CPC10030 C10010
                                       7
                                                  QAD413
CPC10010 C10000
                                       7
                                                  QAD413
CPC10000
          F10180
                                       0
                                                    NONE
CPD10190 D10000
                                       7
                                                  QAD412
CPD10180 D10000
                                       7
                                                  QAD412
CPD10170 D10160
                                       7
                                                  QAD412
CPD10160 D10150
                                       7
                                                     513
CPD10150 D10130
                                       7
                                                     513
CPD10140 D10130
                                       7
                                                  QAD412
CPD10130 D10000
                                       7
                                                  QAD412
CPD10120 D10000
                                       7
                                                  QAD412
CPD10110
          D10000
                                       7
                                                  QAD412
CPD10090 D10000
                                       7
                                                  QAD412
CPD10080 D10000
                                       7
                                                  QAD412
CPD10070 D10000
                                       7
                                                  QAD413
CPD10060 D10000
                                       7
                                                  QAD413
CPD10050
          D10000
                                       7
                                                    NONE
CPD10040
          D10000
                                       7
                                                  QAD413
CPD10030
          D10000
                                       7
                                                  QAD413
CPD10020
          D10000
                                       7
                                                  QAD413
CPD10010
          D10000
                                       7
                                                  QAD413
CPD10000
          E10060
                                       0
                                                    NONE
CPE10090
          E10080
                                       7
                                                     513
CPE10080
          E10060
                                       7
                                                     513
CPE10070 E10060
                                       7
                                                     513
CPE10060 E10040
                                       7
                                                  QAD412
```

```
cyp PermittedDischarges woPit129-Base
CPE10050
          E10040
                                       7
                                                   QAD412
                                       7
                                                     NONE
CPE10040
          E10000
         E10010
                                                      513
CPE10020
                                        7
CPE10010 E10000
                                        7
                                                   QAD412
CPE10000 F10160
                                        0
                                                     NONE
CPF10250 F10230
                                        7
                                                   QAD512
CPF10240 F10230
                                        7
                                                      513
CPF10230 F10220
                                        7
                                                     NONE
CPF10220 F10210
                                        7
                                                     NONE
CPF10210 F10190
                                        7
                                                     NONE
CPF10190 F10130
                                        7
                                                     NONE
CPF10180 F10170
                                        7
                                                     NONE
CPF10170 F10130
                                        7
                                                     NONE
CPF10160 F10130
                                        7
                                                     NONE
CPF10140 F10130
                                        7
                                                     NONE
CPF10130 F10080
                                        7
                                                     NONE
CPF10120
          F10080
                                        7
                                                      513
                                                      513
CPF10110
          F10080
                                        7
CPF10100
                                        7
                                                   QAD512
          F10080
CPF10090
          F10080
                                        7
                                                   QAD413
CPF10080
                                        7
                                                      513
          F10005
CPF10030
                                        7
                                                   QAD412
          F10020
                                        7
                                                      513
CPF10020
          F10005
                                        7
CPF10005
          F10000
CPF10000
                                                     NONE
             OUT
                                        0
CP 10050
           10040
                                        7
                                                   QAD413
CP 10040
                                        7
                                                   QAD413
           10010
                                                   QAD413
CP 10020
           10010
                                        7
CP 10010
             OUT
                                                     NONE
                                        7
CPQAD412
             OUT
                                        0
CPQAD413
             OUT
                                        0
CPQAD512
             OUT
                                        0
CP
             OUT
     513
                                        0
CPSABINE
                                        2
             OUT
                                                     NONE
                                             NONE
CPSULPHR
             OUT
                                             NONE
                                                     NONE
```

```
cyp_PermittedDischarges_woPit129-Base
CPA240DM
            OUT
                                     2
                                          NONE
                                                  NONE
CPB270DM
            OUT
                                     2
                                          NONE
                                                  NONE
CPB70DUM
            OUT
                                     2
                                          NONE
                                                  NONE
CPB20MUN
            OUT
                                     2
                                          NONE
                                                  NONE
CPAVNGER
            OUT
                                     2
                                          NONE
                                                  NONE
CPDNGRFD
            OUT
                                     2
                                          NONE
                                                  NONE
CPHGHSPR
            OUT
                                     2
                                          NONE
                                                  NONE
CPJEFFSN
            OUT
                                     2
                                          NONE
                                                  NONE
CPLVGSTN
            OUT
                                     2
                                          NONE
                                                  NONE
CPORECTY
            OUT
                                          NONE
                                                  NONE
**
CPA-ZERO
            OUT
                                          ZERO
                                                  ZERO
                                                           -3
                                                                    0
**
**
   Constant Inflow Records
**
CIB10310
          50.42
                  47.26
                          53.28
                                 49.72
                                         44.71
                                                 41.43
CI
          40.91
                  39.96
                          36.83
                                 38.05
                                         41.43
                                                50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC
            271
                    255
                            278
                                   314
                                           318
                                                   306
CI
            427
                    427
                            408
                                   329
                                           286
                                                   302
**
**
**
   Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
**WR585100
                      IND20181231 1
              482
                                                                    104000PT129
                                                                                 PT129
**WSPIT129
             5355
**TXU app 5850, 6/24/05, kb
WR585001
                    IND20041231
             50
                                 1
                                                                  10405850001
                                                                                5850
WR585002
              0
                    IND20041231
                                 1
                                                                  10405850002
                                                                                5850
S0
                                BACKUP
```

			сур_	Permit Ceudischarges_worltiza-base	
WR585003	0	IND20041231	1 DACKUD	10405850003	5850
SO	_		BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
SO			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO	· ·	1110200 11231	BACKUP	10403030000	3030
WR585009	0	IND20041231	1	10405850009	5850
S0			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
SO	_		BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO	Ū	111020041231	BACKUP	10403030011	3030
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO	Ū	1110200-1231	BACKUP	10403030013	3030
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841	<b></b> .	10403030307	2020
			4	10/05050201	5850
WR585031	0	IND20041231	1	10405850301	3636
WSR58501	271.4	0.979 0.5841	4	40405050206	5050
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850
	•		_	20.030302	2020

WSR58502	245.1	0.979 0.5841	cyp_r cr iii c	ccapiscial ges_wort()	.29-0456	
**						
** APPLIC	CATION 58	14				
WR581431	0	OTHER20031028	1		10405814301	
WS HR9	356	0.979 0.5841			10103014301	
WR581432	0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841			20 10302 1302	
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856				
** APPLIC	CATION 58	13				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813003	
S0			BACKUP			
WR581302	0	581320031001	1		10405813002	
S0			BACKUP			
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM	130	0.979 0.5841	0			
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH	5	0.979 0.5841	0			
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0			
WRF10080	2343	MUN19830418	1	1	10404349001	4349
WSF10080	8.29	0.979 0.5841	0			
S0	3293.45	2343				
WRF10080 WSF10080	1281	IND19830418	1	1	10404349002	4349
N2L10080	8.29	0.979 0.5841	0			
30	3293.45	1281				

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WRB10250	0	REC19841127	1						10404522301			
WSB10250	380	0.979 0.5841		0								
WRF10180	202.5	IRR19841218	1					1	10404525101			
WRA10370	0	REC19750106	1						60404558301			
WSA10370	350	0.979 0.5841		0								
WRA10350	0	REC19751215	1						60404559301			
WSA10350	230	0.979 0.5841		0								
**												
**												
** Lake	Cypress S	Springs										
**		. 0										
**												
WRA10340	10500	MUN19700720	1	2	0.600				60404560301	4560	CYPRESS	
WSLKCYPS	72800											
**												
WRA10340	1000	MUN19660131	1						60404560302	4560	CYPRESS	
WSLKCYPS	72800											
**												
WRA10340	210	IRR19700720	1						60404560303	4560	CYPRESS	
WSLKCYPS	72800											
**												
WRA10340	3590	IND19700720	1	2	0.700	A10020			60404560304	4560	CYPRESS	
WSLKCYPS	72800											
**												
WRA10340	0	REC19660131	1						60404560305	4560	CYPRESS	
WSLKCYPS	72800											
**												
**												
WRA10300	11.61	IRR19630831	1						60404561001			
WRA10290	24.0	IRR19630801	1						60404562002			
**			-									
**												
** Lake	Monticel:	lo										

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				сур	_Permit	tedDischar	ges_woPit129-Base		
WRA10240	15300	IND19700406	1				60404563301	4563	
WSLKMONT **	40100								
WRA10240	1000	IND19730604	1				60404563302	4563	
WSLKMONT **	40100								
**									
**									
** Lake **	Bob Sand	lin							
WRA10200	10000	MUN19711220	1	2	0.600	A10020	60404564301	4564	ВОВ
WSBOBSAN **	213350								
WRA10200	8000	IND19711220	1				60404564302	4564	вов
WSBOBSAN **	213350								
	10000	71104004400							
WRA10200 WSBOBSAN		IND19711220	1	2	0.700		60404564303	4564	вов
**	213350								
WRA10200	0	DEC10711220	_						
WSBOBSAN	212250	REC19711220	1				60404564305	4564	BOB
		A DOD CANDITAL	441 13 1 T						
WRA10200	1930	1 BOB SANDLIN -							
WSBOBSAN		MUN19711220	1	2	0.600	B10310	2MEMBERSFRMBOB	4590	BOB LOTPBOB
		M BOB SANDLIN -	TND /	LITUA	\D.T.7.4.T.C				
WRA10200	1000	IND19711220	1	AU I HU	KIZATIO	'N			
WSBOBSAN		IND19/11220	1				1TXU_MONTE	4590	BOB LOTPBOB
		ORTZATION OF BOD	CANIT	NI TNI	LIATED D	TOUT NOTE			
** BOB SA	NDI TN STO	DRAGE, INFLOWS C	MII V	LIN	WAIEK K	TGHI. NOTE	THAT THIS AUTH WAS DEEN	MED TO	NOT HAVE ACCESS TO
WRA10200	19600	IND19780313	1						
**	1,000	14010700010	1				60404564304	4564	BOBROR
** =====	=======	==============							
WRA10120	1680	MUN19550822	1		0 600	======== A10020		45.55	
WSTANKSL		0.4012 0.856	-	0	0.000	ATOUZU	60404565301	4565	
WRA10120	550	IND19550822	1	_	0.700		60404565302	AECF.	
			_	_	300		00404303302	4565	

				сур	_Permitt	cedDischarge	es_woPit129-Base	
WSTANKSL	2700	0.4012 0.856		0	<del></del>	•	_	
WRA10120	0	REC19550822	1				60404565303	4565
WSTANKSL	2700	0.4012 0.856		0				
WRA10090	21.44	IRR19591231	1				60404566301	
WSA10090	0.23	0.979 0.5841		0				
WRA10100	6	IRR19561231	1				60404567301	
WSA10100	5	0.979 0.5841		0				
WRA10050	7.5	IRR19631231	1				60404568301	
WSA10050	35	0.979 0.5841		0				
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10070	0	REC19380317	1				60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10060	144	MUN19750120	1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10060	0	REC19750120	1				60404570302	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10040	4	IRR19631231	1				60404571301	
WSA10040	12	0.979 0.5841		0				
WRA10030	4.4	IRR19631231	1				60404572301	
WSA10030	10	0.979 0.5841		0				
WRE10020	25.3	IND19850604	1				10404573301	
WSE10020	42	0.979 0.5841		0				
WRA10010	11	IRR19551231	1				60404573001	
WRB10320	0	IRR19511231	1				60404574001	4574
WSOFF320	5.0	0.979 0.5841		0				
S0	5.43	1.40						
WRB10320	1.4	IRR19511231	1				60404574301	4574
WSB10320	0.5	0.979 0.5841		0				
WSOFF320	5.0	0.979 0.5841		0				
OR	5.0							
S0	5.43	1.40						
WRB10290	0	REC19730430	1				60404575301	
WSB10290	80	0.979 0.5841		0				
**								

**				cyp_PermittedDischarges_woPit129-Base	
**					
MCT3II I					
	11000	IND19730910	1	60404576301 4	576
WS WELSH	23587				
**					
WRB10270	0	REC19730910	1	60404576302 4	576
	23587				570
**					
**					
**					
WRB10230	124	IRR19500930	1	60404577301	
WSB10230	96	0.979 0.5841		0	
WRB10220	6	IRR19521231	1	60404578301	
WSB10220	1	0.979 0.5841	_	0	
WRB10210	75	IRR19531231	1		
WSB10210	64	0.979 0.5841	-	60404579301 0	
WRB10200	2	IRR19581231	1		
WSB10200	0.5	0.979 0.5841	-	60404580301 0	
WRB10180	0	REC19690922	1		
WSB10180	510	0.979 0.5841	1	60404581301 0	
**	310	0.575 0.5641		8	
**					
** Cynnacc	Cok di	voncion naint (	.D D4	10150	
** is used	to cun	version point, (		10150 which is on Cypress Crk, downstream of Ell	ison Reservoir,
** Fllicon	Chack	Reservoir	тррту	y to Ellison Crk Reservoir using the SO Record.	
**	creek	Reservoir			
WRB10170	2000	M IN ( O T O O T O O			
	2000	MUN19720508	1	60404582001 4:	582 ELLISON
WSELLISN **	24700				
	21000	IND19421130	1	60404582002 4	582 ELLISON
	24700				
** Fill fr	om Cypr	ess Creek at pri		ty	
WRB10170		19421130	1	60404582004 4	582 ELLISON

					C	b_securrecontscuarges_wostc15a-gase		
WSELLISN	24700							
S0		26000	B1015	9				
**								
** Miscel	.laneous	impound	lments o	on Ba	rnes	Cr etc.		
**		•						
WR458232	0	OTHER1	1972050	8		60404582303	4582	barnes
WSBARNES	24000	0.4012	0.85	6	0			
WR458232	0	OTHER1	L972 <b>0</b> 50	8		4582BU	4582	barnes
WSBARNES	24000							
S0			45823	7 BA	CKUP			
**								
**								
WRB10120	38.3	IRR1	1962073	1 1	-	60404583301		
WSB10120	4.79	0.979	0.584	1	0			
WRB10110	14.2	IRR1	L948093	0 1		60404584301		
WSB10110	60	0.979	0.584	1	0			
WRB10100	0.56	IRR1	L955033:	1 1	_	60404585301		
WSB10100	50	0.979	0.584	1	0			
WRB10090	1	IRR1	L964 <b>12</b> 3:	1 1	-	60404586301		
WSB10090	12	0.979	0.584	1	0			
WRB10080	150	IRR1	L <b>95612</b> 3:	1 1	_	60404587301		
WSSIMPSN	2500	0.4012	0.85	6	0			
**								
**								
**								
** Wilkes	Reserv	oir (aka	Johns	on Re	serv	oir)		
WRB10070	6668	IND1	L960 <mark>0</mark> 50	4 1	_	60404588301	4588	
NSNHOCSW	10100							
**								
WRB10070	0	REC1	L960050	4 1	-	60404588302	4588	
NSNHOCSW	10100							
**								
**								
WRB10050	0	REC1	L975120	8 1	-	60404589301		
WSB10050	240	0.979	0.584	1	0			

**				сур_	_PermittedDi	scharg	es_woPit1	.29-Base		
**										
** Lake	O'the Pi	nes								
** =====	=======	=======================================	===:	=====	========	=====	=======	==========		
** REDUCE	LOTP DE	MAND FOR PORTION	OF	WATER	AUTHORIZED	то ве	TAKEN AT	BOB SANDLIN	-	
WRB10040	40070	MUN19570916	1					1MUN	4590	FYLOTP
WSLKOPNS	251000	-1							.550	1 1 2 0 11
WRB10040	151800	IND19570916	1					2IND	4590	FYLOTP
WSLKOPNS	251000									
** ===== **	======	=======================================	===:	=====	========	======	=======	=========	=	
	0	70040404								
WRF10250 WSF10250	8	IRR19670430	1	_			1	60404591301		
WRF10230	6 96.88	0.979 0.5841		0						
WRF10240	85	IRR19690930 IRR19620531	1				1	60404592001		
WSF10240	100	0.979 0.5841	1				1	60404593301		
WRF10220	1080	IRR19550103	1	0			_			
WRF10210	2000	MUN19630218	1				1	60404594002		
WRF10190	80.21	IRR19570319	1				1	60404595001		
WRC10040	25	IRR19760621	1				1	60404596001		
WSC10040	35	0.979 0.5841	_	0				60404597301		
WRC10030	10	IND19700126	1					60404598301		
WSC10030	5	0.979 0.5841	_	0				00404598501		
WRC10010	47	IRR19530731	1					60404599001		
WSC10010	7	0.979 0.5841		0				00404599001		
S0	40.42	47								
WRF10170	62.5	IRR19660630	1				1	60404600001		
WRD10090	0	REC19461121	1				-	60404601301		
WSD10090	135	0.979 0.5841		0				00.00.001301		
WRD10080	0	REC19600211	1					60404602301		
WSD10080	1414	0.4012 0.856		0						
WRD10070	0	REC19730312	1					60404603301		
WSELWOOD	116	0.979 0.5841		0						
WRD10060	7.03	IRR19670630	1					60404604301		
WSD10060	28	0.979 0.5841		0						

				cyp_F	PermittedDischarges_woP	it129-Base	
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			

				cyp_PermittedDischarges_woPit129-Base
WR 10020	0	REC19470922	1	60404621301
WS 10020	160	0.979 0.5841		0
WRD10120	0	REC19860404	1	10405054301
WSD10120	550	0.979 0.5841		0
WRC10050	0	REC19860729	1	10405080301
WSC10050	300	0.979 0.5841		0
WRF10100	0	REC19861125	1	1 10405112301
WSF10100	277	0.979 0.5841		0
WRA10280	0	IND19880121	1	10405167301
WSPONDH1	477	0.979 0.5841		0
WRB10300	0	IRR19890112	1	10405212301
WSB10300	0.09	0.979 0.5841		0
WRB10260	0	IRR19890810	1	10405251301
WSB10260	86	0.979 0.5841		0
IFD10110	1025.6	CONST19891214	1	1 IF5272
**				
WRD10110	6180	MUN19891214	1	10405272301 5272
WSLKGILM	12720			20 (052) 2501 52/2
WRD10110	0	REC19891214	1	10405272302 5272
WSLKGILM	12720			20.002.000
WRF10090	0	REC19900710	1	1 10405302301
WSF10090	80	0.979 0.5841		0
WRA10260	0	IND19950522	1	10405529301
WSPONDH4	173.7	0.979 0.5841		0
WRE10080	0	REC19950801	1	10405537301
WSE10080	296	0.979 0.5841		0
WRE10090	34	IRR19980320	1	10405608301 5608
WSE10090	55.6	0.979 0.5841		0
WRE10090	0	REC19980320	1	10405608302 5608
WSE10090	55.6	0.979 0.5841		0
** This	water ri	ght is to fill Te	xas'	portion of Caddo Lake up to elevation 168.5 feet
WRF10005	0	OTHER99999999	1	60409999301 9999
WS CADDO	125000			
** This	water ri	ght is for Louisi	ana'	's diversion from Caddo Lake for each year
WRF10005	40000	MUN99999999	1	60409999302 9999

1 Sur!

WS CADDO **	165000											
** Stora	age-Area	Tables										
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN **	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	. 0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000 1	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
** Carollo	o add add	ditional	SVSA cur	ve for F	Pit 129.							
**SVPIT12	9 (	94	4 161	251	1 359	9 479	9 105	4 1416	2079	3759	4090	5355
**SAPIT12	9 (	12	2 16	26	<b>2</b> .	3 2	5 3:	3 39	50	62	72	98

<sup>\*\*</sup> Drought Indices

\*\*

\*\*

DI 1 1 CADDO

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

			.**

cyp\_PermittedDischarges\_woPit129-FYLOTP

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cyp\_PermittedDischarges\_woPit129-FYLOTP

```
Cypress Water Availability Modeling
    Full Authorized Diversions, No Return Flows
    Updated 6/18/2015 KA
T3
**
**
**
    General Comments
**
JD
      51
            1948
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                        0
                                                                                3
                                                                                         0
                                                                                                 0
                                                                                                         0
JO
RO
      -1
**
**FY
             10000
                      1000
                               100
                                                104000PT129
                                         10
FY
     1.0 241800
                    1000
                             100
                                                           FYLOTP
**FY
       1.0
             48500
                      1000
                               100
                                         10
                                                                BOB
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850307
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850301
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850306
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850304
**FY
             10000
                      1000
                               100
                                         10
                                               10405850303
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850305
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850302
**
**
    Monthly Water Use Factors
**
UC
    5813
              60
                      60
                              60
                                      60
                                               76
                                                       76
UC
              76
                      76
                              76
                                      60
                                               60
                                                       60
UC
     MUN
           0.077
                   0.070
                           0.075
                                   0.076
                                            0.084
                                                    0.091
UC
           0.100
                   0.100
                           0.089
                                   0.085
                                            0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                            0.081
                                                    0.077
UC
           0.109
                   0.109
                           0.104
                                   0.084
                                           0.072
                                                    0.076
UC
           0.000
     IRR
                   0.001
                           0.004
                                   0.013
                                           0.051
                                                    0.162
UC
           0.200
                   0.241
                           0.142
                                   0.097
                                           0.053
                                                   0.038
UC
     MIN
           0.079
                   0.080
                           0.084
                                   0.080
                                            0.081
                                                   0.077
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                            0.090
                                                   0.087
UC
     REC
           0.083
                   0.083
                           0.083
                                           0.083
                                   0.083
                                                   0.083
UC
           0.083
                   0.083
                           0.083
                                           0.083
                                   0.083
                                                    0.083
```

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cyp PermittedDischarges woPit129-FYLOTP
                                   0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                           0.083
                                                   0.083
                                   0.083
                                           0.083
UC
           0.083
                   0.083
                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                     1.0
UC MONTH
              31
                   28.25
                              31
                                      30
                                              31
                                                       30
              31
                              30
                                              30
                                                       31
UC
                      31
                                      31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                     NONE
CPPPDISC TCUSBC
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
**
**TXU app 5850, 6/24/05, kb
                                       7
CP585008 A10120
                                                     NONE
                                       7
CP585037 A10120
                                                      513
                                       7
                                                     NONE
CP585009 A10120
                                                     NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
                                         7
**CP585031 A10000
                                                        513
                                          7
                                                       NONE
**CP585007 A10000
                                          7
                                                       NONE
**CP585006 A10000
                                                      513
CP585031 PPDISC
                                       7
                                        7
                                                     NONE
CP585007 PPDISC
                                       7
CP585006 PPDISC
                                                     NONE
CP585036 585034
                                        7
                                                      513
                                        7
                                                      513
CP585034 585033
                                        7
                                                      513
CP585033 585032
                                                      513
CP585035 585032
                                        7
                                                      513
CP585032 585005
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                          7
                                                       NONE
**CP585004 A10000
                                          7
                                                       NONE
**CP585003 A10000
                                          7
                                                       NONE
**CP585002 A10000
                                          7
                                                       NONE
**CP585001 A10000
                                          7
                                                       NONE
```

```
cyp_PermittedDischarges_woPit129-FYLOTP
CP585005 PPDISC
                                       7
                                                   NONE
CP585004 TCUSBC
                                       7
                                                   NONE
CP585003 TCUSBC
                                       7
                                                   NONE
CP585002 TCUSBC
                                       7
                                                   NONE
CP585001 TCUSBC
                                       7
                                                   NONE
CP585011 A10070
                                       7
                                                   NONE
CP585012 A10010
                                       7
                                                   NONE
CP585013 A10010
                                       7
                                                   NONE
** add control points for A5814
CP581431 581432
                                                  QAD413
CP581432 A10260
                                       7
                                                  QAD413
CP581433 A10240
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                       7
                                                   NONE
CP581302 D10000
                                       7
                                                   NONE
CP581303 D10000
                                       7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                 B10170
CP458237 B10170
                                       7
                                                  B10170
**
CPA10370 A10340
                                      7
                                                 QAD413
CPA10350 A10340
                                      7
                                                 QAD413
CPA10340 A10300
                                      7
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
**
CPA10290 A10200
                                      7
                                                   NONE
CPA10280 A10240
                                      7
                                                 QAD413
CPA10260 A10240
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
                                      7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                      7
                                                    513
```

	cyp_PermittedDischa	ges_woPit129-FYLOTP
CPA10090 TCUSBC	7 5	13
CPA10070 A10010	7 5	13
CPA10060 A10010	7 5	13
CPA10050 A10010	7 5	13
CPA10040 A10010	7 5	13
CPA10030 A10010	7 QAD4	13
CPA10020 A10010	7 NO	NE
CPA10010 A10000	7 5	13
CPA10000 B10150	Ø NC	NE
CPB10320 B10310	7 QAD4	13
CPB10310 B10150	7 NC	NE
CPB10300 B10150	7 QAD4	13
CPB10290 B10150	7 QAD4	13
CPB10270 B10150	7	
CPB10260 B10150	7 QAD4	13
CPB10250 B10150	7 QAD4	13
CPB10230 B10170	7 5	13
CPB10220 B10230	7 5	13
CPB10210 B10150	7 5	13
CPB10200 B10150	7 5	13
CPB10180 B10170	. 7 5	13
CPB10170 B10150	7	
CPB10150 B10040	7 NC	NE ,
CPB10120 B10040	7 5	13
CPB10110 B10040	7 5	13
CPB10100 B10040	7 5	13
CPB10090 B10040	7 5	13
CPB10080 B10040	7 5	13
CPB10070 B10040	7	
CPB10050 B10040	7 QAD4	· <b>1</b> 3
**CPB10040 B10000	7	NONE
CPB10040 B10000	7	
CPB10000 F10230		NE
CPC10050 C10010	7 QAD4	13
CPC10040 C10010	7 QAD4	.13
CPC10030 C10010	7 QAD4	
CPC10010 C10000	7 QAD4	
CPC10000 F10180	0 NC	NE

		cyp_Permi <sup>.</sup>	ttedDischarges_woPit129-FYLO	TP
CPD10190	D10000	7	QAD412	•
CPD10180	D10000	7	QAD412	
CPD10170	D10160	7	QAD412	
CPD10160	D10150	7	513	
CPD10150	D10130	7	513	
CPD10140	D10130	7	QAD412	
CPD10130	D10000	7	QAD412	
CPD10120	D10000	7	QAD412	
CPD10110	D10000	7	QAD412	
CPD10090	D10000	7	QAD412	
CPD10080	D10000	7	QAD412	
CPD10070	D10000	7	QAD413	
CPD10060	D10000	7	QAD413	
CPD10050	D10000	7	NONE	
CPD10040	D10000	7	QAD413	
CPD10030	D10000	7	QAD413	
CPD10020	D10000	7	QAD413	
CPD10010	D10000	7	QAD413	
CPD10000	E10060	0	NONE	
CPE10090	E10080	7	513	
CPE10080	E10060	7	513	
CPE10070	E10060	7	513	
CPE10060	E10040	7	QAD412	
CPE10050	E10040	7	QAD412	
CPE10040	E10000	7	NONE	
CPE10020	E10010	7	513	
CPE10010	E10000	7	QAD412	
CPE10000	F10160	0	NONE	
CPF10250	F10230	7	QAD512	
CPF10240	F10230	7	513	
CPF10230	F10220	7	NONE	
CPF10220	F10210	7	NONE	
CPF10210	F10190	7	NONE	
CPF10190	F10130	7	NONE	
CPF10180	F10170	7	NONE	
CPF10170	F10130	7	NONE	
CPF10160	F10130	7	NONE	
CPF10140	F10130	7	NONE	
			• • • • •	

			cyp Perm	ittedDi	scharges	_woPit129-	FYLOTP
CPF10130	F10080		71 _ 7		NONE	-	
CPF10120	F10080		7		513		
CPF10110	F10080		7		513		
CPF10100	F10080		7		QAD512		
CPF10090	F10080		7		QAD413		
CPF10080	F10005		7		513		
CPF10030	F10020		7		QAD412		
CPF10020	F10005		7		513		
CPF10005	F10000		7				
CPF10000	OUT		0		NONE		
CP 10050	10040		7		QAD413		
CP 10040	10010		7		QAD413		
CP 10020	10010		7		QAD413		
CP 10010	OUT		7		NONE		
CPQAD412	OUT		0				
CPQAD413	OUT		0				
CPQAD512	OUT		0				
CP 513	OUT		0				
CPSABINE	OUT		2	NONE	NONE		
CPSULPHR	OUT		2	NONE	NONE		
CPA240DM	OUT		2	NONE	NONE		
CPB270DM	OUT		2	NONE	NONE		
CPB70DUM	OUT		2	NONE	NONE		
CPB20MUN	OUT		2	NONE	NONE		
CPAVNGER	OUT		2	NONE	NONE		
CPDNGRFD	OUT		2	NONE	NONE		
CPHGHSPR	OUT		2	NONE	NONE		
CPJEFFSN	OUT		2	NONE	NONE		
CPLVGSTN	OUT		2	NONE	NONE		
CPORECTY	OUT		2	NONE	NONE		
**							
		==========					
CPA-ZERO	OUT		2	ZERO	ZERO	-3	0
** ====== **		=========	========	======	=======	=======	====
**							
	ant Incl	low Bosonds					
Const	.anc inti	low Records					

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cyp_PermittedDischarges_woPit129-FYLOTP
CIB10310
           50.42
                   47.26
                           53.28
                                           44.71 41.43
                                   49.72
CI
           40.91
                   39.96
                           36.83
                                   38.05
                                           41.43
                                                    50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC
             271
                     255
                             278
                                      314
                                              318
                                                      306
CI
             427
                     427
                             408
                                      329
                                              286
                                                      302
**
**
    Water Rights and Associated Reservoir Storage Information
** Carollo add water right for modeling of pit 129
**WR585100
               482
                       IND20181231 1
                                                                        104000PT129
                                                                                      PT129
**WSPIT129
              5355
**TXU app 5850, 6/24/05, kb
WR585001
                     IND20041231
              50
                                   1
                                                                      10405850001
                                                                                     5850
WR585002
                     IND20041231
               0
                                   1
                                                                      10405850002
                                                                                     5850
S0
                                  BACKUP
WR585003
               0
                     IND20041231
                                   1
                                                                      10405850003
                                                                                     5850
S0
                                  BACKUP
WR585004
                     IND20041231
               0
                                  1
                                                                      10405850004
                                                                                     5850
S0
                                  BACKUP
WR585005
                     IND20041231
               0
                                   1
                                                                      10405850005
                                                                                     5850
S0
                                  BACKUP
WR585006
               0
                     IND20041231
                                   1
                                                                      10405850006
                                                                                     5850
SO
                                  BACKUP
WR585007
               0
                     IND20041231
                                   1
                                                                      10405850007
                                                                                     5850
S0
                                  BACKUP
WR585008
                     IND20041231
                                  1
                                                                      10405850008
                                                                                     5850
S0
                                  BACKUP
WR585009
               0
                     IND20041231
                                  1
                                                                      10405850009
                                                                                     5850
S0
                                  BACKUP
WR585010
               0
                     IND20041231
                                   1
                                                                      10405850010
                                                                                     5850
S0
                                  BACKUP
WR585011
                     IND20041231
                                  1
                                                                      10405850011
                                                                                     5850
S0
                                  BACKUP
WR585012
                     IND20041231
                                   1
                                                                      10405850012
                                                                                     5850
S0
                                  BACKUP
WR585013
               0
                     IND20041231
```

10405850013

5850

1

S0			BACKI		ii C C C C D I J C II C I	Bcs_woi itiz	3 1 12011	
WR585037	0	IND20041231	1	·.			10405850307	5850
WSR58507	525.6	0.979 0.5841	_				20.03030307	3030
WR585031	0	IND20041231	1				10405850301	5850
WSR58501	271.4	0.979 0.5841	_					
WR585036	0	IND20041231	1				10405850306	5850
WSR58506	327	0.979 0.5841						
WR585034	0	IND20041231	1				10405850304	5850
WSR58504	509.3	0.979 0.5841						
WR585033	0	IND20041231	1				10405850303	5850
WSR58503	287.3	0.979 0.5841						
WR585035	0	IND20041231	1				10405850305	5850
WSR58505	604.8	0.4012 0.856						
WR585032	0	IND20041231	1				10405850302	5850
WSR58502	245.1	0.979 0.5841						
**								
** APPLICA	ATION 58	314						
WR581431	0	OTHER20031028	1				10405814301	
WS HR9	356	0.979 0.5841						
WR581432	0	OTHER20031028	1				10405814302	
WS HR21	263	0.979 0.5841						
WR581433	0	OTHER20031028	1				10405814303	
WS HR10	1495	0.4012 0.856						
** APPLICA								
WR581301	685	581320031001	1				10405813001	
WR581303	0	581320031001	1				10405813003	
S0			BACK	.UP				
WR581302	0	581320031001	1				10405813002	
S0			BACK	.UP				
WRD10130	0	REC19830222	1				10404334301	4334
WSWHTOAK	6.7	0.979 0.5841		0				
WRD10160	0	REC19830222	1				10404334302	4334
WSBASSLK	3.4	0.979 0.5841		0				
WRD10140	0	REC19830222	1				10404334303	4334
WSDOGWOD	6	0.979 0.5841		0				
WRD10180	0	REC19830222	1				10404334304	4334
WSLKAUTM	130	0.979 0.5841		0				
WRD10170	0	REC19830222	1				10404334305	4334

WSCATFSH	F	0.070 0.5011	сур	_Per	mittedD	ischarges	s_woPit129-	FYLOTP	
	5			0					
WRD10150	0		1					10404334306	4334
WSLKPINE	10.5			0					
WRD10190	0		1					10404334307	4334
WSLKWALL	5	0.979 0.5841		0					
WRF10080	2343	MUN19830418	1				1	10404349001	4349
WSF10080	8.29	0.979 0.5841		0					.5.15
S0	3293.45	2343							
WRF10080	1281	IND19830418	1				1	10404349002	4349
WSF10080	8.29	0.979 0.5841		0				20101313002	7575
SO	3293.45	1281							
WRB10250	0	REC19841127	1					10404522301	
WSB10250	380	0.979 0.5841		0				10-0-522501	
WRF10180	202.5	IRR19841218	1				1	10404525101	
WRA10370	0	REC19750106	1				-	60404558301	
WSA10370	350	0.979 0.5841		0				00404556501	
WRA10350	0	REC19751215	1	•				60404559301	
WSA10350	230	0.979 0.5841	_	0				00404559501	
**				•					
**									
** Lake	Cypress	Springs							
**		. 0							
**									
WRA10340	10500	MUN19700720	1	2	0.600			60404560301	45.00 CVDD5.00
WSLKCYPS	72800		_	_	0.000			00404500501	4560 CYPRESS
**									
WRA10340	1000	MUN19660131	1					60404560302	4560 0000566
WSLKCYPS	72800		_					00404500302	4560 CYPRESS
**									
WRA10340	210	IRR19700720	1					C0404EC0303	4560 0000566
WSLKCYPS	72800	,, 00, 20	_					60404560303	4560 CYPRESS
**									
WRA10340	3590	IND19700720	1	2	0.700	A10020		60404560204	45.00 CVDD5.00
WSLKCYPS	72800		-	_	3.700	710070		60404560304	4560 CYPRESS
**									
WRA10340	0	REC19660131	1					60404560305	AEEA CYDDECC
WSLKCYPS	72800		_					C0404040005	4560 CYPRESS
**									

**			СУР	_' ' '	iii C CCGD	ischai Bes_w	701 TC12	.5 112011		
WRA10300 WRA10290		IRR19630831 IRR19630801	1 1					60404561001 60404562002		
**										
**	Monticello									
** WRA10240 WSLKMONT **	15300 40100	IND19700406	1					60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1					60404563302	4563	
**										
	Bob Sandli	n	•							
WRA10200 WSBOBSAN **		MUN19711220	1	2	0.600	A10020		60404564301	4564	ВОВ
WRA10200 WSBOBSAN **		IND19711220	1					60404564302	4564	ВОВ
WRA10200 WSBOBSAN		IND19711220	1	2	0.700			60404564303	4564	вов
WRA10200 WSBOBSAN	0 213350	REC19711220	1					60404564305	4564	вов
** LOTP W	NATER FROM	BOB SANDLIN -	MUNI	AUTH	HORIZATI	ON				
WRA10200 WSBOBSAN		MUN19711220	1			B10310		2MEMBERSFRMBOB	4590	BOB LOTPBOB
WRA10200	10000	BOB SANDLIN - IND19711220	IND /	AUTH(	ORIZATIO	N		1TXU_MONTE	4590	BOB LOTPBOB
	NING AUTHOR	IZATION OF BOB AGE, INFLOWS O		DLIN	WATER R	IGHT. NOTE	THAT	THIS AUTH WAS DEE	MED TO NO	T HAVE ACCESS TO
WRA10200	19600	IND19780313	1					60404564304	4564 B	SOBROR

*	*

** =====	======	=======================================	====	=====	======	=======		
WRA10120	1680	MUN19550822	1	2	0.600	A10020		4565
WSTANKSL	2700	0.4012 0.856		0		,120020	00404303301	4565
WRA10120	550	IND19550822	1	2	0.700		60404565302	4565
WSTANKSL	2700	0.4012 0.856		0			00404303302	4505
WRA10120	0	REC19550822	1				60404565303	4565
WSTANKSL	2700	0.4012 0.856		0			00-0-303363	4303
WRA10090	21.44	IRR19591231	1				60404566301	
WSA10090	0.23	0.979 0.5841		0			00404300301	
WRA10100	6	IRR19561231	1				60404567301	
WSA10100	5	0.979 0.5841		0			00404307301	
WRA10050	7.5	IRR19631231	1				60404568301	
WSA10050	35	0.979 0.5841		0			00404500501	
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0			00 10 1303301	4505
WRA10070	0	REC19380317	1				60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0			23.2.000002	1505
WRA10060	144	MUN19750120	1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979 0.5841		0				.5,0
WRA10060	0	REC19750120	1				60404570302	4570
WSOLDCTY	100	0.979 0.5841		0				.5,0
WRA10040	4	IRR19631231	1				60404571301	
WSA10040	12	0.979 0.5841		0				
WRA10030	4.4	IRR19631231	1				60404572301	
WSA10030	10	0.979 0.5841		0				
WRE10020	25.3	IND19850604	1				10404573301	
WSE10020	42	0.979 0.5841		0				
WRA10010	11	IRR19551231	1				60404573001	
WRB10320	0	IRR19511231	1				60404574001	4574
WSOFF320	5.0	0.979 0.5841		0				
SO	5.43	1.40						
WRB10320	1.4	IRR19511231	1				60404574301	4574
WSB10320	0.5	0.979 0.5841		0				
WSOFF320	5.0	0.979 0.5841		0				
OR	5.0	4 40						
SO WRB10290	5.43	1.40	_					
MVDTQ730	0	REC19730430	1				60404575301	

				суР_	Lei mit (reaptional des montris) - L	TLOIP	
WSB10290	80 0	.979	0.5841		0		
**							
**							
**							
** Welsh Res	servoir						
WRB10270 11	1000	IND19	730910	1		60404576301	4576
WS WELSH 23	3587						
**							
**							
WRB10270	0	REC19	730910	1		60404576302	4576
	3587						
**							
**							
**							
WRB10230	124		9500930	1		60404577301	
WSB10230			0.5841		0		
WRB10220	6		9521231	1		60404578301	
WSB10220			0.5841	_	0		
WRB10210	75		9531231	1		60404579301	
WSB10210			0.5841	_	0	6040450004	
WRB10200	2		581231	1		60404580301	
WSB10200			0.5841	_	0	60404504304	
WRB10180	0		9690922	1		60404581301	
WSB10180 **	510 0	1.9/9	0.5841		0		
**							
	Cole divo	ncion	noint (	CD D1/	0150 which is on Cypress Crk,	downstroom of E	llicon Poconvoin
					to Ellison Crk Reservoir usin		
** Ellison (				иррту	to Efficient Cirk Reservoir using	g the 30 Record	•
**	creek ke	351.A01	rı.				
	2000	MUN1 C	9720508	1		60404582001	4582 ELLISON
	4700 4700	HONTS	7/20300	1		00404302001	4502 EEEI50N
**	+700						
	1000	TND1C	9421130	1		60404582002	4582 ELLISON
	4700	111013		*		33.01302002	.502 22250.1
** Fill from		s Cree	ek at nr	iorit	v		
WRB10170	,,,		9421130	1	,	60404582004	4582 ELLISON
	4700			_			- ·

, and the same of

S0 **		26000	B10150	сур_	Per	rmittedDischarges_woPit129-FYLOTP		
	llaneous	s impound	lments on	Barne	25	Cr etc.		
WR458232 WSBARNES	0		L9720508			60404582303	4582	barnes
WR458232	24000 0	0.4012 OTHER1	0.856 9720508		0	450000		
WSBARNES	24000		, 20300			4582BU	4582	barnes
S0 **			458237	BACKU	JP			
**								
WRB10120	38.3	IRR1	.9620731	1		60404583301		
WSB10120	4.79		0.5841		0	30 104303501		
WRB10110 WSB10110	14.2 60		.9480930 0.5841	1	^	60404584301		
WRB10100	0.56		.9550331	1	0	60404585301		
WSB10100	50	0.979	0.5841	<del>-</del>	0	00404383301		
WRB10090 WSB10090	1		9641231	1		60404586301		
WRB10090	12 150		0.5841 .9561231	1	0	60404507204		
WSSIMPSN	2500	0.4012	0.856	_	0	60404587301		
**								
**								
** Wilkes	Reserv	oir (aka	Johnson	Reser	סעי	ir)		
WRB10070	6668		9600504	1		60404588301	4588	
WSJOHNSN **	10100						,,,,,	
WRB10070	ø	RFC1	.9600504	1		60404500000		
WSJOHNSN	10100	nec1	.5000504	1		60404588302	4588	
**								
WRB10050	0	DEC1	.9751208	1				
WSB10050	240		0.5841	1	0	60404589301		
**					•			
**   aka 0	'the Pi	nos						
			=======	====~	==	~======================================		
				-			==	

** DEDUCE	LOTE DE	FOR BORTTON			IIT CENDIZCIIA					
	40070	MAND FOR PORTION		WATER	AUTHORIZED	IO RE	IAKEN AI		4500	EVI OTD
WRB10040 WSLKOPNS	251000	MUN19570916 -1	1					1MUN	4590	FYLOTP
WRB10040	151800	-1 IND19570916	1					2TND	4500	EVI OTD
WSLKOPNS	251000	INDIADIABLO						2IND	4590	FYLOTP
		=======================================								
**										
WRF10250	8	IRR19670430	1				1	60404591301		
WSF10250	6	0.979 0.5841		0						
WRF10230	96.88	IRR19690930	1				1	60404592001		
WRF10240	85	IRR19620531	1				1	60404593301		
WSF10240	100	0.979 0.5841		0						
WRF10220	1080	IRR19550103	1				1	60404594002		
WRF10210	2000	MUN19630218	1				1	60404595001		
WRF10190	80.21	IRR19570319	1				1	60404596001		
WRC10040	25	IRR19760621	1					60404597301		
WSC10040	35	0.979 0.5841		0						
WRC10030	10	IND19700126	1					60404598301		
WSC10030	5	0.979 0.5841		0						
WRC10010	47	IRR19530731	1					60404599001		
WSC10010	7	0.979 0.5841		0						
50	40.42	47								
WRF10170	62.5	IRR19660630	1				1	60404600001		
WRD10090	0	REC19461121	1					60404601301		
WSD10090	135	0.979 0.5841		0						
WRD10080	0	REC19600211	1					60404602301		
WSD10080	1414	0.4012 0.856		0						
WRD10070	0	REC19730312	1					60404603301		
WSELWOOD	116	0.979 0.5841		0						
WRD10060	7.03	IRR19670630	1					60404604301		
WSD10060	28	0.979 0.5841		0						
WRD10030	0	REC19741209	1					60404605301	4605	
WSD10030	36	0.979 0.5841		0						
WRD10040	0	REC19741209	1	_				60404605302	4605	
WSD10040	114	0.979 0.5841	_	0						
WRD10020	0	REC19740812	1	_				60404606301		
WSD10020	294	0.979 0.5841	_	0						
WRD10010	0	REC19740812	1					60404607301		

			cyp_	_Permit	ttedDischarges_woPit1	L29-F	YLOTP	
WSD10010	330	0.979 0.5841		0	0 =			
WRE10070	18.2	IRR19520630	1				60404608301	
WSE10070	20	0.979 0.5841		0				
WRE10060	15	IND19680318	1				60404609001	4609
WSE10060	4.8	0.979 0.5841		0				4005
WRE10050	225	IND19821206	1				60404609301	4609
WSE10050	228.2	0.979 0.5841		0			00.00.005501	4005
WRE10040	122	IRR19551010	1				60404610001	
WRE10010	955	IND19430701	1				60404611301	
WSHOLMES	744	0.4012 0.856		0			00 10 1011501	
WRF10160	46.58	IRR19550323	1		1		60404612001	
WRF10140	165.21	MIN19690224	1		1		60404613001	
WRF10130	7558	MUN19470418	1		1		60404614001	4614
WRF10130	8442	MUN19561127	1		1		60404614002	4614
WRF10120	10	IRR19751215	1		1		60404615301	4014
WSF10120	54	0.979 0.5841		0	_		00.10.1013301	
WRF10110	0	REC19690811	1		1		60404616301	
WSSHADOW	1325	0.4012 0.856		0	_		00104010301	
WRF10030	0	REC19720207	1		1		60404617301	
WSLINDEN	112	0.979 0.5841		0	_		00404017501	
WRF10020	42	IRR19790221	1		1		60404618301	4618
WSF10020	42	0.979 0.5841		0	_		00 10 1010501	4010
WRF10020	51	IRR19810413	1		1		60404618302	4618
WSF10020	42	0.979 0.5841		0	_		00.01010502	4010
WR 10050	0	REC19760524	1				60404619301	
WS 10050	184	0.979 0.5841		0			00.0.013301	
WR 10040	0	REC19781016	1				60404620301	
WS 10040	600	0.4012 0.856		0			00 10 1020501	
WR 10020	0	REC19470922	1				60404621301	
WS 10020	160	0.979 0.5841		0			00.01022501	
WRD10120	0	REC19860404	1				10405054301	
WSD10120	550	0.979 0.5841		0				
WRC10050	0	REC19860729	1				10405080301	
WSC10050	300	0.979 0.5841		0				
WRF10100	0	REC19861125	1		1		10405112301	
WSF10100	277	0.979 0.5841		0				
WRA10280	0	IND19880121	1				10405167301	
WSPONDH1	477	0.979 0.5841		0				

				cvp I	PermittedDi	ischarges	woPit12	9-FYLOTF	)			
WRB10300	0	IRR19	890112	1		J			5212301			
WSB10300	0.09	0.979			0							
WRB10260	0	IRR19	890810	1				1040	5251301			
WSB10260	86	0.979	0.5841		0							
[FD10110 **	1025.6	CONST19	891214	1	1		IF5272					
WRD10110	6180	MUN19	891214	1				1040	5272301	5272		
NSLKGILM	12720											
WRD10110	0	REC19	891214	1				1040	5272302	5272		
WSLKGILM	12720											
WRF10090	0	REC19	900710	1			1	1040	5302301			
WSF10090	80	0.979	0.5841		0							
WRA10260	0	IND19	950522	1				1040	5529301			
WSPONDH4	173.7	0.979	0.5841		0							
WRE10080	0	REC19	950801	1				1040	55373 <b>01</b>			
WSE10080	296	0.979	0.5841		0							
WRE10090	34	IRR19	980320	1				1040	5608301	5608		
WSE10090	55.6	0.979	0.5841		0							
WRE10090	0	REC19	980320	1				1040	5608302	5608		
NSE10090	55.6	0.979			0							
** This	water rig	ght is to	fill T	exas'	portion of	Caddo L	ake up t	o elevat	ion 168.	5 feet		
WRF10005	0	OTHER99	999999	1				6040	9999301	9999		
NS CADDO	125000											
** This	water rig	ght is fo	r Louis	iana's	s diversion	from Ca	ddo Lake					
WRF10005	40000	MUN99	999999	1				6040	9999302	9999		
WS CADDO **	165000											
** Stor **	rage-Area	Tables							-			
SVLKMONT	0	1000	2000	556	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	76	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	1756	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN **	0	300	1100	236	3400	4450	5600	8000	8950	10750	12350	
NZNHOCVZ	0	150	700	146	99 2499	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	17		340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	1100		30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	116		2100	2700	3450	4150	5100	7150	
_	_					_						

cyp_PermittedDischarges_woPit129-FYLOTP												
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000	2200	
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000	10200		
SA CADDO	0	8500	15000	20500	27750	34500	42250	_	· ·			
SV WELSH	0	500	2600	4000	8200	12000		51500	64250			
SA WELSH	0	130	370	470			17400	20000	30100	36000	40000	44600
SVLKGILM	0	670			710	890	1130	1230	1600	1740	1865	1930
	_		2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
** Carollo ad	ld add	ditional	SVSA cur	ve for	Di+ 120							
**SVPIT129		94				) 470	1054					
**SAPIT129	•	_					-				4090	5355
**	•	9 12	2 16	2	0 23	3 25	5 33	3 39	56	62	72	98

\*\* Drought Indices

\*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

\*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

\*\* Therefore, this DI record is only included as a place holder. \*\*

DI 1

CADDO 1 IS 4 0 125000 125001 865000 ΙP 100 100 100 100

\*\*

Streamflow And Evaporation Records

\*\* ED

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		<u>-</u> "		
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				100
Specification	-			
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	•			
		·		

```
Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
T3
    Updated 6/18/2015 KA
**
**
    General Comments
**
**
JD
      51
            1948
                       1
                              -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                        0
                                                                                3
                                                                                        0
                                                                                                 0
                                                                                                         0
**
   JO
RO
      -1
**
**FY
             10000
         1
                      1000
                               100
                                        10
                                                104000PT129
**FY
       1.0
            241800
                      1000
                               100
                                                             FYLOTP
**FY
       1.0
             48500
                      1000
                               100
                                         10
                                                                BOB
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850307
**FY
         1
             10000
                      1000
                               100
                                               10405850301
                                         10
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850306
**FY
         1
             10000
                      1000
                               100
                                         10
                                               10405850304
**FY
         1
             10000
                      1000
                               100
                                        10
                                               10405850303
**FY
         1
             10000
                      1000
                               100
                                         10
                                               10405850305
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850302
**
   Monthly Water Use Factors
**
UC
    5813
              60
                      60
                              60
                                      60
                                               76
                                                       76
UC
              76
                      76
                              76
                                      60
                                               60
                                                       60
UC
     MUN
           0.077
                   0.070
                           0.075
                                   0.076
                                           0.084
                                                    0.091
UC
           0.100
                           0.089
                   0.100
                                   0.085
                                           0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                           0.081
                                                    0.077
UC
           0.109
                   0.109
                           0.104
                                   0.084
                                           0.072
                                                    0.076
UC
     IRR
           0.000
                   0.001
                           0.004
                                   0.013
                                           0.051
                                                    0.162
UC
           0.200
                   0.241
                                   0.097
                           0.142
                                           0.053
                                                   0.038
UC
    MIN
           0.079
                   0.080
                           0.084
                                   0.080
                                           0.081
                                                    0.077
```

```
cyp_PermittedDischarges_wPit129-Base
UC
                                            0.090
           0.080
                   0.084
                           0.088
                                    0.090
                                                    0.087
UC
     REC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                           0.083
                                            0.083
                   0.083
                                    0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC CONST
                                                      1.0
             2.0
                     2.0
                              2.0
                                      2.0
                                              2.0
UC
             1.0
                     1.0
                              1.0
                                      1.0
                                              1.0
                                                      1.0
UC MONTH
                                                       30
              31
                   28.25
                               31
                                       30
                                               31
UC
              31
                      31
                               30
                                       31
                                               30
                                                       31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                        7
                                                     NONE
CPPPDISC TCUSBC
                                        7
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
**
**TXU app 5850, 6/24/05, kb
                                                     NONE
                                        7
CP585008 A10120
                                        7
                                                      513
CP585037 A10120
                                        7
                                                     NONE
CP585009 A10120
CP585010 A10120
                                        7
                                                     NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                          7
                                                        513
**CP585007 A10000
                                                       NONE
                                          7
                                          7
**CP585006 A10000
                                                       NONE
                                        7
                                                       513
CP585031 PPDISC
                                        7
                                                     NONE
CP585007 PPDISC
CP585006 PPDISC
                                        7
                                                     NONE
CP585036 585034
                                        7
                                                      513
                                        7
                                                      513
CP585034 585033
                                        7
CP585033 585032
                                                      513
                                        7
CP585035 585032
                                                       513
CP585032 585005
                                        7
                                                       513
```

** Caroll	o modify existing	CPs to	include now	tracking CD for	)_WLT(TZ	1
**CP58500	5 A10000	2, 3 (0	7	MONE	P1C 129	anatyses
**CP58500			7	NONE NONE		
**CP58500			, 7	NONE		
**CP58500			7	NONE		
**CP58500			7	NONE		
	PPDISC		7			
CP585004	TCUSBC		7	NONE NONE		
CP585003	TCUSBC		, 7	NONE		
CP585002	TCUSBC		7	NONE		
CP585001	TCUSBC		7	NONE		
CP585011	A10070		7	NONE		
	A10010		7	NONE		
CP585013	A10010		7			
	ntrol points for A	\5814	,	NONE		
CP581431	581432	.5021	7	QAD413		
CP581432	A10260		7	QAD413 QAD413		
CP581433	A10240		7	QAD413 QAD413		
	ntrol points for A	\5813	,	CIPUMS		
CP581301	D10000		7	NONE		
CP581302	D10000		, 7	NONE		
CP581303	D10000		7	NONE		
** addition	onal CPs for C4582	for E		Watershed		
CP458232	B10170		7	B10170		
CP458237	B10170		7	B10170 B10170		
**			•	D10170		
CPA10370	A10340		7	QAD413		
CPA10350	A10340		7	QAD413 QAD413		
CPA10340	A10300		7	δνη <sub>4</sub> τη		
**CPA10300	0 A10000		. 7	NONE		
CPA10300	A10200		7	NONE		
**			•	HOHE		
CPA10290	A10200		7	NONE		
CPA10280	A10240		7	QAD413		
CPA10260	A10240		7	QAD413		
				·		

```
cyp PermittedDischarges wPit129-Base
**CPA10240 A10000
CPA10240 A10200
                                       7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                       513
**CPA10100 A10000
                                         7
                                                       513
**CPA10090 A10000
                                         7
                                                       513
CPA10120 TCUSBC
                                                     513
                                       7
                                                     513
CPA10100 TCUSBC
                                       7
                                                     513
CPA10090 TCUSBC
                                       7
                                                     513
CPA10070 A10010
                                       7
                                                     513
CPA10060 A10010
                                       7
CPA10050
                                       7
                                                     513
         A10010
CPA10040 A10010
                                       7
                                                     513
CPA10030 A10010
                                       7
                                                  QAD413
CPA10020
                                       7
                                                    NONE
         A10010
                                       7
CPA10010
         A10000
                                                     513
                                                    NONE
CPA10000
         B10150
                                       0
                                       7
                                                  QAD413
CPB10320 B10310
                                       7
CPB10310 B10150
                                                    NONE
CPB10300 B10150
                                                  QAD413
                                       7
                                       7
                                                  QAD413
CPB10290 B10150
CPB10270 B10150
                                       7
CPB10260 B10150
                                       7
                                                  QAD413
                                                  QAD413
CPB10250 B10150
                                       7
CPB10230 B10170
                                       7
                                                     513
CPB10220 B10230
                                       7
                                                     513
CPB10210 B10150
                                       7
                                                     513
                                       7
                                                     513
CPB10200
          B10150
CPB10180
         B10170
                                       7
                                                     513
                                       7
CPB10170 B10150
                                                    NONE
CPB10150
          B10040
                                       7
                                                     513
CPB10120
                                       7
          B10040
CPB10110
                                       7
          B10040
                                                     513
CPB10100 B10040
                                       7
                                                     513
```

```
cyp_PermittedDischarges_wPit129-Base
CPB10090
          B10040
                                       7
                                                     513
CPB10080
          B10040
                                       7
                                                     513
CPB10070 B10040
                                       7
CPB10050 B10040
                                       7
                                                  QAD413
**CPB10040 B10000
                                         7
                                                      NONE
         B10000
CPB10040
                                       7
CPB10000 F10230
                                       0
                                                    NONE
CPC10050 C10010
                                       7
                                                  QAD413
CPC10040 C10010
                                       7
                                                  QAD413
CPC10030 C10010
                                       7
                                                  QAD413
CPC10010 C10000
                                       7
                                                  QAD413
CPC10000 F10180
                                       0
                                                    NONE
CPD10190 D10000
                                       7
                                                  QAD412
CPD10180 D10000
                                       7
                                                  QAD412
CPD10170 D10160
                                       7
                                                  QAD412
CPD10160 D10150
                                       7
                                                     513
CPD10150 D10130
                                       7
                                                     513
CPD10140 D10130
                                       7
                                                  QAD412
CPD10130 D10000
                                       7
                                                  QAD412
CPD10120 D10000
                                       7
                                                  QAD412
CPD10110 D10000
                                       7
                                                  QAD412
CPD10090
         D10000
                                       7
                                                  QAD412
CPD10080
         D10000
                                       7
                                                  QAD412
CPD10070
         D10000
                                       7
                                                  QAD413
CPD10060 D10000
                                       7
                                                  QAD413
CPD10050
         D10000
                                       7
                                                    NONE
CPD10040 D10000
                                       7
                                                  QAD413
CPD10030
         D10000
                                       7
                                                  QAD413
CPD10020
          D10000
                                       7
                                                  QAD413
CPD10010
          D10000
                                       7
                                                  QAD413
CPD10000
         E10060
                                       0
                                                    NONE
CPE10090 E10080
                                       7
                                                     513
CPE10080
          E10060
                                       7
                                                     513
CPE10070
          E10060
                                       7
                                                     513
CPE10060 E10040
                                       7
                                                  QAD412
```

```
cyp PermittedDischarges wPit129-Base
CPE10050
          E10040
                                        7
                                                   QAD412
CPE10040
          E10000
                                        7
                                                     NONE
CPE10020
          E10010
                                        7
                                                      513
CPE10010
         E10000
                                        7
                                                   QAD412
CPE10000 F10160
                                        0
                                                     NONE
CPF10250
         F10230
                                        7
                                                   QAD512
CPF10240 F10230
                                        7
                                                      513
CPF10230 F10220
                                        7
                                                     NONE
CPF10220 F10210
                                                     NONE
                                        7
CPF10210 F10190
                                                     NONE
                                        7
CPF10190 F10130
                                        7
                                                     NONE
CPF10180 F10170
                                        7
                                                     NONE
CPF10170 F10130
                                                     NONE
                                        7
CPF10160 F10130
                                        7
                                                     NONE
CPF10140
         F10130
                                        7
                                                     NONE
CPF10130
         F10080
                                        7
                                                     NONE
CPF10120
                                        7
                                                      513
         F10080
CPF10110
          F10080
                                        7
                                                       513
CPF10100
                                                   QAD512
         F10080
                                        7
CPF10090
                                        7
                                                   QAD413
          F10080
CPF10080
                                        7
                                                      513
         F10005
CPF10030
                                                   OAD412
         F10020
                                        7
CPF10020
         F10005
                                                      513
                                        7
CPF10005
                                        7
          F10000
CPF10000
             OUT
                                        0
                                                     NONE
CP 10050
           10040
                                                   QAD413
                                        7
CP 10040
                                        7
           10010
                                                   QAD413
CP 10020
           10010
                                        7
                                                   QAD413
CP 10010
             OUT
                                        7
                                                     NONE
CPQAD412
             OUT
                                        0
CPQAD413
             OUT
                                        0
CPQAD512
             OUT
                                        0
CP
     513
             OUT
                                        0
CPSABINE
             OUT
                                        2
                                             NONE
                                                     NONE
CPSULPHR
             OUT
                                        2
                                             NONE
                                                     NONE
```

```
cyp_PermittedDischarges_wPit129-Base
CPA240DM
            OUT
                                     2
                                          NONE
                                                 NONE
CPB270DM
            OUT
                                     2
                                         NONE
                                                 NONE
CPB70DUM
            OUT
                                     2
                                         NONE
                                                 NONE
CPB20MUN
            OUT
                                     2
                                         NONE
                                                 NONE
CPAVNGER
            OUT
                                     2
                                         NONE
                                                 NONE
CPDNGRFD
            OUT
                                     2
                                         NONE
                                                 NONE
CPHGHSPR
            OUT
                                     2
                                                 NONE
                                         NONE
CPJEFFSN
            OUT
                                     2
                                         NONE
                                                 NONE
CPLVGSTN
            OUT
                                         NONE
                                                 NONE
CPORECTY
            OUT
                                         NONE
                                                 NONE
**
CPA-ZERO
            OUT
                                         ZERO
                                                 ZERO
                                                                   0
**
**
   Constant Inflow Records
**
CIB10310
          50.42
                 47.26
                                 49.72
                         53.28
                                        44.71
                                                41.43
CI
          40.91
                  39.96
                         36.83
                                 38.05
                                        41.43
                                                50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC
            271
                    255
                           278
                                   314
                                          318
                                                  306
CI
            427
                    427
                           408
                                   329
                                          286
                                                  302
**
**
   Water Rights and Associated Reservoir Storage Information
**
**
** Carollo add water right for modeling of pit 129
WR585100
            482
                   IND20181231 1 1
                                          1.0
                                                                 104000PT129
                                                                              PT129
WSPIT129
           5355
**
**TXU app 5850, 6/24/05, kb
WR585001
             50
                   IND20041231
                                 1
                                                                 10405850001
                                                                               5850
WR585002
                   IND20041231
              0
                                 1
                                                                 10405850002
                                                                               5850
S0
                                BACKUP
```

			СУ	b_ber.mircreapiscual.ges_wbiriza-pase	
WR585003	0	IND20041231	1	10405850003	5850
S0			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
S0			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
S0			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
S0			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
S0			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
S0			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
SO			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
SO			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
S0			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			·
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856	_	20.00000	
WR585032	0	IND20041231	1	10405850302	5850
	9	1110200-1201	-	10-03030302	2020

			cyp_rermitcedDischarges_wbit129-B	450
WSR58502 **	245.1	0.979 0.5841	31	130
** APPLICA	ATION 58	14		
WR581431	0	OTHER20031028	1	05814301
WS HR9	356	0.979 0.5841		73014301
WR581432	0	OTHER20031028	1 10/1	05814302
WS HR21	263	0.979 0.5841		73014302
WR581433	0	OTHER20031028	1	05814303
WS HR10	1495	0.4012 0.856	1040	73614363
** APPLICA	ATION 58	13		
WR581301	685	581320031001	1 1040	05813001
WR581303	0	581320031001		05813001 05813003
S0			BACKUP	75015005
WR581302	0	581320031001	1 1040	95813002
S0			BACKUP	75015002
WRD10130	0	REC19830222	1 1040	04334301 4334
WSWHTOAK	6.7	0.979 0.5841	0	7.00 1001
WRD10160	0	REC19830222	1 1040	04334302 4334
WSBASSLK	3.4	0.979 0.5841	0	
WRD10140	0	REC19830222	1 1040	94334303 4334
WSDOGWOD	6	0.979 0.5841	0	
WRD10180	0	REC19830222	1 1046	04334304 4334
WSLKAUTM	130	0.979 0.5841	0	,
WRD10170	0	REC19830222	1 1046	94334305 4334
WSCATFSH	5	0.979 0.5841	0	
WRD10150	0	REC19830222	1 1046	94334306 4334
WSLKPINE	10.5	0.979 0.5841	0	
WRD10190	0	REC19830222		94334307 4334
WSLKWALL	5	0.979 0.5841	0	
WRF10080	2343	MUN19830418		04349001 4349
WSF10080	8.29	0.979 0.5841	0	
	3293.45	2343		
WRF10080	1281	IND19830418		04349002 4349
WSF10080	8.29	0.979 0.5841	0	
SO 3	3293.45	1281		

				сур	_Permit	tedDischa	rges_wPit	t129-Base	
WRB10250	0	REC19841127	1		_			10404522301	
WSB10250	380	0.979 0.5841		0					
WRF10180	202.5	IRR19841218	1				1	10404525101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.5841		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.5841		0					
**									
**									
	Cypress	Springs							
**									
**									
WRA10340	10500	MUN19700720	1	2	0.600			60404560301	4560 CYPRESS
WSLKCYPS	72800								
**									
WRA10340	1000	MUN19660131	1					60404560302	4560 CYPRESS
WSLKCYPS	72800								
**									
WRA10340	210	IRR19700720	1					60404560303	4560 CYPRESS
WSLKCYPS **	72800								
			_	_					
WRA10340	3590	IND19700720	1	2	0.700	A10020		60404560304	4560 CYPRESS
WSLKCYPS **	72800								
	•	DEC40660474	_					60404560305	4560 0\(\mathrea{D}\)
WRA10340	0	REC19660131	1					60404560305	4560 CYPRESS
WSLKCYPS **	72800								
**									
	44 64	TDD40630034						60404564004	
WRA10300	11.61	IRR19630831	1					60404561001	
WRA10290 **	24.0	IRR19630801	1					60404562002	
**									
**   240	Montical	1.0							

<sup>\*\*</sup> Lake Monticello

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WRA10240 WSLKMONT **	15300 40100	IND19700406	1	су	p_Permit	ttedDischa	rges_wPit129-Base 60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1				60404563302	4563	
**									
** Lake **	Bob Sand	lin							
WRA10200 WSBOBSAN **	10000 213350	MUN19711220	1	2	0.600	A10020	60404564301	4564	ВОВ
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1				60404564302	4564	ВОВ
WRA10200 WSBOBSAN **	10900 213350	IND19711220	1	2	0.700		60404564303	4564	ВОВ
WRA10200 WSBOBSAN	0 213350	REC19711220	1				60404564305	4564	вов
** LOTP W. WRA10200	ATER FRO	M BOB SANDLIN -							
WSBOBSAN	1930 213350	MUN19711220	1	2	0.600	B10310	2MEMBERSFRMBOB	4590	BOB LOTPBOB
** LOTP W		M BOB SANDLIN -	IND A	AUTH	ORIZATIO	)N			
WRA10200 WSBOBSAN	10000	IND19711220	1				1TXU_MONTE	4590	BOB LOTPBOB
** REMAIN	ING AUTH	ORIZATION OF BOB	SAN	DLIN	WATER R	IGHT. NOTE	THAT THIS AUTH WAS DEE	MED TO N	IOT HAVE ACCESS TO
** BOB SAI WRA10200	NDLIN STO 19600	ORAGE, INFLOWS O	NLY.						The three recessions
**	13000	IND19780313	1				60404564304	4564	BOBROR
** =====	=====:	=======================================	====	====:	=======	========	========		
WSTANKSL	1980	MUN19550822 0.4012 0.856	1	2 0	0.600	A10020	60404565301	4565	
WRA10120	550	IND19550822	1	2	0.700		60404565302	4565	

				сур	_Permit	tedDischar	ges_wPit129-Base	
WSTANKSL	2700	0.4012 0.856		0				
WRA10120	0	REC19550822	1				60404565303 4	565
WSTANKSL	2700	0.4012 0.856		0				
WRA10090	21.44	IRR19591231	1				60404566301	
WSA10090	0.23	0.979 0.5841		0				
WRA10100	6	IRR19561231	1				60404567301	
WSA10100	5	0.979 0.5841		0				
WRA10050	7.5	IRR19631231	1				60404568301	
WSA10050	35	0.979 0.5841		0				
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301 4	569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10070	0	REC19380317	1				60404569302 4	569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10060	144	MUN19750120	1	2	0.600	A10020	60404570301 4	570
WSOLDCTY	100	0.979 0.5841		0				
WRA10060	0	REC19750120	1				60404570302 4	570
WSOLDCTY	100	0.979 0.5841		0				
WRA10040	4	IRR19631231	1				60404571301	
WSA10040	12	0.979 0.5841		0				
WRA10030	4.4	IRR19631231	1				60404572301	
WSA10030	10	0.979 0.5841		0				
WRE10020	25.3	IND19850604	1				10404573301	
WSE10020	42	0.979 0.5841		0				
WRA10010	11	IRR19551231	1				60404573001	
WRB10320	0	IRR19511231	1				60404574001 4	574
WSOFF320	5.0	0.979 0.5841		0				
SO	5.43	1.40						
WRB10320	1.4	IRR19511231	1				60404574301 4	574
WSB10320	0.5	0.979 0.5841		0				
WSOFF320	5.0	0.979 0.5841		0				
OR	5.0							
S0	5.43	1.40						
WRB10290	0	REC19730430	1				60404575301	
WSB10290	80	0.979 0.5841		0				

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**				Cyp_PermittedDischarges_wPit129-Base
**				
** Welsh R	eservoi	r		
WRB10270	11000	IND19730910	1	60404576301 4576
	23587			60404576301 4576
**				
**				
WRB10270	0	REC19730910	1	60404576302 4576
	23587			45/6
**				
**				
**				
WRB10230	124	IRR19500930	1	60404577301
WSB10230	96	0.979 0.5841		0
WRB10220	6	IRR19521231	1	60404578301
WSB10220	1	0.979 0.5841		0
WRB10210	75	IRR19531231	1	60404579301
WSB10210	64	0.979 0.5841		0
WRB10200	2	IRR19581231	1	60404580301
WSB10200	0.5	0.979 0.5841		0
WRB10180	0 510	REC19690922	1	60404581301
WSB10180 **	510	0.979 0.5841		0
**				
• •	د داد ما د			
** is used	to sum	version point, (	CP B1	0150 which is on Cypress Crk, downstream of Ellison Reservoir,
13 0360	to supp	piement water si Reservoir	трьтл	to Ellison Crk Reservoir using the SO Record.
**	Creek i	rezel.AOTt.		
WRB10170	2000	MUN19720508	1	
	24700	1101113720308	1	60404582001 4582 ELLISON
**	24700			
WRB10170	21000	IND19421130	1	5040450000
	24700	11017451130	T	60404582002 4582 ELLISON
		ess Creek at pri	iori+	V
WRB10170		19421130	1	
			-	60404582004 4582 ELLISON

				CyP_	_i ci miteccabischai ges_wi itiza base	
WSELLISN	24700	26000 04045	•			
S0 **		26000 B1015	0			
** Miscel **	laneous	impoundments	on Barn	es Cr	r etc.	
WR458232	0	OTHER1972050	8		60404582303 45	82 barnes
WSBARNES	24000	0.4012 0.85		0		
WR458232	0	OTHER1972050	8		4582BU 45	82 barnes
WSBARNES	24000					
S0		45823	7 BACK	UP		
**						
**						
WRB10120	38.3	IRR1962073			60404583301	
WSB10120	4.79	0.979 0.584		0	40.40.470.4004	
WRB10110	14.2	IRR1948093			60404584301	
WSB10110	60	0.979 0.584		0	60404505304	
WRB10100	0.56	IRR1955033		•	60404585301	
WSB10100	50	0.979 0.584		0	CO40450C201	
WRB10090	1	IRR1964123		0	60404586301	
WSB10090	12	0.979 0.584		0	C0404507201	
WRB10080	150	IRR1956123		0	60404587301	
WSSIMPSN **	2500	0.4012 0.85	Ю	0		
**					•	
**						
	Racary	oir (aka Johns	on Race	rvoi	n)	
WRB10070	6668	IND1960050		JI VOI		888
WSJOHNSN	10100	INDIGOOGG	/ <del></del>		00404300301 4.	,00
**	10100					
WRB10070	0	REC1960050	)4 1		60404588302 45	88
WSJOHNSN	10100	RECEDOOOSO			30 10 1300302	
**						
**						
WRB10050	0	REC1975120	8 1		60404589301	
WSB10050	240	0.979 0.584		0		

**				сур	_Permitteau:	ıscharg	ges_wPit1	29-Base		
**										
** Lake	O'the Pi	nec								
		=======================================								
** REDUCE	LOTP DF	MAND FOR PORTION	OF.	::	AUTHODIZED	TO DE	 TANCN AT	======================================		
WRB10040	40070	MUN19570916	1	WAILN	AUTHORIZED	IO BE	IAKEN AI			
WSLKOPNS	251000	-1	_					1MUN	4590	FYLOTP
WRB10040	151800	IND19570916	1					2710		
WSLKOPNS	251000	21122370310	_					2IND	4590	FYLOTP
** =====:		=======================================	===:	=====	=======			=======================================		
**										
WRF10250	8	IRR19670430	1				1	60404591301		
WSF10250	6	0.979 0.5841		0			_	00404331301		
WRF10230	96.88	IRR19690930	1				1	60404592001		
WRF10240	85	IRR19620531	1				1	60404593301		
WSF10240	100	0.979 0.5841		0			-	00404050501		
WRF10220	1080	IRR19550103	1				1	60404594002		
WRF10210	2000	MUN19630218	1				1	60404595001		
WRF10190	80.21	IRR19570319	1				1	60404596001		
WRC10040	25	IRR19760621	1					60404597301		
WSC10040	35	0.979 0.5841		0				00.0.007502		
WRC10030	10	IND19700126	1					60404598301		
WSC10030	5	0.979 0.5841		0						
WRC10010	47	IRR19530731	1					60404599001		
WSC10010	7	0.979 0.5841		0						
SO .	40.42	47								
WRF10170	62.5	IRR19660630	1				1	60404600001		
WRD10090	0	REC19461121	1					60404601301		
WSD10090	135	0.979 0.5841		0						
WRD10080	0	REC19600211	1					60404602301		
WSD10080	1414	0.4012 0.856		0						
WRD10070	0	REC19730312	1					60404603301		
WSELWOOD	116	0.979 0.5841		0						
WRD10060	7.03	IRR19670630	1	_				60404604301		
WSD10060	28	0.979 0.5841		0						

				cyp_Permitted	dDischar:	ges_wPit:	129-Base	
WRD10030	0	REC19741209	1	· -	·	_	60404605301	4605
WSD10030	36	0.979 0.5841		0				
WRD10040	0	REC19741209	1				60404605302	4605
WSD10040	114	0.979 0.5841		0				
WRD10020	0	REC19740812	1				60404606301	
WSD10020	294	0.979 0.5841		0				
WRD10010	0	REC19740812	1				60404607301	
WSD10010	330	0.979 0.5841		0				
WRE10070	18.2	IRR19520630	1				60404608301	
WSE10070	20	0.979 0.5841		0				
WRE10060	15	IND19680318	1				60404609001	4609
WSE10060	4.8	0.979 0.5841		0				
WRE10050	225	IND19821206	1				60404609301	4609
WSE10050	228.2	0.979 0.5841		0				
WRE10040	122	IRR19551010	1				60404610001	
WRE10010	955	IND19430701	1				60404611301	
WSHOLMES	744	0.4012 0.856		0				
WRF10160	46.58	IRR19550323	1			1	60404612001	
WRF10140	165.21	MIN19690224	1			1	60404613001	
WRF10130	7558	MUN19470418	1			1	60404614001	4614
WRF10130	8442	MUN19561127	1			1	60404614002	4614
WRF10120	10	IRR19751215	1			1	60404615301	
WSF10120	54	0.979 0.5841		0				
WRF10110	0	REC19690811	1			1	60404616301	
WSSHADOW	1325	0.4012 0.856		0				
WRF10030	0	REC19720207	1			1	60404617301	
WSLINDEN	112	0.979 0.5841		0		•		
WRF10020	42	IRR19790221	1			1	60404618301	4618
WSF10020	42	0.979 0.5841		0				
WRF10020	51	IRR19810413	1			1	60404618302	4618
WSF10020	42	0.979 0.5841		0				
WR 10050	0	REC19760524	1				60404619301	
WS 10050	184	0.979 0.5841		0				
WR 10040	0	REC19781016	1				60404620301	
WS 10040	600	0.4012 0.856		0				

WR 10020	۵	DEC10470000	_	cyp_PermittedDischarges_wPit129-Base
WK 10020 WS 10020	_	REC19470922	1	60404621301
WRD10120		0.979 0.5841	_	0
WSD10120	•	REC19860404	1	10405054301
WRC10050		0.979 0.5841		0
WSC10050	•	REC19860729	1	10405080301
		0.979 0.5841		0
WRF10100	_	REC19861125	1	1 10405112301
WSF10100	277	0.979 0.5841		0
WRA10280	0	IND19880121	1	10405167301
WSPONDH1	477	0.979 0.5841		0
WRB10300	0	IRR19890112	1	10405212301
WSB10300	0.09	0.979 0.5841		0
WRB10260	0	IRR19890810	1	10405251301
WSB10260	86	0.979 0.5841		0
IFD10110 **	1025.6	CONST19891214	1	1 IF5272
WRD10110	6180	MUN19891214	4	
WSLKGILM	12720	MUN13031214	1	10405272301 5272
WRD10110	0	REC19891214	4	
WSLKGILM	12720	NLC13031214	1	10405272302 5272
WRF10090	0	REC19900710	1	
WSF10090	80	0.979 0.5841	1	1 10405302301
WRA10260	0	IND19950522	1	0
WSPONDH4	173.7	0.979 0.5841	Τ.	10405529301 0
WRE10080	0	REC19950801	1	
WSE10080	296	0.979 0.5841	Τ.	10405537301 0
WRE10090	34	IRR19980320	1	
WSE10090	55.6	0.979 0.5841	1	10405608301 5608
WRE10090	99.0	REC19980320	1	0
WSE10090	55.6	0.979 0.5841	1	10405608302 5608
		ght is to fill $T\epsilon$		
WRF10005	Water 11,	OTHER999999999		Take up to citydeion 100.5 feet
WS CADDO	125000	O 111LN 22222329	1	60409999301 9999
		ght is for Louisi	ana!	le divendia fum e ll
WRF10005	40000	MUN99999999999999	.ana 1	's diversion from Caddo Lake for each year
	10000	HUNDDDDDDDD	Т	60409999302 9999

cyp_i or matteredata or matteredata or matteredata or matteredata or matteredata or matteredata or matteredata												
WS CADDO **	165000											
** Stor:	age-Area	Tahles										
**	age Area	Tabics										
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
NZNHOCAZ	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**												
** Caroll	o add ad	ditional	SVSA cu	rve for	Pit 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129	0	12	16	20	23	25	33	39	50	62	72	98
**												

<sup>\*\*</sup> Drought Indices

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

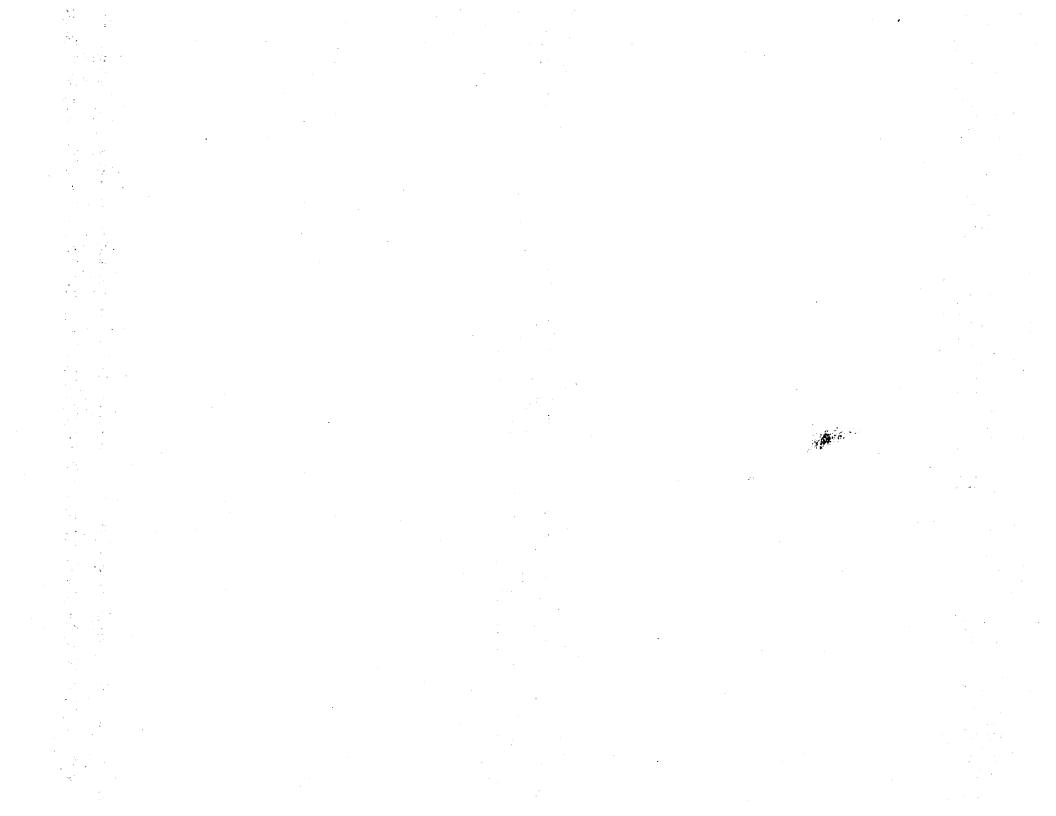
<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

<sup>\*\*</sup> 

DI 1 1 CADDO

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cyp\_PermittedDischarges\_wPit129Div-FYLO

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Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
    Updated 6/18/2015 KA
T3
**
**
    General Comments
**
**
JD
      51
            1948
                       1
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                        0
                                                                                3
                                                                                        0
                                                                                                 0
                                                                                                         0
JO
RO
      -1
**
**FY
         1
             10000
                      1000
                               100
                                         10
                                                104000PT129
FΥ
     1.0 241800
                    1000
                              100
                                                           FYLOTP
**FY
       1.0
             48500
                      1000
                                100
                                         10
                                                                BOB
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850307
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850301
**FY
         1
             10000
                      1000
                               100
                                         10
                                                10405850306
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850304
**FY
             10000
         1
                      1000
                               100
                                         10
                                                10405850303
**FY
             10000
                      1000
                               100
                                         10
                                                10405850305
**FY
         1
             10000
                      1000
                               100
                                                10405850302
                                         10
**
    Monthly Water Use Factors
**
UC
    5813
              60
                      60
                               60
                                       60
                                                       76
                                               76
UC
              76
                      76
                                      60
                              76
                                               60
                                                       60
UC
           0.077
     MUN
                   0.070
                           0.075
                                   0.076
                                            0.084
                                                    0.091
UC
           0.100
                   0.100
                           0.089
                                   0.085
                                           0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                           0.081
                                                    0.077
UC
           0.109
                   0.109
                           0.104
                                   0.084
                                           0.072
                                                    0.076
UC
     IRR
           0.000
                   0.001
                           0.004
                                   0.013
                                           0.051
                                                    0.162
UC
           0.200
                   0.241
                           0.142
                                   0.097
                                            0.053
                                                    0.038
UC
           0.079
     MIN
                   0.080
                           0.084
                                   0.080
                                            0.081
                                                    0.077
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                            0.090
                                                    0.087
UC
     REC
           0.083
                   0.083
                           0.083
                                   0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                            0.083
                                                    0.083
```

```
cyp PermittedDischarges wPit129Div-FYLO
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC
           0.083
                                   0.083
                   0.083
                           0.083
                                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
                     1.0
                             1.0
                                             1.0
             1.0
                                     1.0
                                                     1.0
UC MONTH
                   28.25
              31
                                              31
                                                      30
                              31
                                      30
UC
              31
                      31
                              30
                                      31
                                              30
                                                      31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                       7
                                                    NONE
                                       7
CPPPDISC TCUSBC
                                                    NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                     513
**
**TXU app 5850, 6/24/05, kb
                                       7
CP585008 A10120
                                                    NONE
CP585037 A10120
                                       7
                                                     513
                                       7
                                                    NONE
CP585009 A10120
                                                    NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                       513
                                         7
                                                      NONE
**CP585007 A10000
**CP585006 A10000
                                         7
                                                      NONE
                                       7
CP585031 PPDISC
                                                     513
CP585007 PPDISC
                                       7
                                                    NONE
                                       7
                                                    NONE
CP585006 PPDISC
                                                     513
CP585036 585034
CP585034 585033
                                       7
                                                     513
                                       7
                                                     513
CP585033 585032
                                       7
                                                     513
CP585035 585032
                                                     513
CP585032 585005
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                         7
                                                      NONE
**CP585004 A10000
                                         7
                                                      NONE
                                         7
**CP585003 A10000
                                                      NONE
**CP585002 A10000
                                         7
                                                      NONE
                                         7
                                                      NONE
**CP585001 A10000
```

```
cyp_PermittedDischarges_wPit129Div-FYLO
CP585005 PPDISC
                                                   NONE
CP585004 TCUSBC
                                      7
                                                   NONE
CP585003 TCUSBC
                                       7
                                                   NONE
CP585002 TCUSBC
                                                   NONE
CP585001 TCUSBC
                                                   NONE
CP585011 A10070
                                                   NONE
CP585012 A10010
                                      7
                                                   NONE
CP585013 A10010
                                                   NONE
** add control points for A5814
CP581431 581432
                                      7
                                                 QAD413
CP581432 A10260
                                                 QAD413
CP581433 A10240
                                      7
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                      7
                                                   NONE
CP581302 D10000
                                      7
                                                   NONE
CP581303 D10000
                                      7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                 B10170
CP458237 B10170
                                      7
                                                 B10170
**
CPA10370 A10340
                                      7
                                                 QAD413
CPA10350 A10340
                                      7
                                                 QAD413
CPA10340 A10300
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
**
CPA10290 A10200
                                      7
                                                   NONE
CPA10280 A10240
                                      7
                                                 QAD413
CPA10260 A10240
                                      7
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                        7
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                      7
                                                    513
```

#### cyp\_PermittedDischarges\_wPit129Div-FYLO CPA10090 TCUSBC 513 7 CPA10070 A10010 7 513 CPA10060 A10010 7 513 CPA10050 A10010 7 513 CPA10040 A10010 7 513 CPA10030 A10010 7 QAD413 CPA10020 A10010 7 NONE CPA10010 A10000 7 513 CPA10000 B10150 0 NONE CPB10320 B10310 7 QAD413 CPB10310 B10150 7 NONE CPB10300 B10150 7 QAD413 CPB10290 B10150 7 QAD413 CPB10270 B10150 7 CPB10260 B10150 7 QAD413 CPB10250 B10150 QAD413 7 CPB10230 B10170 7 513 CPB10220 B10230 7 **51**3 CPB10210 B10150 7 513 CPB10200 B10150 7 513 CPB10180 B10170 7 513 CPB10170 B10150 7 CPB10150 B10040 7 NONE CPB10120 B10040 7 513 CPB10110 B10040 7 513 7 513 CPB10100 B10040 513 CPB10090 B10040 7 513 CPB10080 B10040 7 7 CPB10070 B10040 QAD413 CPB10050 B10040 7 \*\*CPB10040 B10000 7 NONE CPB10040 B10000 7 CPB10000 F10230 0 NONE CPC10050 C10010 7 QAD413 CPC10040 C10010 **QAD413** CPC10030 C10010 7 OAD413 CPC10010 C10000 QAD413

NONE

CPC10000 F10180

CPD101909 D100000 7 QAD412 CPD10170 D10160 7 QAD412 CPD10170 D10160 7 QAD412 CPD10150 D10130 7 513 CPD10140 D10130 7 513 CPD10130 D10000 7 QAD412 CPD10130 D10000 7 QAD412 CPD10120 D10000 7 QAD412 CPD10110 D10000 7 QAD412 CPD10110 D10000 7 QAD412 CPD10090 D10000 7 QAD412 CPD10090 D10000 7 QAD412 CPD10090 D10000 7 QAD413 CPD10070 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD412 CPD10010 D10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 E10000 7 QAD412 CPD10010 F10010 7 NONE CPD10200 F10010 7 NONE CPD10200 F10010 7 NONE CPD10200 F10010 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE CPD10210 F100100 7 NONE			cvp Permit	ttedDischarges_wPit129Div-FYLO
CPD10180         D10000         7         QAD412           CPD10170         D10160         7         QAD412           CPD10160         D10150         7         513           CPD10170         D10130         7         513           CPD10140         D10130         7         QAD412           CPD10130         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10031         D10000         7         QAD413           CPD10032         D10000         7         QAD413           CPD10033         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10010	CPD10190	D10000		0ΔD412
CPD101760         D10150         7         QAD412           CPD10160         D10150         7         513           CPD10140         D10130         7         S13           CPD10130         D10000         7         QAD412           CPD10120         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10080         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10060         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10000         D10000         7         QAD413           CPD10000 <td>CPD10180</td> <td>D10000</td> <td></td> <td></td>	CPD10180	D10000		
CPD10160         D10150         7         513           CPD10150         D10130         7         513           CPD101140         D10130         7         QAD412           CPD101120         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10080         D10000         7         QAD412           CPD10080         D10000         7         QAD413           CPD10060         D10000         7         QAD413           CPD10050         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         E10060         0         NONE           CPE10040         E10060         7         513           CPE10060	CPD10170	D10160		
CPD10150         D10130         7         513           CPD10140         D10130         7         QAD412           CPD10130         D10000         7         QAD412           CPD10120         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10020         E10000         7         QAD413           CPD10000         E10000         7         S13           CPE10070	CPD10160	D10150		
CPD10140         D10130         7         QAD412           CPD10130         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD101110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10060         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         S13           CPE10070<	CPD10150	D10130		
CPD10130         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10080         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         E10000         7         S13           CPE10090         E10000         7         S13           CPE10040         E10040         7         QAD412           CPE10040	CPD10140	D10130		
CPD10120         D10000         7         QAD412           CPD10110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10060         D10000         7         QAD413           CPD10070         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         E10080         7         513           CPE10080         E10080         7         513           CPE10080         E10040         7         QAD412           CPE10020	CPD10130	D10000		<del>-</del>
CPD101110         D10000         7         QAD412           CPD10090         D10000         7         QAD412           CPD10070         D10000         7         QAD413           CPD10060         D10000         7         QAD413           CPD10050         D10000         7         QAD413           CPD10040         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10020         E10060         7         S13           CPE10090         E10080         7         S13           CPE10070         E10060         7         S13           CPE10070         E10040         7         QAD412           CPE10080         E10040         7         QAD412           CPE10020         E10010         7         S13           CPE10020	CPD10120	D10000		_
CPD10090 D10000 7 QAD412 CPD10080 D10000 7 QAD412 CPD10070 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10040 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10020 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10000 E10060 0 NONE CPE10090 E10060 7 S13 CPE10080 E10060 7 S13 CPE10080 E10060 7 S13 CPE10080 E10060 7 S13 CPE10080 E10060 7 S13 CPE10080 E10060 7 S13 CPE10080 E10040 7 QAD412 CPE10080 E10040 7 QAD412 CPE10080 E10040 7 QAD412 CPE10080 E10000 7 NONE CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 F10160 0 NONE CPE10010 F10160 0 NONE CPE10010 F10160 0 NONE CPE1020 F10230 7 QAD512 CPE10240 F10230 7 S13 CPE10240 F10230 7 NONE CPE10220 F10210 7 NONE CPE10230 F10220 7 NONE CPE10210 F10130 7 NONE CPE10109 F10130 7 NONE CPE10109 F10130 7 NONE CPE10100 F10130 7 NONE	CPD10110	D10000		
CPD10080 D10000 7 QAD412 CPD10070 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10040 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10020 D10000 7 QAD413 CPD10020 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10000 E10060 0 NONE CPE10090 E10080 7 513 CPE10090 E10080 7 513 CPE10070 E10060 7 513 CPE10070 E10060 7 QAD412 CPE10060 E10040 7 QAD412 CPE10060 E10040 7 QAD412 CPE10060 E10040 7 QAD412 CPE10090 F10010 7 S13 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 F10160 0 NONE CPE1020 F10230 7 QAD512 CPF10240 F10230 7 QAD512 CPF10240 F10230 7 NONE CPF10250 F10230 7 NONE CPF10210 F10190 7 NONE CPF10210 F10190 7 NONE CPF10210 F10130 7 NONE CPF10110 F10130 7 NONE	CPD10090			<del>-</del>
CPD10070 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10050 D10000 7 QAD413 CPD10040 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10020 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10000 E10060 0 NONE CPE10090 E10080 7 513 CPE10090 E10080 7 513 CPE10080 E10060 7 513 CPE10070 E10060 7 513 CPE10060 E10040 7 QAD412 CPE10050 E10040 7 QAD412 CPE10050 E10040 7 QAD412 CPE10050 E10000 7 NONE CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD512 CPE10010 F10150 0 NONE CPF10230 F10230 7 QAD512 CPF10240 F10230 7 NONE CPF10250 F10210 7 NONE CPF10210 F10190 7 NONE CPF10190 F10130 7 NONE CPF10190 F10130 7 NONE CPF10190 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE	CPD10080			_
CPD10060 D10000 7 QAD413 CPD10050 D10000 7 NONE CPD10040 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10020 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 D10000 7 QAD413 CPD10010 E10060 0 NONE CPE10090 E10080 7 513 CPE10080 E10060 7 513 CPE10070 E10060 7 513 CPE10070 E10060 7 513 CPE10060 E10040 7 QAD412 CPE10050 E10040 7 QAD412 CPE10050 E10040 7 QAD412 CPE10050 E10040 7 NONE CPE10010 E10000 7 NONE CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD412 CPE10010 E10000 7 QAD512 CPE10250 F10230 7 QAD512 CPF10240 F10230 7 NONE CPF10250 F10210 7 NONE CPF10210 F10190 7 NONE CPF10210 F10190 7 NONE CPF10210 F10130 7 NONE CPF10190 F10130 7 NONE CPF10190 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE CPF10170 F10130 7 NONE	CPD10070			<del>-</del>
CPD10050         D10000         7         NONE           CPD10040         D10000         7         QAD413           CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10070         E10060         7         513           CPE10070         E10060         7         513           CPE10070         E10060         7         513           CPE10070         E10040         7         QAD412           CPE10050         E10040         7         QAD412           CPE10020         E10010         7         S13           CPE10020         E10010         7         S13           CPE10020         F10160         0         NONE           CPF10240         F10230         7         QAD512           CPF10240         F10230         7         NONE           CPF10220         F10210         7         NONE           CPF10210         F10130         7         NONE           CPF10170         F10130	CPD10060			<del>-</del>
CPD10040         D10000         7         QAD413           CPD10030         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10080         E10060         7         513           CPE10070         E10060         7         513           CPE10060         E10040         7         QAD412           CPE10050         E10040         7         QAD412           CPE10040         E10010         7         S13           CPE10020         E10010         7         S13           CPE10010         E10000         7         QAD412           CPE10020         F10160         0         NONE           CPF10250         F10230         7         QAD512           CPF10240         F10230         7         NONE           CPF10220         F10210         7         NONE           CPF10190         F10130         7         NONE           CPF10160         F10130	CPD10050	D10000		_
CPD10030         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10070         E10060         7         513           CPE10070         E10060         7         513           CPE10060         E10040         7         QAD412           CPE10060         E10040         7         QAD412           CPE10040         E10000         7         NONE           CPE10010         E10010         7         S13           CPE10010         E10000         7         QAD412           CPE10010         E10000         7         QAD412           CPE10010         F10160         0         NONE           CPF10250         F10230         7         QAD512           CPF10240         F10230         7         NONE           CPF10220         F10210         7         NONE           CPF10210         F10130         7         NONE           CPF10160         F1013	CPD10040			
CPD10020         D10000         7         QAD413           CPD10010         D10000         7         QAD413           CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10080         E10060         7         513           CPE10070         E10060         7         513           CPE10060         E10040         7         QAD412           CPE10050         E10040         7         QAD412           CPE10040         E10000         7         NONE           CPE10020         E10010         7         513           CPE10010         E10000         7         QAD412           CPE10010         E10000         7         QAD412           CPE10010         E10200         7         QAD512           CPF10250         F10230         7         QAD512           CPF10240         F10230         7         NONE           CPF10220         F10210         7         NONE           CPF10210         F10130         7         NONE           CPF10180         F10170         7         NONE           CPF10160         F1013	CPD10030	D10000		
CPD10010         D10000         7         QAD413           CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10080         E10060         7         513           CPE10070         E10060         7         513           CPE10060         E10040         7         QAD412           CPE10050         E10040         7         QAD412           CPE10040         E10000         7         NONE           CPE10020         E10010         7         S13           CPE10010         E10000         7         QAD412           CPE10010         E10000         7         QAD412           CPE10010         E10000         7         QAD412           CPE10010         F10160         0         NONE           CPF10250         F10230         7         QAD512           CPF10240         F10230         7         NONE           CPF10220         F10210         7         NONE           CPF10210         F10130         7         NONE           CPF10180         F10130         7         NONE           CPF10160         F10130<	CPD10020	D10000		
CPD10000         E10060         0         NONE           CPE10090         E10080         7         513           CPE10080         E10060         7         513           CPE10070         E10060         7         513           CPE10060         E10040         7         QAD412           CPE10050         E10040         7         QAD412           CPE10040         E10010         7         NONE           CPE10020         E10010         7         QAD412           CPE10010         E10000         7         QAD412           CPE10010         E10000         7         QAD412           CPE10000         F10160         0         NONE           CPF10250         F10230         7         QAD512           CPF10240         F10230         7         S13           CPF10230         F10220         7         NONE           CPF10220         F10210         7         NONE           CPF10190         F10130         7         NONE           CPF10180         F10130         7         NONE           CPF10160         F10130         7         NONE           CPF10160         F10130 <td>CPD10010</td> <td></td> <td></td> <td>-</td>	CPD10010			-
CPE10090       E10080       7       513         CPE10080       E10060       7       513         CPE10070       E10060       7       513         CPE10060       E10040       7       QAD412         CPE10050       E10040       7       QAD412         CPE10040       E10000       7       NONE         CPE10020       E10010       7       QAD412         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       S13         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10130       7       NONE         CPF10180       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE	CPD10000	E10060		
CPE10080       E10060       7       513         CPE10070       E10060       7       513         CPE10060       E10040       7       QAD412         CPE10050       E10040       7       QAD412         CPE10040       E10000       7       NONE         CPE10010       E10000       7       QAD412         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       S13         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10130       7       NONE         CPF10180       F10170       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE	CPE10090	E10080		
CPE10070       E10060       7       513         CPE10060       E10040       7       QAD412         CPE10050       E10040       7       QAD412         CPE10040       E10000       7       NONE         CPE10020       E10010       7       QAD412         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       S13         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10130       7       NONE         CPF10180       F10170       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE	CPE10080	E10060		
CPE10060       E10040       7       QAD412         CPE10050       E10040       7       QAD412         CPE10040       E10000       7       NONE         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       NONE         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE	CPE10070	E10060		
CPE10050       E10040       7       QAD412         CPE10040       E10000       7       NONE         CPE10020       E10010       7       S13         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       NONE         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE	CPE10060	E10040		
CPE10040       E10000       7       NONE         CPE10020       E10010       7       S13         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       NONE         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE	CPE10050	E10040		~
CPE10020       E10010       7       513         CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       NONE         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10160       F10130       7       NONE	CPE10040	E10000		_
CPE10010       E10000       7       QAD412         CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       NONE         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE	CPE10020	E10010	7	
CPE10000       F10160       0       NONE         CPF10250       F10230       7       QAD512         CPF10240       F10230       7       S13         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE		E10000	7	
CPF10250       F10230       7       QAD512         CPF10240       F10230       7       513         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE		F10160	0	
CPF10240       F10230       7       513         CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10110       F10130       7       NONE		F10230	7	
CPF10230       F10220       7       NONE         CPF10220       F10210       7       NONE         CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE		F10230	7	-
CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10180       F10170       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE		F10220	7	
CPF10210       F10190       7       NONE         CPF10190       F10130       7       NONE         CPF10180       F10170       7       NONE         CPF10170       F10130       7       NONE         CPF10140       F10130       7       NONE			7	
CPF10190       F10130       7       NONE         CPF10180       F10170       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE		F10190	7	
CPF10180       F10170       7       NONE         CPF10170       F10130       7       NONE         CPF10160       F10130       7       NONE         CPF10140       F10130       7       NONE			7	
CPF10170 F10130 7 NONE CPF10160 F10130 7 NONE			7	
CDE10140 F10130			7	
CPF10140 F10130 7 NONE				NONE
·	CPF10140	F10130	7	NONE

			cvp Perm	ittedDi	scharges_v	wPit129Di	v-FYLO
CPF10130	F10080	•	7		NONE		
CPF10120	F10080		7		513		
CPF10110	F10080		7		<b>51</b> 3		
CPF10100	F10080		7		QAD512		
CPF10090	F10080		7		QAD413		
CPF10080	F10005		7		513		
CPF10030	F10020		7		QAD412		
CPF10020	F10005		7		513		
CPF10005	F10000		7				
CPF10000	OUT		0		NONE		
CP 10050	10040	.*	7		QAD413		
CP 10040	10010		7		QAD413		
CP 10020	10010		7		QAD413		
CP 10010	OUT		7		NONE		
CPQAD412	OUT		0				
CPQAD413	OUT		0				
CPQAD512	OUT		0				
CP 513	OUT		0				
CPSABINE	OUT		2	NONE	NONE		
CPSULPHR	OUT		2	NONE	NONE		
CPA240DM	OUT		2	NONE	NONE		
CPB270DM	OUT		2	NONE	NONE		
CPB70DUM	OUT		2	NONE	NONE		
CPB20MUN	OUT		2	NONE	NONE		
CPAVNGER	OUT		2	NONE	NONE		
CPDNGRFD	OUT		2	NONE	NONE		
CPHGHSPR	OUT		2	NONE	NONE		
CPJEFFSN	OUT		2	NONE	NONE		
CPLVGSTN	OUT		2	NONE	NONE		
CPORECTY **	OUT		2	NONE	NONE		
CPA-ZERO	 OUT	=======================================	======================================	ZERO	======== ZERO	-3	==== 0
			_			-	_
**				<b></b> -			
**							
** Const	ant Inf	low Records					

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Constant Inflow Records

cyp\_PermittedDischarges\_wPit129Div-FYLO CIB10310 50.42 47.26 49.72 53.28 44.71 41.43 CI40.91 39.96 36.83 38.05 41.43 50.42 \*\* Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP CIPPDISC 271 255 278 314 318 306 CI427 427 408 329 286 302 \*\* \*\* Water Rights and Associated Reservoir Storage Information \*\* \*\* Carollo add water right for modeling of pit 129 WR585100 482 IND20181231 1 1 104000PT129 PT129 WSPIT129 5355 WRB10040 IND20181231 1 JrFill 4590 WSLKOPNS 251000 \*\*TXU app 5850, 6/24/05, kb WR585001 50 IND20041231 1 10405850001 5850 WR585002 0 IND20041231 1 10405850002 5850 S0 BACKUP WR585003 0 IND20041231 1 10405850003 5850 S0 **BACKUP** WR585004 0 IND20041231 1 10405850004 5850 S0 **BACKUP** WR585005 IND20041231 1 10405850005 5850 S0 **BACKUP** WR585006 IND20041231 1 10405850006 5850 S0 **BACKUP** WR585007 0 IND20041231 1 5850 10405850007 S0 **BACKUP** WR585008 0 IND20041231 1 10405850008 5850 S0 **BACKUP** WR585009 IND20041231 1 10405850009 5850 S0 **BACKUP** WR585010 IND20041231 1 10405850010 5850 S0 **BACKUP** WR585011 IND20041231 1 10405850011 5850 S0 **BACKUP** 

10405850012

5850

WR585012

0

IND20041231

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S0			BACKUP	0 =	·	
WR585013	0	IND20041231	1		10405850013	5850
SO	_		BACKUP		20,05050025	3030
WR585037	0	IND20041231	1		10405850307	5850
WSR58507	525.6	0.979 0.5841				
WR585031	0	IND20041231	1		10405850301	5850
WSR58501	271.4	0.979 0.5841				
WR585036	0	IND20041231	1		10405850306	5850
WSR58506	327	0.979 0.5841				
WR585034	0	IND20041231	1		10405850304	5850
WSR58504	509.3	0.979 0.5841				
WR585033	0	IND20041231	1		10405850303	5850
WSR58503	287.3	0.979 0.5841				
WR585035	0	IND20041231	1		10405850305	5850
WSR58505	604.8	0.4012 0.856				
WR585032	0	IND20041231	1		10405850302	5850
WSR58502	245.1	0.979 0.5841				
**						
** APPLICA	ATION 58	314				
WR581431	0	OTHER20031028	1		10405814301	
WS HR9	356	0.979 0.5841				
WR581432	0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841				
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856				
** APPLICA	ATION 58	313				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813003	
SO			BACKUP			
WR581302	0	581320031001	1		10405813002	
S0			BACKUP			
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334

			сур	_Per	mittedD	ischarges	s_wPit129Di	v-FYI O	
WSLKAUTM	130	0.979 0.5841	-	0		O		20	
WRD10170	0	REC19830222	1					10404334305	4334
WSCATFSH	5	0.979 0.5841		0				1040400400	4334
WRD10150	0	REC19830222	1	_				10404334306	4224
WSLKPINE	10.5	0.979 0.5841	_	0				10404334306	4334
WRD10190	0	REC19830222	1	Ū				10404334307	
WSLKWALL	5	0.979 0.5841	_	0				10404334307	4334
WRF10080	2343	MUN19830418	1	U			4	101010101001	
WSF10080	8.29	0.979 0.5841	_	0			1	10404349001	4349
SO	3293.45	2343		v					
WRF10080	1281	IND19830418	1				4	40.0	
WSF10080	8.29	0.979 0.5841	_	0			1	10404349002	4349
SO	3293.45	1281		v					
WRB10250	0	REC19841127	1						
WSB10250	380	0.979 0.5841	1	0				10404522301	
WRF10180	202.5	IRR19841218	1	О					
WRA10370	0	REC19750106	1 1				1	10404525101	
WSA10370	350	0.979 0.5841	Т	_				60404558301	
WRA10350	9	REC19751215	4	0					
WSA10350	230	0.979 0.5841	1	_				60404559301	
**	250	0.373 0.3841		0					
**									
** lako	Cypress	Conings							
**	cypi ess	2hi.Til82							
**									
WRA10340	10500	MUN10700720		_					
WSLKCYPS	72800	MUN19700720	1	2	0.600			60404560301	4560 CYPRESS
**	72000								
WRA10340	1000	MUN10660134							
WSLKCYPS	72800	MUN19660131	1					60404560302	4560 CYPRESS
**	72000								
WRA10340	210	TDD10700700	_						
WSLKCYPS	72800	IRR19700720	1					60404560303	4560 CYPRESS
**	72800								
WRA10340	2500	TND10700700	_	_					
WSLKCYPS	3590 72800	IND19700720	1	2	0.700	A10020		60404560304	4560 CYPRESS
**	12000								
WRA10340	0	REC19660131	4						
**************************************	Ð	VECTA000131	1					60404560305	4560 CYPRESS

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cyp\_PermittedDischarges\_wPit129Div-FYL0

WSLKCYPS  **  **	72800		~ <b>,</b> P_	_,	i Ceas	senai ges <u>-</u>		, , , , 23		
WRA10300 WRA10290 **	11.61 24.0	IRR19630831 IRR19630801	1 1					60404561001 60404562002		
** Lake N ** **	Monticello									
WRA10240 WSLKMONT **	15300 40100	IND19700406	1					60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1					60404563302	4563	
** ** **   ake	an candiin									
** Lake i	Bob Sandlin									
WRA10200 WSBOBSAN **	10000 213350	MUN19711220	1	2	0.600	A10020		60404564301	4564	ВОВ
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1					60404564302	4564	BOB
WRA10200 WSBOBSAN **	10900 213350	IND19711220	1	2	0.700			60404564303	4564	вов
WRA10200 WSBOBSAN		REC19711220	1					60404564305	4564	вов
WRA10200	ATER FROM B 1930 213350	OB SANDLIN - N MUN19711220	MUNI 1	AUTH 2		ON B10310	2M	1EMBERSFRMBOB	4590	BOB LOTPBOB
WRA10200 WSBOBSAN	10000 213350	OB SANDLIN - I	1				FE THAT THE	1TXU_MONTE	4590	BOB LOTPBOB
TT KEMAIN	ING AUTHORI	TAITON OF BOR	SANL	LTI	WAIEK K	TOHI. NO	IC INAL INT	.5 AUIN WAS DEE	MED IO NOI	HAVE ACCESS TO

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** BOB SAI	NDLIN ST	ORAGE, INFLOWS O	NLY.	_' ' '	III. C CEUD.	raciiai gea	_WP1(129D1V-FYLO		
WRA10200 **	19600	IND19780313	1				60404564304	4564	BOBROR
** ======	======	=======================================	====	===:	======	=======	=======================================		
WRA10120	1680	MUN19550822	1	2		A10020	60404565301	4565	
WSTANKSL	2700	0.4012 0.856		0			33.0.33352	1303	
WRA10120	550	IND19550822	1	2	0.700		60404565302	4565	
WSTANKSL	2700	0.4012 0.856		0				1303	
WRA10120	0	REC19550822	1				60404565303	4565	
WSTANKSL	2700	0.4012 0.856		0			10.0.000000	1303	
WRA10090	21.44	IRR19591231	1				60404566301		
WSA10090	0.23	0.979 0.5841		0					
WRA10100	6	IRR19561231	1				60404567301		
WSA10100	5	0.979 0.5841		0					
WRA10050	7.5	IRR19631231	1				60404568301		
WSA10050	35	0.979 0.5841		0					
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569	
WSNEWCTY	1176	0.4012 0.856		0				.505	
WRA10070	0	REC19380317	1				60404569302	4569	
WSNEWCTY	1176	0.4012 0.856		0				1505	
WRA10060	144	MUN19750120	1	2	0.600	A10020	60404570301	4570	
WSOLDCTY	100	0.979 0.5841		0			22727020	.570	
WRA10060	0	REC19750120	1				60404570302	4570	
WSOLDCTY	100	0.979 0.5841		0				.5,0	
WRA10040	4	IRR19631231	1				60404571301		
WSA10040	12	0.979 0.5841		0					
WRA10030	4.4	IRR19631231	1				60404572301		
WSA10030	10	0.979 0.5841		0					
WRE10020	25.3	IND19850604	1				10404573301		
WSE10020	42	0.979 0.5841		0					
WRA10010	11	IRR19551231	1				60404573001		
WRB10320	0	IRR19511231	1				60404574001	4574	
WSOFF320	5.0	0.979 0.5841		0					
S0	5.43	1.40							
WRB10320	1.4	IRR19511231	1				60404574301	4574	
WSB10320	0.5	0.979 0.5841		0					
WSOFF320	5.0	0.979 0.5841		0					
OR	5.0								

cyp\_PermittedDischarges\_wPit129Div-FYL0

SO	5.43	1.40	*) F.		•	
WRB10290	9.49	REC19730430	1	•	60404575301	
WSB10290	80	0.979 0.5841	_	0	00404373301	
**	80	0.373 0.3641		•		
**						
**						
	D = = = :-:	·				
	Reservo				60404576704	4576
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587					
**						
**						
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587					
**						
**						
**						
WRB10230	124	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.5841		0		
WRB10220	6	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.5841		0		
WRB10210	75	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.5841		0		
WRB10200	2	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.5841		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.5841		0		
**						
**						
** Cypres	s Crk d	iversion point, (	CP B1	.0150 which is on Cypress Crk,	downstream of E	Ellison Reservoir,
** is use	ed to su	pplement water su	upply	to Ellison Crk Reservoir usi	ng the SO Record	d.
** Elliso	on Creek	Reservoir				
**						
WRB10170	2000	MUN19720508	1		60404582001	4582 ELLISON
WSELLISN	24700					
**						
WRB10170	21000	IND19421130	1		60404582002	4582 ELLISON
WSELLISN	24700					
		ress Creek at pr	iorit	:y		

WRB10170 WSELLISN SO **	24700	1 26000	.9421130 B10150	cyp_F 1	ermittedDischarges_wPit129Div-FYLO 60404582004	4582	ELLISON
** Miscel **	laneous	impound	ments on	Barne	s Cr etc.		
WR458232 WSBARNES WR458232	0 24000 0	0.4012	9720508 0.856 9720508	ı	60404582303 4582BU	4582 4582	barnes barnes
WSBARNES SO **	24000		458237	BACKU			
** WRB10120 WSB10120	38.3 4.79	IRR1 0.979	9620731 0.5841	1	60404583301		
WRB10110 WSB10110	14.2 60	IRR1 0.979	9480930 0.5841	1	60404584301		
WRB10100 WSB10100 WRB10090	0.56 50 1	0.979	9550331 0.5841 9641231	1 (	60404585301 60404586301		
WSB10090 WRB10080 WSSIMPSN	12 150 2500		0.5841 9561231	1	604045873 <b>01</b>		
**  **	2300	0.4012	0.856	(			
	Reserve	oir (aka	Johnson	Pocon	rain)		
WRB10070 WSJOHNSN **	6668 10100		9600504	1	60404588301	4588	
WRB10070 WSJOHNSN **	0 10100	REC1	9600504	1	60404588302	4588	
** WRB10050 WSB10050 **	0 240	REC19	9751208 0.5841	1	60404589301		

\*\*

\*\*

## cyp\_PermittedDischarges\_wPit129Div-FYL0

** Lake O'the Pines							9					
		======================================										
		MAND FOR PORTION										
WRB10040	40070	MUN19570916	1	WATER	Nominated	10 52	17111211	, , ,	505	1MUN	4590	FYLOTP
WSLKOPNS	251000	-1	_									
WRB10040	151800	IND19570916	1							2IND	4590	FYLOTP
WSLKOPNS	251000											
** =====		==========	===:	=====	========	=====		===	====	=======	:	
**												
WRF10250	8	IRR19670430	1				1		6040	4591301		
WSF10250	6	0.979 0.5841		0								
WRF10230	96.88	IRR19690930	1				1		6040	4592001		
WRF10240	85	IRR19620531	1				1		6040	4593301		
WSF10240	100	0.979 0.5841		0								
WRF10220	1080	IRR19550103	1				1			4594002		
WRF10210	2000	MUN19630218	1				1			4595001		
WRF10190	80.21	IRR19570319	1				1			4596001		
WRC10040	25	IRR19760621	1						6040	4597301		
WSC10040	35	0.979 0.5841		0								
WRC10030	10	IND19700126	1						6040	4598301		
WSC10030	5	0.979 0.5841		0								
WRC10010	47	IRR19530731	1						6046	4599001		
WSC10010	7	0.979 0.5841		0								
SO	40.42	47										
WRF10170	62.5	IRR19660630	1				1			34600001		
WRD10090	0	REC19461121	1						6046	94601301		
WSD10090	135	0.979 0.5841	_	0					CO 40	14602201		
WRD10080	0	REC19600211	1						6040	34602301		
WSD10080	1414	0.4012 0.856	_	0					CO 40	24602201		
WRD10070	0	REC19730312	1						6046	94603301		
WSELWOOD	116	0.979 0.5841	1	0					6040	94604301		
WRD10060	7.03 28	IRR19670630 0.979 0.5841	1	0					0046	04004301		
WSD10060 WRD10030	28	REC19741209	1						6040	94605301	4605	
WSD10030	36	0.979 0.5841	T	0					0046	)+06736T	4003	
WRD10030	9	REC19741209	1						6040	94605302	4605	
WSD10040	114	0.979 0.5841	1	0					00-76	J-005302	400J	
WRD10040	0	REC19740812	1						6040	94606301		
***(D10020	0	NECIS/ 40012	_						30 <del>4</del> 0	, 1000001		

cyp\_PermittedDischarges\_wPit129Div-FYLO WSD10020 294 0.979 0.5841 WRD10010 0 REC19740812 1 60404607301 WSD10010 330 0.979 0.5841 0 WRE10070 18.2 IRR19520630 1 60404608301 WSE10070 20 0.979 0.5841 0 WRE10060 15 IND19680318 60404609001 4609 WSE10060 4.8 0.979 0.5841 0 WRE10050 225 IND19821206 1 60404609301 4609 WSE10050 228.2 0.979 0.5841 0 WRE10040 122 IRR19551010 1 60404610001 WRE10010 955 IND19430701 1 60404611301 **WSHOLMES** 0.4012 744 0.856 0 WRF10160 46.58 IRR19550323 1 1 60404612001 WRF10140 165.21 MIN19690224 1 1 60404613001 WRF10130 7558 MUN19470418 1 1 60404614001 4614 WRF10130 8442 MUN19561127 1 1 60404614002 4614 WRF10120 10 IRR19751215 1 1 60404615301 WSF10120 54 0.979 0.5841 0 WRF10110 0 REC19690811 1 1 60404616301 **WSSHADOW** 1325 0.4012 0.856 0 WRF10030 REC19720207 0 1 1 60404617301 WSLINDEN 112 0.979 0.5841 0 WRF10020 42 IRR19790221 1 1 60404618301 4618 WSF10020 42 0.979 0.5841 0 WRF10020 51 IRR19810413 1 1 60404618302 4618 WSF10020 42 0.979 0.5841 0 WR 10050 0 REC19760524 1 60404619301 WS 10050 184 0.979 0.5841 0 WR 10040 0 REC19781016 1 60404620301 WS 10040 0.4012 600 0.856 0 WR 10020 0 REC19470922 1 60404621301 WS 10020 160 0.979 0.5841 0 WRD10120 0 REC19860404 1 10405054301 WSD10120 0.979 0.5841 550 0 WRC10050 0 REC19860729 10405080301 WSC10050 300 0.979 0.5841 0 WRF10100 REC19861125 0 1 1 10405112301 WSF10100 0.979 0.5841 277 0

				cvp P	ermittedD:	ischarges	wPit129	Div-FYLO	)			
WRA10280	0	IND1988	30121	1					5167301			
WSPONDH1	477	0.979 0.		_ 6	)							
WRB10300	0	IRR1989		1				1040	5212301			
WSB10300	0.09	0.979 0.		6	)							
WRB10260	0	IRR1989		1				1040	5251301			
WSB10260	86	0.979 0.		6	)							
IFD10110	1025.6	CONST1989		1 1			IF5272					
**												
WRD10110	6180	MUN1989	91214	1				1040	5272301	5272		
WSLKGILM	12720											
WRD10110	0	REC1989	91214	1				1040	5272302	5272		
WSLKGILM	12720											
WRF10090	0	REC1996	<b>30710</b>	1			1	1040	5302301			
WSF10090	80	0.979 0.	.5841	6	•							
WRA10260	0	IND1995	50522	1				1040	5529301			
WSPONDH4	173.7	0.979 0.	.5841	(	9							
WRE10080	0	REC1995	50801	1				1040	5537301			
WSE10080	296	0.979 0.	.5841	(	9							
WRE10090	34	IRR1998		1				1040	5608301	5608		
WSE10090	55.6	0.979 0.			)							
WRE10090	0	REC1998		1				1040	5608302	5608		
WSE10090	55.6	0.979 0.			9							
	-	ght is to ${}^{4}$		exas' p	portion of	Caddo L	ake up t					
WRF10005	0	OTHER9999	99999	1				6040	9999301	9999		
WS CADDO	125000											
		ght is for			diversior	n from Ca	ddo Lake					
WRF10005	40000	MUN9999	99999	1				6040	9999302	9999		
WS CADDO	165000											
**	_											
	rage-Area	Tables										
**	•	4000	2222	550	0500	4 4000	22500	20000	40000	FF000	70000	07000
SVLKMONT	. 0	1000	2000	5500		14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700		1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500		57500	87500	155000	190000	270000	350000	
SABOBSAN **	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
NZNHOCAZ	0	150 50	110	170		340	445	550	650	790	900	950
NCNIDOCAC	Ø	שכ	TIA	Τ/(	243	340	443	550	030	130	300	950

cyp_PermittedDischarges_wPit129Div-FYLO												
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000	2200	
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250			
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000	18500		
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500				
SV WELSH	0	500	2600	4000	8200	12000	17400		64250	36000		
SA WELSH	0	130	370	470	710	890		20000	30100	36000	40000	44600
SVLKGILM	0	670	2470	4980			1130	1230	1600	1740	1865	1930
SALKGILM	0	285			8230	12270	17270	23420	30860			
**	U	200	430	570	720	895	1100	1350	1630			
** Carollo ad	4 24	ditions1	CVCA		D:1 400							
carotto au					PIT 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129	0	12	16	20	23	25	33	39	50	62	72	98
**							- <del>-</del>			<u> </u>	, _	20

<sup>\*\*</sup> Drought Indices

DI 1 1 CADDO

IS 4 0 125000 125001 865000 IP 100 100 100 100

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\*\* Streamflow And Evaporation Records

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ED

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder. \*\*  $\ast$ 

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cyp\_PermittedDischarges\_wPit129-FYLOTP

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cyp\_PermittedDischarges\_wPit129-FYLOTP Cypress Water Availability Modeling T2 Full Authorized Diversions, No Return Flows Updated 6/18/2015 KA T3 \*\* \*\* \*\* General Comments \*\* JD 51 1948 1 -1 -1 0 5 0 0 3 0 0 0 JO RO -1 \*\* \*\*FY 10000 1000 100 10 104000PT129 FΥ 1.0 241800 100 1000 **FYLOTP** \*\*FY 1.0 48500 1000 100 10 BOB \*\*FY 10000 1 1000 100 10 10405850307 \*\*FY 10000 1000 100 10 10405850301 \*\*FY 10000 1 1000 100 10 10405850306 \*\*FY 1 10000 1000 100 10 10405850304 \*\*FY 1 10000 1000 100 10 10405850303 \*\*FY 1 10000 1000 100 10 10405850305 \*\*FY 1 10000 1000 100 10 10405850302 \*\* \*\* Monthly Water Use Factors \*\* 5813 UC 60 60 60 60 76 76 UC 76 76 76 60 60 60 UC MUN 0.077 0.070 0.075 0.076 0.084 0.091 UC 0.100 0.100 0.089 0.085 0.076 0.078 UC 0.068 IND 0.063 0.070 0.080 0.081 0.077

UC

UC

UC

UC

IRR

MIN

0.109

0.000

0.200

0.079

0.109

0.001

0.241

0.080

0.104

0.004

0.142

0.084

0.084

0.013

0.097

0.080

0.072

0.051

0.053

0.081

0.076

0.162

0.038

0.077

```
cyp PermittedDischarges wPit129-FYLOTP
UC
           0.080
                   0.084
                           0.088
                                    0.090
                                            0.090
                                                    0.087
UC
                   0.083
     REC
           0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
                                            0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC CONST
                                                      1.0
             2.0
                     2.0
                             2.0
                                      2.0
                                              2.0
UC
             1.0
                     1.0
                             1.0
                                      1.0
                                              1.0
                                                      1.0
UC MONTH
              31
                   28.25
                                               31
                               31
                                       30
                                                       30
UC
              31
                      31
                               30
                                       31
                                               30
                                                       31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                     NONE
CPPPDISC TCUSBC
                                        7
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                        7
                                                      513
**
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                        7
                                                     NONE
CP585037 A10120
                                        7
                                                      513
                                        7
CP585009 A10120
                                                     NONE
                                        7
CP585010 A10120
                                                     NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                          7
                                                        513
**CP585007 A10000
                                          7
                                                       NONE
                                          7
**CP585006 A10000
                                                       NONE
CP585031 PPDISC
                                        7
                                                      513
CP585007 PPDISC
                                        7
                                                     NONE
CP585006 PPDISC
                                        7
                                                     NONE
CP585036 585034
                                        7
                                                      513
CP585034 585033
                                        7
                                                      513
CP585033 585032
                                        7
                                                      513
CP585035 585032
                                        7
                                                      513
CP585032 585005
                                        7
                                                      513
```

cyp\_PermittedDischarges\_wPit129-FYLOTP \*\* Carollo modify existing CPs to include new tracking CP for Pit 129 analyses \*\*CP585005 A10000 NONE \*\*CP585004 A10000 7 NONE \*\*CP585003 A10000 7 NONE \*\*CP585002 A10000 7 NONE \*\*CP585001 A10000 7 NONE CP585005 PPDISC 7 NONE CP585004 TCUSBC NONE CP585003 TCUSBC 7 NONE CP585002 TCUSBC 7 NONE CP585001 TCUSBC NONE CP585011 A10070 7 NONE CP585012 A10010 NONE CP585013 A10010 NONE \*\* add control points for A5814 CP581431 581432 7 QAD413 CP581432 A10260 7 QAD413 CP581433 A10240 7 QAD413 \*\* add control points for A5813 CP581301 D10000 7 NONE CP581302 D10000 NONE CP581303 D10000 7 NONE \*\* additional CPs for C4582, for Barnes Creek watershed CP458232 B10170 B10170 CP458237 B10170 7 B10170 \*\* CPA10370 A10340 7 QAD413 CPA10350 A10340 7 QAD413 CPA10340 A10300 7 \*\*CPA10300 A10000 7 NONE CPA10300 A10200 7 NONE \*\* CPA10290 A10200

7

7

7

CPA10280 A10240

CPA10260 A10240

NONE

QAD413

QAD413

```
cyp PermittedDischarges wPit129-FYLOTP
**CPA10240 A10000
                                        7
CPA10240 A10200
                                      7
                                       7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                         7
                                                       513
                                                       513
**CPA10100 A10000
                                         7
                                                       513
**CPA10090 A10000
                                         7
                                       7
CPA10120 TCUSBC
                                                     513
CPA10100 TCUSBC
                                       7
                                                     513
CPA10090 TCUSBC
                                                     513
                                       7
                                       7
                                                     513
CPA10070 A10010
                                       7
                                                     513
CPA10060 A10010
CPA10050 A10010
                                       7
                                                     513
CPA10040 A10010
                                       7
                                                     513
                                                 QAD413
                                       7
CPA10030 A10010
                                       7
CPA10020
         A10010
                                                    NONE
CPA10010 A10000
                                       7
                                                     513
                                                    NONE
CPA10000 B10150
                                       0
                                       7
                                                 QAD413
CPB10320 B10310
CPB10310 B10150
                                       7
                                                    NONE
CPB10300 B10150
                                       7
                                                 QAD413
                                       7
CPB10290 B10150
                                                  QAD413
                                       7
CPB10270 B10150
                                                 QAD413
CPB10260 B10150
                                       7
                                       7
                                                 OAD413
CPB10250 B10150
CPB10230 B10170
                                       7
                                                     513
                                                     513
CPB10220 B10230
                                       7
                                       7
                                                     513
CPB10210 B10150
CPB10200 B10150
                                       7
                                                     513
CPB10180 B10170
                                       7
                                                     513
CPB10170 B10150
                                       7
CPB10150 B10040
                                       7
                                                    NONE
                                                     513
CPB10120 B10040
                                       7
                                                     513
CPB10110 B10040
                                       7
```

7

CPB10100 B10040

513

		cvn Pe	rmittedDischarges_wPit129-FYLOTP
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	313
CPB10050	B10040	7	QAD413
**CPB1004	0 B10000	. 7	NONE
CPB10040	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
			-

```
cyp PermittedDischarges wPit129-FYLOTP
                                                   QAD412
CPE10050
          E10040
                                        7
                                                     NONE
CPE10040
          E10000
                                        7
                                        7
                                                      513
CPE10020
          E10010
CPE10010
                                        7
                                                   QAD412
          E10000
CPE10000 F10160
                                                     NONE
                                        0
                                                   QAD512
CPF10250 F10230
                                        7
                                        7
                                                      513
CPF10240 F10230
                                                     NONE
CPF10230 F10220
                                        7
CPF10220 F10210
                                        7
                                                     NONE
                                        7
                                                     NONE
CPF10210 F10190
CPF10190 F10130
                                        7
                                                     NONE
                                                     NONE
CPF10180 F10170
                                        7
                                                     NONE
CPF10170 F10130
                                        7
CPF10160 F10130
                                        7
                                                     NONE
CPF10140 F10130
                                        7
                                                     NONE
                                        7
                                                     NONE
CPF10130
          F10080
                                        7
                                                      513
CPF10120 F10080
                                                      513
CPF10110 F10080
                                        7
                                                   QAD512
                                        7
CPF10100 F10080
                                        7
                                                   QAD413
CPF10090
          F10080
CPF10080
                                        7
                                                       513
          F10005
                                        7
                                                   QAD412
CPF10030
          F10020
CPF10020
          F10005
                                        7
                                                       513
                                        7
CPF10005
          F10000
CPF10000
                                        0
                                                     NONE
             OUT
                                        7
                                                   QAD413
CP 10050
           10040
CP 10040
                                        7
                                                   QAD413
           10010
CP 10020
                                        7
                                                   QAD413
           10010
                                        7
                                                     NONE
CP 10010
             OUT
CPQAD412
             OUT
                                        0
CPQAD413
                                        0
             OUT
CPQAD512
             OUT
                                        0
CP 513
                                        0
             OUT
CPSABINE
             OUT
                                        2
                                             NONE
                                                     NONE
             OUT
                                        2
                                             NONE
                                                     NONE
CPSULPHR
```

```
cyp_PermittedDischarges_wPit129-FYLOTP
CPA240DM
           OUT
                                  2
                                       NONE
                                              NONE
CPB270DM
           OUT
                                  2
                                       NONE
                                              NONE
CPB70DUM
           OUT
                                  2
                                       NONE
                                              NONE
CPB20MUN
           OUT
                                  2
                                       NONE
                                              NONE
CPAVNGER
           OUT
                                  2
                                       NONE
                                              NONE
CPDNGRFD
           OUT
                                  2
                                       NONE
                                              NONE
CPHGHSPR
           OUT
                                  2
                                       NONE
                                              NONE
CPJEFFSN
           OUT
                                  2
                                       NONE
                                              NONE
CPLVGSTN
           OUT
                                       NONE
                                              NONE
CPORECTY
           OUT
                                       NONE
                                              NONE
**
CPA~ZERO
           OUT
                                       ZERO
                                              ZERO
                                                       -3
                                                              0
**
**
   Constant Inflow Records
**
CIB10310
         50.42
                47.26
                        53.28
                               49.72
                                      44.71
                                             41.43
CI
         40.91
                 39.96
                       36.83
                               38.05 41.43
                                             50.42
** Carollo add inflow representing a 3.5 MGD return flow for Pilgrims Pride WWTP
CIPPDISC
           271
                  255
                         278
                                314
                                       318
                                               306
CI
           427
                  427
                         408
                                329
                                       286
                                               302
**
**
   Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100
           482
                  IND20181231 1 1
                                       1.0
                                                                         PT129
                                                            104000PT129
WSPIT129
          5355
**
**TXU app 5850, 6/24/05, kb
WR585001
            50
                  IND20041231
                              1
                                                            10405850001
                                                                          5850
WR585002
                  IND20041231
             0
                              1
                                                            10405850002
                                                                          5850
SO
                              BACKUP
```

cyp PermittedDischarges\_wPit129-FYLOTP

			Cyp_rei	mitcleubischaf ges_writizg-1 1tofr	
WR585003	0	IND20041231	1	10405850003	5850
SO ·			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
S0			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
S0			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP		
WR585007	0	IND20041231	1	10405850007	5850
S0			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
SO			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
S0			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
S0			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
S0			BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
S0			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
S0			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302	5850

# cyp\_PermittedDischarges\_wPit129-FYLOTP

WSR58502	245.1	0.979 0.5841	J r .		LIZJ I ILOIF	
**						
** APPLI	CATION 58	314				
WR581431	•	OTHER20031028	1		10405814301	
WS HR9		0.979 0.5841			10403014301	
WR581432		OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841			10403014302	
WR581433	0	OTHER20031028	1		10405814303	
WS HR10		0.4012 0.856			10-0301-303	
** APPLI	CATION 58	313				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813001	
S0			BACKUP		10403013003	
WR581302	0	581320031001	1		10405813002	
S0			BACKUP		10-03013002	
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK		0.979 0.5841	0		10101334301	7224
WRD10160		REC19830222	1		10404334302	4334
WSBASSLK		0.979 0.5841	0		10 10 133 1302	7337
WRD10140		REC19830222	1		10404334303	4334
WSDOGWOD		0.979 0.5841	0		20 10 133 1303	7237
WRD10180		REC19830222	1		10404334304	4334
WSLKAUTM		0.979 0.5841	0			7557
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH		0.979 0.5841	0			1334
WRD10150		REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			.55.
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0		20 /0 /33 /30/	7557
WRF10080	2343	MUN19830418	1	1	10404349001	4349
WSF10080	8.29	0.979 0.5841	0			13 13
S0	3293.45	2343				
WRF10080	1281	IND19830418	1	1	10404349002	4349
WSF10080	8.29	0.979 0.5841	0	_		
S0	3293.45	1281				

				cyp_	_Permitt	edDischar	rges_wPit12	29-FYLOTP		
WRB10250	0	REC19841127	1	•	<del>-</del>		_	10404522301		
WSB10250	380	0.979 0.5841		0						
WRF10180	202.5	IRR19841218	1				1	10404525101		
WRA10370	0	REC19750106	1					60404558301		
WSA10370	350	0.979 0.5841		0						
WRA10350	0	REC19751215	1					60404559301		
WSA10350	230	0.979 0.5841		0						
**										
**										
** Lake	Cypress	Springs								
**	7.									
**										
WRA10340	10500	MUN19700720	1	2	0.600			60404560301	4560 CYPRES	S
WSLKCYPS	72800									
**										
WRA10340	1000	MUN19660131	1					60404560302	4560 CYPRES	S
WSLKCYPS	72800									
**										
WRA10340	210	IRR19700720	1					60404560303	4560 CYPRES	S
WSLKCYPS	72800									
**										
WRA10340	3590	IND19700720	1	2	0.700	A10020		60404560304	4560 CYPRES	S
WSLKCYPS	72800									
**										
WRA10340	0	REC19660131	1					60404560305	4560 CYPRES	S
WSLKCYPS	72800									
**										
**										
WRA10300	11.61	IRR19630831	1					60404561001		
WRA10290	24.0	IRR19630801	1					60404562002		
**										
**										
** Lake	Monticel	.lo								

\*\*

WRA10240 WSLKMONT	15300 40100	IND19700406	1	cyp_	_Permitt	edDischargo	ges_wPit129-FYLOTP 60404563301 4563
WRA10240 WSLKMONT **	1000 40100	IND19730604	1				60404563302 4563
**							
** Lake **	Bob Sandl	in					
WRA10200 WSBOBSAN **	10000 213350	MUN19711220	1	2	0.600	A10020	60404564301 4564 BOB
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1				60404564302 4564 BOB
WRA10200 WSBOBSAN **		IND19711220	1	2	0.700		60404564303 4564 BOB
WRA10200 WSBOBSAN		REC19711220	1				60404564305 4564 BOB
** LOTP W WRA10200		BOB SANDLIN - 1					
WSBOBSAN	1930 213350	MUN19711220	1	2	0.600	B10310	2MEMBERSFRMBOB 4590 BOB LOTPBOB
** LOTP W	ATER FROM	BOB SANDLIN - :	IND .	AUTHO	DRIZATIO	N	
WRA10200 WSBOBSAN	10000	IND19711220	1				1TXU_MONTE 4590 BOB LOTPBOB
** REMAIN	ING AUTHO	RIZATION OF BOB	SAN	DLIN	WATER R	IGHT. NOTE	THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO
A BOR 24	MOLTH 210	RAGE, INFLOWS O	NLY.				THE THE WAS BEELLED TO NOT HAVE ACCESS TO
WRA10200 **	19600	IND19780313	1				60404564304 4564 BOBROR
** =====	=======	=======================================	====	=====	======	========	:=====================================
WRA10120 WSTANKSL	1680	MUN19550822	1	2 Ø		A10020	60404565301 4565
WRA10120	550	IND19550822	1	2	0.700		60404565302 4565

. .---

				сур_	Permitt	edDischarg	es_wPit129-FYLOTP	
WSTANKSL	2700	0.4012 0.856		0				
WRA10120	0	REC19550822	1				60404565303	4565
WSTANKSL	2700	0.4012 0.856		0				
WRA10090	21.44	IRR19591231	1				60404566301	
WSA10090	0.23	0.979 0.5841		0				
WRA10100	6	IRR19561231	1				60404567301	
WSA10100	5	0.979 0.5841		0				
WRA10050	7.5	IRR19631231	1				60404568301	
WSA10050	35	0.979 0.5841		0				
WRA10070	400	MUN19380317	1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10070	0	REC19380317	1				60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0				
WRA10060	144	MUN19750120	1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10060	0	REC19750120	1				60404570302	4570
WSOLDCTY	100	0.979 0.5841		0				
WRA10040	4	IRR19631231	1				60404571301	
WSA10040	12	0.979 0.5841		0				
WRA10030	4.4	IRR19631231	1				60404572301	
WSA10030	10	0.979 0.5841		0				
WRE10020	25.3	IND19850604	1				10404573301	
WSE10020	42	0.979 0.5841		0				
WRA10010	11	IRR19551231	1				60404573001	
WRB10320	0	IRR19511231	1				60404574001	4574
WSOFF320	5.0	0.979 0.5841		0				
S0	5.43	1.40						
WRB10320	1.4	IRR19511231	1				60404574301	4574
WSB10320	0.5	0.979 0.5841		0				
WSOFF320	5.0	0.979 0.5841		0				
OR	5.0							
S0	5.43	1.40						
WRB10290	0	REC19730430	1				60404575301	
WSB10290	80	0.979 0.5841		0				

\*\*

### cyp\_PermittedDischarges\_wPit129-FYLOTP

```
**
**
    Welsh Reservoir
WRB10270
           11000
                     IND19730910
                                  1
                                                                     60404576301
                                                                                    4576
          23587
WS WELSH
**
**
WRB10270
               0
                     REC19730910
                                                                     60404576302
                                                                                    4576
WS WELSH
           23587
**
**
**
WRB10230
             124
                     IRR19500930
                                  1
                                                                     60404577301
WSB10230
              96
                   0.979 0.5841
                                       0
WRB10220
                    IRR19521231
               6
                                                                     60404578301
WSB10220
                  0.979 0.5841
               1
                                       0
WRB10210
              75
                     IRR19531231
                                                                     60404579301
WSB10210
                   0.979 0.5841
              64
                                       0
WRB10200
               2
                     IRR19581231
                                   1
                                                                     60404580301
WSB10200
                  0.979 0.5841
             0.5
                                       0
WRB10180
               0
                     REC19690922
                                                                     60404581301
WSB10180
                  0.979 0.5841
             510
                                       0
**
**
  Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
** Ellison Creek Reservoir
**
WRB10170
            2000
                     MUN19720508
                                   1
                                                                     60404582001
                                                                                    4582 ELLISON
WSELLISN
           24700
**
WRB10170
           21000
                     IND19421130
                                                                     60404582002
                                                                                    4582 ELLISON
WSELLISN
           24700
** Fill from Cypress Creek at priority
WRB10170
                        19421130 1
                                                                     60404582004
                                                                                    4582 ELLISON
```

## cyp\_PermittedDischarges\_wPit129-FYLOTP

				cyp_rei iii	LCCCUDISCII	al ges_writtz	J I I LOTT		
WSELLISN	24700								
S0		26000 B10150							
**									
** Miscel	laneous	impoundments on	Barr	es Cr etc	<b>.</b>				
**		•							
WR458232	. 0	OTHER19720508					60404582303	4582	barnes
WSBARNES	24000	0.4012 0.856		0					
WR458232	0	OTHER19720508					4582BU	4582	barnes
WSBARNES	24000								
S0		458237	BACK	(UP					
**									
**									
WRB10120	38.3	IRR19620731	1				60404583301		
WSB10120	4.79	0.979 0.5841		0					
WRB10110	14.2	IRR19480930	1				60404584301		
WSB10110	60	0.979 0.5841		0					
WRB10100	0.56	IRR19550331	1				60404585301		
WSB10100	50	0.979 0.5841		0					
WRB10090	1	IRR19641231	1				60404586301		
WSB10090	12	0.979 0.5841		0					
WRB10080	150	IRR19561231	1				60404587301		
WSSIMPSN	2500	0.4012 0.856		0					
**									
**									
**									
** Wilkes	Reserv	oir (aka Johnson	Rese	ervoir)					
WRB10070	6668	IND19600504	1				60404588301	4588	
NSNHOCZW	10100								
**									
WRB10070	0	REC19600504	1				60404588302	4588	
NSJOHNSN	10100								
**									
**									
WRB10050	0	REC19751208	1				60404589301		
WSB10050	240	0.979 0.5841		0					

#### cyp\_PermittedDischarges wPit129-FYLOTP

**	Cyp_PermittedDischarges_wPit129-FYLOTP										
**											
** Lake	O'the Pi	ines									
** =====	======	===============	===:	=====	========	=====	=======	====:	========	=	
** REDUCE	LOTP DE	MAND FOR PORTION	OF	WATER	AUTHORIZED	то ве	TAKEN AT	ВОВ	SANDLIN	_	
MKR10040	40070	MUN19570916	1						1MUN	4590	FYLOTP
WSLKOPNS	251000	-1									
WRB10040	151800	IND19570916	1						2IND	4590	FYLOTP
WSLKOPNS ** =====	251000 										
**		=======================================	===:	=====:	========:	=====	=======	====:	=======	=	
WRF10250	8	IRR19670430	1				4				
WSF10250	6	0.979 0.5841	1	0			1	6040	04591301		
WRF10230	96.88	IRR19690930	1	Ū			1	604	34503001		
WRF10240	85	IRR19620531	1				1		04592001 04593301		
WSF10240	100	0.979 0.5841		0			-	0040	04333301		
WRF10220	1080	IRR19550103	1	_			1	6040	04594002		
WRF10210	2000	MUN19630218	1				1		94595001		
WRF10190	80.21	IRR19570319	1				1		04596001		
WRC10040	25	IRR19760621	1						04597301		
WSC10040	35	0.979 0.5841		0							
WRC10030	10	IND19700126	1					6046	94598301		
WSC10030	5	0.979 0.5841		0							
WRC10010	47	IRR19530731	1					6046	04599001		
WSC10010	7	0.979 0.5841		0							
S0	40.42	47									
WRF10170	62.5	IRR19660630	1				1	6046	94600001		
WRD10090 WSD10090	0 135	REC19461121	1	_				6046	94601301		
WRD10090	135	0.979 0.5841	_	0							
WSD10080	0 1414	REC19600211	1	_				6046	94602301		
WRD10070		0.4012 0.856		0							
WSELWOOD	0 116	REC19730312 0.979 0.5841	1	•				6046	94603301		
WRD10060	7.03	0.979 0.5841 IRR19670630	1	0							
WSD10060	28	0.979 0.5841	1	0				6046	94604301		
	20	U.J/3 U.J041		Ø							

				сур_	PermittedDischarges_wPit	129-FYLOTP	
WRD10030	0	REC19741209	1		- <del>-</del>	60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			

				cyp_PermittedDischarges_wPit129-FYLOTP
WR 10020		REC19470922	1	60404621301
WS 10020		0.979 0.5841		0
WRD10120	-	REC19860404	1	10405054301
WSD10120		0.979 0.5841		0
WRC10050		REC19860729	1	10405080301
WSC10050		0.979 0.5841		0
WRF10100		REC19861125	1	1 10405112301
WSF10100		0.979 0.5841		0
WRA10280		IND19880121	1	10405167301
WSPONDH1		0.979 0.5841		0
WRB10300	0	IRR19890112	1	10405212301
WSB10300	0.09	0.979 0.5841		0
WRB10260	0	IRR19890810	1	10405251301
WSB10260	86	0.979 0.5841		0
IFD10110	1025.6		1	1 IF5272
**				_ 11 3272
WRD10110	6180	MUN19891214	1	10405272301 5272
WSLKGILM	12720			10405272301 5272
WRD10110	0	REC19891214	1	10405272302 5272
WSLKGILM	12720		_	10405272302 5272
WRF10090	0	REC19900710	1	1 10405302301
WSF10090	80	0.979 0.5841	_	0
WRA10260	0	IND19950522	1	10405529301
WSPONDH4	173.7	0.979 0.5841	_	0
WRE10080	0	REC19950801	1	10405537301
WSE10080	296	0.979 0.5841	_	0
WRE10090			1	
WSE10090	55.6		_	10405608301 5608 0
WRE10090		REC19980320	1	
WSE10090	55.6	0.979 0.5841	_	10405608302 5608 0
** This		tht is to fill Te	'xas	' portion of Caddo Lake up to elevation 168.5 feet
WRF10005	9 ີ	OTHER99999999	1	
WS CADDO			-	6040999301 9999
		tht is for Louisi	ana'	's diversion from Caddo Lake for each year
WRF10005	40000	MUN99999999	1	
			_	6040999302 9999

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#### cyp\_PermittedDischarges\_wPit129-FYLOTP

WS CADDO **	165000											
** Stor **	age-Area	Tables										
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
NZNHOCVZ	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
NZNHOCAZ	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	. 0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	. 0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**												
** Caroll	o add ad.	ditional	SVSA cu	rve for	Pit 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129	0	12	16	20	23	25	33	39	50	62	72	98
**												

<sup>\*\*</sup> Drought Indices

DI 1 1 CADDO

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

<sup>\*\*</sup> 

<b>%</b>		
		eri Tarangan

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· <u>-</u>			

```
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100 A10000
                      0
WP585100 1.26875
FDTCUSBC A10000
                      0
WPTCUSBC 35.3043
FDPPDISC A10000
                      0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008 A10000
WP585008 5.0368
FD585037 A10000
                      0
WP585037 0.4791
FD585009 A10000
                      0
WP585009 1.1166
FD585010 A10000
                      0
WP585010 1.2373
FD585031 A10000
                      0
WP585031 0.4284
FD585007 A10000
                      0
WP585007 0.2604
FD585006 A10000
                      0
WP585006 2.8062
FD585036 A10000
                      0
WP585036 0.4570
FD585034 A10000
                      0
WP585034 0.5905
FD585033 A10000
                      0
WP585033 2.9988
FD585035 A10000
                      0
WP585035 0.6235
FD585032 A10000
                      0
WP585032 4.2301
FD585005 A10000
                      0
WP585005 5.8348
FD585004 A10000
                      0
```

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```
WP585004 0.1356
FD585003 A10000
                      0
WP585003 1.9687
FD585002 A10000
                      0
WP585002 0.1512
FD585001 A10000
                      0
WP585001 0.1708
FD585011 A10000
                      0
WP585011 2.2375
FD585012 A10000
                      0
WP585012 2.6298
FD585013 A10000
                      0
WP585013 1.0074
**
** Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431 A10000
                      0
WP581431
            .855
FD581432 A10000
                      0
WP581432
           .930
FD581433 A10000
                      0
WP581433
            .401
** ADD ADDITIONAL CPS FOR A5813
FD581301 D10000
                      0
         7.151
WP581301
**
FD581302 D10000
                      0
WP581302
         0.303
**
                      0
FD581303 D10000
WP581303
          2.545
**
** ADD ADDITIONAL CPS FOR BARNES CREEK WATERSHED
                      0 A10000
FD458232 B10000
WP458232 3.364
**
FD458237 B10000
                      0 A10000
WP458237
            .227
```

FDA10370	A10000	0	
FDA10350	A10000	0	
FDA10340	A10000	0	
FDA10300	A10000	0	
FDA10290	A10000	0	
FDA10280	A10000	0	
FDA10260	A10000	0	
FDA10240	A10000	0	
FDA10200	A10000	0	
FDA10120	A10000	0	
FDA10100	A10000	0	
FDA10090	A10000	0	
FDA10070	A10000	0	
FDA10060	A10000	0	
FDA10050	A10000	0	
FDA10040	A10000	0	
FDA10030	A10000	0	
FDA10020	A10000	0	
FDA10010	A10000	0	
FDB10320	B10000	0	A10000
FDB10310	B10000	0	A10000
FDB10300	B10000	0	A10000
FDB10290	B10000	0	A10000
FDB10270	B10000	0	A10000
FDB10260	B10000	0	A10000
FDB10250	B10000	0	A10000
FDB10230	B10000	0	A10000
FDB10220	B10000	0	A10000
FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000

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FDB10080	B10000	0	A10000			
FDB10070	B10000	0	A10000			
FDB10050	B10000	0	A10000			
FDB10040	B10000	1	A10000			
FDC10050	C10000	0				
FDC10040	C10000	0				
FDC10030	C10000	0				
FDC10010	C10000	0				
FDD10190	D10000	0				
FDD10180	D10000	0				
FDD10170	D10000	0				
FDD10160	D10000	0				
FDD10150	D10000	0				
FDD10140	D10000	0				
FDD10130	D10000	0				
FDD10120	D10000	0				
FDD10110	D10000	0				
FDD10090	D10000	0				
FDD10080	D10000	0				
FDD10070	D10000	0				
FDD10060	D10000	0				
FDD10050	D10000	0				
FDD10030	D10000	0				
FDD10040	D10000	0				
FDD10020	D10000	0				
FDD10010	D10000	0				
FDE10090	E10000	0	D10000			
FDE10080	E10000	0	D10000			
FDE10070	E10000	0	D10000			
FDE10060	E10000	1	D10000			
FDE10050	E10000	0	D10000			
FDE10040	E10000	1	D10000			
FDE10020	E10000	0	D10000			
FDE10010	E10000	0	D10000			
FDF10250	F10000	0	B10000	C10000	E10000	
FDF10240	F10000	0	B10000	C10000	E10000	
FDF10230	F10000	1	B10000	C10000	E10000	
FDF10220	F10000	1	B10000	C10000	E10000	

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FDF10210	F10000	1	B10000	C10000	E10000
FDF10190	F10000	1	B10000	C10000	E10000
FDF10180	F10000	1	C10000	B10000	E10000
FDF10170	F10000	1	C10000	B10000	E10000
FDF10160	F10000	1	E10000	B10000	C10000
FDF10140	F10000	0	B10000	C10000	E10000
FDF10130	F10000	3	B10000	C10000	E10000
FDF10120	F10000	0	B10000	C10000	E10000
FDF10110	F10000	0	B10000	C10000	E10000
FDF10100	F10000	0	B10000	C10000	E10000
FDF10090	F10000	0	B10000	C10000	E10000
FDF10080	F10000	3	B10000	C10000	E10000
FDF10030	F10000	0	B10000	C10000	E10000
FDF10020	F10000	0	B10000	C10000	E10000
FDF10005	F10000	3	B10000	C10000	E10000
FD 10050	F10000	0	B10000	C10000	E10000
FD 10040	F10000	0	B10000	C10000	E10000
FD 10020	F10000	0	B10000	C10000	E10000
FD 10010	F10000	0	B10000	C10000	E10000
**					
	rshed Par	ameters			
**					
WPA10370	6.8736	72.93	43.42		
WPA10350	0.705	32.78	44.21		
WPA10340		65.96	43.92		
WPA10300	165.78	68.53	43.83		
WPA10290	3.8945	68.95	45.12		
WPA10280	0.8391	69.57	45.12		
WPA10260	2.4997	62.95	45.24		
WPA10240	36.26	71.65	45.28		
WPA10200		70.22	44.26		
WPA10120	8.6031	69.44	46.42		
WPA10100	0.149	65.79	46.3		
WPA10090	0.8048	69.67	46.51		
WPA10070	3.6154	62.41	46.49		
WPA10060	0.4779	70.53	46.57		
WPA10050	0.0784	79.65	46.54		
WPA10040	0.1014	66.97	46.46		

WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79
WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99

WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	, , = 100	67.87	45.01
WPD10040		64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69
WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62

WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100
WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD4:	12 100	100	100
**WPQAD4	13 100	100	100
**WPQAD5	12 100	100	100
**WP 5	13 100	100	100
ED			

cyp03 pit129.EVA EVA10200 1948 0.129 0.151 0.019 0.073 0.032 0.442 0.244 0.375 0.467 0.225 -0.059 0.051 EVB10170 1948 0.015 0.061 0.138 -0.067 0.068 0.421 0.315 0.235 0.386 0.217 -0.155 0.031 EVB10070 1948 -0.016 0.053 0.162 0.070 -0.081 0.417 0.246 0.297 0.370 0.216 0.023 -0.186 EVF10005 1948 -0.037 0.069 0.204 -0.056 0.076 0.413 0.273 0.299 0.364 0.249 -0.2190.027 EVA10340 1948 0.164 0.185 -0.004 0.076 0.075 0.447 0.252 0.401 0.493 0.243 -0.034 0.063 EVA10240 1948 0.142 0.163 0.009 0.074 0.046 0.444 0.247 0.383 0.477 0.229 -0.049 0.055 EVb10040 -0.024 1948 0.059 0.177 0.072 -0.072 0.415 0.256 0.297 0.368 0.228 -0.198 0.025 EVB10270 0.075 1948 0.104 0.066 0.069 -0.024 0.433 0.235 0.342 0.428 0.210 -0.101 0.038 EΥ 513 1948 -0.050 0.080 0.230 0.080 -0.040 0.410 0.290 0.300 0.360 0.270 -0.240 0.030 EVQAD412 1948 0.350 0.400 -0.2400.100 0.280 0.490 0.320 0.480 0.650 0.250 0.100 0.080 EVQAD413 1948 0.050 0.000 0.030 0.050 -0.160 0.430 0.160 0.290 0.390 0.110 -0.080 0.010 EVQAD512 1948 0.100 0.080 0.170 0.060 0.020 0.420 0.420 0.210 0.420 0.310 0.090 -0.080 EVA10200 1949 -0.366 0.055 -0.057 -0.007 0.125 0.281 0.089 0.480 0.368 0.024 0.214 -0.027 EVB10170 1949 0.040 -0.427-0.034 -0.007 0.191 0.080 0.007 0.462 0.352 -0.073 0.320 -0.068 EVB10070 1949 -0.427 0.033 -0.040 -0.009 0.187 0.049 -0.049 0.428 0.330 -0.094 0.326 -0.080 EVF10005 -0.423 1949 0.031 -0.034 -0.034 0.189 0.086 -0.086 0.398 0.318 -0.165 -0.080 0.341 EVA10340 1949 -0.472 0.062 -0.079 -0.043 0.172 0.326 0.142 0.395 0.542 -0.077 -0.031 0.297 EVA10240 1949 -0.469 0.057 -0.079 -0.032 0.171 0.274 0.115 0.528 0.384 -0.064 0.297 -0.040 EVB10040 1949 -0.425 0.033 -0.038 -0.0180.187 0.062 -0.062 0.417 0.326 -0.120 -0.080 0.331 EVB10270 1949 -0.450 0.047 -0.062 -0.011 0.178 0.152 0.054 0.493 0.364 -0.050 0.305 -0.059 EVQAD412 1949 -0.580 0.070 -0.230 -0.100 0.100 0.650 0.160 0.550 0.370 -0.120 0.260 -0.020 EVQAD413 1949 -0.440 0.040 -0.060 0.070 0.180 -0.070 0.070 0.520 0.370 0.130 0.280 -0.080 EVQAD512 1949 -0.380 0.080 0.080 -0.040 0.250 0.270 0.280 0.620 0.480 -0.100 0.330 0.010 513 ΕV 1949 -0.420 0.030 -0.030 -0.050 0.190 0.110 -0.110 0.380 0.310 -0.2100.350 -0.080 EVA10200 1950 0.054 0.065 0.127 0.022 0.040 0.250 0.121 0.420 -0.063 0.246 0.119 0.159 EVB10170 1950 0.004 0.045 0.157 0.019 0.013 0.261 0.116 0.476 -0.211 0.218 0.168 0.136 EVB10070 1950 -0.003 0.047 0.153 0.027 0.003 0.250 0.106 0.463 -0.237 0.207 0.157 0.127 EVF10005 1950 -0.007 0.031 0.157 0.244 0.023 0.019 0.133 0.473 -0.214 0.203 0.147 0.111 EVA10340 1950 0.048 0.035 0.136 -0.009 0.080 0.236 0.153 0.473 -0.107 0.250 0.192 0.169 EVA10240 1950 0.041 0.042 0.135 -0.001 0.063 0.236 0.136 -0.137 0.464 0.243 0.167 0.188 EVB10040 1950 -0.005 0.041 0.155 0.025 0.009 0.248 0.116 0.467 -0.229 0.205 0.153 0.121 EVB10270 1950 0.022 0.051 0.143 0.013 0.028 0.246 0.112 0.461 -0.193 0.228 0.178 0.154 EVQAD412 1950 0.110 0.050 -0.020 0.060 0.150 0.120 0.140 -0.060 0.370 0.260 0.190 0.210 EVQAD413 1950 0.010 0.100 0.140 0.040 -0.050 0.270 0.020 0.430 -0.3100.220 0.180 0.190 EVQAD512 1950 0.020 -0.020 0.220 -0.040 0.100 0.360 0.260 0.630 0.280 0.010

0.140

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EV 513	1950	-0.010	0.020	0.160	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
EVA10200	1951	-0.131	-0.015	0.113	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
EVB10170	1951	-0.208	-0.024	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072
EVB10070	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
EVF10005	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
EVA10340	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083	0.000
EVA10240	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
EVB10040	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
EVB10270	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
EVQAD412	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130	0.020
EVQAD413	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
EVQAD512	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
EV 513	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
EVA10200	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
EVB10170	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
EVB10070	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
EVF10005	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181
EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325	-0.220
EVB10040	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260
EVQAD413	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490	-0.190
EVQAD512	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310	-0.230
EV 513	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230	-0.180
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012	-0.121
EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029	-0.186
EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023	-0.199
EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021	-0.230
EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021	-0.178
EVA10240	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020	-0.175
EVB10040	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023	-0.210
EVB10270	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023	-0.174
EVQAD412	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030	-0.200
EVQAD413	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030	-0.100

cyp03\_pit129.EVA EVQAD512 1953 0.050 -0.030 -0.090 0.080 0.040 0.420 0.330 0.490 0.410 0.250 0.080 -0.170 EV 513 1953 -0.120 -0.110 -0.130 -0.090 0.030 0.320 0.080 0.390 0.450 0.240 0.020 -0.250 EVA10200 1954 -0.091 0.179 0.234 -0.142 0.088 0.499 0.487 0.627 0.383 -0.156 0.019 -0.042 EVB10170 1954 -0.117 0.204 0.245 0.084 -0.239 0.553 0.548 0.636 0.418 -0.310 -0.013 -0.076 EVB10070 -0.120 1954 0.196 0.233 -0.258 0.086 0.549 0.533 0.601 0.416 -0.281 -0.026 -0.084 EVF10005 1954 -0.114 0.217 0.243 0.119 -0.228 0.574 0.556 0.570 0.431 -0.238 -0.047 -0.063 EVA10340 1954 -0.120 0.245 0.289 0.124 -0.120 0.561 0.617 0.722 0.403 -0.308 0.042 -0.034 EVA10240 -0.123 1954 0.231 0.275 -0.150 0.110 0.550 0.596 0.708 0.399 -0.309 0.037 -0.049 EVB10040 1954 -0.118 0.204 0.237 0.098 -0.247 0.558 0.541 0.421 0.590 -0.266 -0.034 -0.077 EVB10270 1954 -0.124 0.207 0.252 0.085 -0.212 0.541 0.557 0.402 0.670 -0.314 0.015 -0.073 EVQAD412 1954 -0.160 0.300 0.260 0.180 0.000 0.520 0.650 0.330 0.750 -0.180 -0.020 0.120 EVQAD413 1954 -0.140 0.130 0.200 -0.020 -0.350 0.470 0.460 0.700 0.370 -0.420 -0.150 0.040 EVOAD512 1954 -0.060 0.310 0.350 0.140 -0.080 0.700 0.660 0.780 0.500 -0.440 -0.010 0.030 513 EV 1954 -0.110 0.230 0.250 0.140 -0.210 0.590 0.570 0.550 0.440 -0.210 -0.050 -0.060 EVA10200 1955 -0.026 -0.056 0.161 0.079 0.032 0.374 0.237 0.118 0.202 0.227 0.084 0.179 EVB10170 1955 -0.071 -0.106 0.148 0.099 0.031 0.337 0.200 0.158 0.000 0.198 0.247 0.069 EVB10070 1955 -0.120 -0.083 0.156 0.103 0.010 0.323 0.157 -0.023 0.142 0.185 0.227 0.060 EVF10005 -0.093 1955 -0.132 0.189 0.126 -0.002 0.333 0.147 0.190 -0.039 0.243 0.223 0.060 EVA10340 -0.044 1955 -0.075 0.172 0.104 0.072 0.401 0.328 0.070 0.237 0.297 0.290 0.100 EVA10240 1955 -0.049 -0.081 0.162 0.062 0.097 0.385 0.299 0.058 0.206 0.262 0.278 0.093 EVB10040 1955 -0.087 -0.1240.168 0.006 0.111 0.327 0.153 -0.029 0.159 0.206 0.225 0.060 EVB10270 1955 -0.061 -0.094 0.146 0.043 0.091 0.352 0.237 0.027 0.158 0.203 0.256 0.078 EVQAD412 1955 -0.040 -0.070 0.230 0.100 0.050 0.450 0.370 0.110 0.250 0.360 0.270 0.120 EVQAD413 1955 -0.050 -0.080 0.050 0.050 0.030 0.290 0.190 0.030 -0.010 0.000 0.240 0.060 EVOAD512 1955 -0.020 -0.050 0.160 0.140 0.150 0.440 0.450 0.390 0.100 0.420 0.380 0.120 513 ΕV 1955 -0.100 -0.1400.210 0.140 -0.010 0.340 0.140 -0.050 0.220 0.280 0.220 0.060 EVA10200 1956 0.005 -0.1020.143 0.095 0.120 0.288 0.389 0.460 0.414 0.191 -0.135 0.028 EVB10170 1956 -0.038 -0.1800.095 0.067 0.055 0.234 0.378 0.385 0.343 0.130 -0.122 -0.007 EVB10070 -0.043 -0.184 1956 0.053 0.033 0.031 0.193 0.317 0.297 0.343 0.100 -0.127 -0.023 EVF10005 -0.053 1956 -0.169 0.051 0.037 0.006 0.209 0.319 0.299 0.341 0.100 -0.129 -0.033 EVA10340 -0.022 -0.130 1956 0.226 0.182 0.162 0.366 0.575 0.553 0.512 0.225 -0.136 0.036 EVA10240 -0.022 -0.142 1956 0.195 0.153 0.148 0.328 0.526 0.473 0.517 0.202 -0.136 0.028 EVB10040 1956 -0.047 -0.179 0.053 0.035 0.022 0.199 0.317 0.343 0.297 0.100 -0.127 -0.027 EVB10270 1956 -0.028 -0.167 0.130 0.096 0.102 0.259 0.428 0.436 0.390 0.154 -0.130 0.008 EVQAD412 0.000 1956 -0.060 0.270 0.230 0.290 0.390 0.640 0.680 0.610 0.260 -0.190 0.050

EVQAD413	1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512	1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV 513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200	1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170	1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070	1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVF10005	1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340	1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240	1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006
EVB10040	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVF10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10040	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115
EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVF10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10040	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205

cyp03\_pit129.EVA EVQAD412 1959 0.030 -0.130 0.210 0.150 0.120 0.080 0.070 0.300 0.300 -0.070 -0.060 0.080 EVQAD413 1959 0.020 -0.190 0.150 0.080 0.030 0.010 -0.070 0.300 0.170 -0.010 0.000 -0.220 EVOAD512 1959 0.090 -0.090 0.340 0.100 -0.160 0.100 0.090 0.360 0.280 -0.010 -0.240 0.130 513 ΕV 1959 0.050 -0.1200.240 0.030 -0.040 0.230 -0.030 0.370 0.220 0.090 0.010 -0.250 EVA10200 1960 -0.024 0.001 0.173 0.249 0.182 0.222 0.316 0.242 0.052 0.121 0.021 -0.101 EVB10170 1960 -0.036 -0.042 0.188 0.334 0.270 0.144 0.410 0.216 -0.082 0.050 -0.009 -0.260 EVB10070 1960 -0.040 -0.050 0.190 0.336 0.282 0.146 0.216 0.426 -0.109 0.047 -0.250 -0.032 EVF10005 -0.034 1960 -0.056 0.196 0.345 0.324 0.161 0.453 0.231 -0.128 0.049 -0.062 -0.244 EVA10340 1960 -0.036 -0.012 0.179 0.307 0.247 0.174 0.348 0.213 -0.005 0.077 0.061 -0.189 EVA10240 -0.040 1960 -0.017 0.179 0.309 0.241 0.167 0.353 0.209 -0.019 0.072 0.053 -0.194 EVB10040 1960 -0.038 -0.052 0.192 0.339 0.297 0.151 0.436 0.221 -0.116 0.047 -0.043 -0.248 EVB10270 1960 -0.042 -0.030 0.182 0.319 0.244 0.151 0.377 0.207 -0.054 0.059 0.024 -0.224 EVQAD412 1960 -0.070 0.020 0.160 0.250 0.210 0.240 0.260 0.190 0.030 0.1200.120 0.030 EVQAD413 1960 -0.060 -0.030 0.170 0.310 0.150 0.100 0.340 0.170 -0.050 0.040 0.060 -0.270 EVQAD512 1960 0.020 -0.020 0.200 0.360 0.310 0.140 0.410 0.260 0.040 0.060 0.050 -0.390 513 EV 1960 -0.030 -0.060 0.200 0.350 0.350 0.170 0.470 0.240 -0.140 0.050 -0.080 -0.240 EVA10200 1961 0.063 -0.027 -0.005 0.283 0.160 -0.056 0.102 0.311 0.182 0.149 -0.204 -0.107 EVB10170 1961 -0.042 0.012 -0.081 0.407 0.259 -0.276 0.104 0.308 0.109 0.100 -0.219 -0.169 EVB10070 1961 0.014 -0.043 -0.094 0.422 0.272 -0.324 0.095 0.306 0.090 0.086 -0.224 -0.183 EVF10005 1961 -0.019 -0.041 -0.061 0.470 0.308 -0.4010.141 0.333 0.084 0.113 -0.215 -0.181 EVA10340 1961 0.004 -0.047 0.010 0.214 0.368 -0.163 0.148 0.321 0.157 0.170 -0.214 -0.123 EVA10240 0.017 1961 -0.048 -0.016 0.213 0.363 -0.171 0.125 0.310 0.146 0.147 -0.219 -0.135 EVB10040 1961 0.002 -0.043 -0.082 0.439 0.285 -0.352 0.112 0.088 0.316 0.096 -0.221 -0.183 EVB10270 0.028 1961 -0.046 -0.066 0.373 0.227 -0.213 0.093 0.298 0.122 0.108 -0.224 -0.158 EVQAD412 0.050 1961 -0.070 0.090 0.300 0.140 -0.090 0.130 0.300 0.160 0.200 -0.240 -0.110 EVQAD413 0.120 1961 -0.050 -0.200 0.270 0.160 -0.080 -0.050 0.220 0.110 0.000 -0.250 -0.190 EVQAD512 1961 -0.110 -0.020 0.070 0.460 0.290 -0.180 0.290 0.400 0.220 0.260 -0.160 -0.070 EV 513 1961 -0.040 -0.040 -0.040 0.500 0.330 -0.450 0.170 0.350 0.080 0.130 -0.210 -0.180 EVA10200 1962 -0.079 0.021 0.138 0.072 0.300 0.126 0.340 0.449 0.060 -0.038 -0.035 0.053 EVB10170 1962 -0.114 0.028 0.199 0.071 0.390 0.069 0.398 0.504 0.003 -0.099 -0.122 0.039 EVB10070 1962 -0.120 0.039 0.215 0.074 0.380 0.096 0.413 0.509 0.022 -0.096 -0.136 0.030 EVF10005 1962 -0.114 0.082 0.261 0.065 0.380 0.129 0.423 0.534 0.070 -0.025 -0.145 0.018 EVA10340 1962 -0.102 0.031 0.153 0.059 0.399 0.024 0.353 0.481 -0.023 -0.057 -0.017 0.051 EVA10240 1962 -0.108 0.021 0.151 0.064 0.394 0.030 0.361 -0.027 0.477 -0.082 -0.032 0.050 EVB10040 -0.118 0.054 1962 0.232 0.071 0.380 0.108 0.417 0.518 0.039 -0.070 -0.139

cyp03 pit129.EVA 0.388 0.047 0.360 0.040

-0.023 0.381 0.483 -0.116 -0.079 0.046 EVB10270 -0.116 0.012 0.163 0.072 1962 0.040 0.420 -0.030 EVOAD412 1962 -0.120 0.040 0.080 0.060 0.330 -0.040 0.150 0.430 -0.130 -0.320 -0.1100.070 0.380 -0.010 0.380 EVOAD413 1962 -0.140 -0.100 0.070 0.100 0.070 EVQAD512 0.470 0.560 0.000 0.060 -0.110 1962 -0.050 0.070 0.240 0.030 -0.030 0.330 0.550 0.100 0.020 -0.150 0.010 513 0.380 0.150 0.430 EV 1962 -0.1100.110 0.290 0.060 0.409 -0.004 -0.037 0.132 0.440 0.351 EVA10200 1963 0.033 0.124 0.141 -0.002 0.177 0.316 0.294 0.179 0.419 0.289 0.437 -0.025 -0.100EVB10170 1963 0.023 0.131 0.161 -0.081 0.283 0.305 -0.116 0.399 0.267 0.436 -0.037 EVB10070 1963 0.017 0.127 0.168 -0.090 0.299 0.162 -0.125 0.451 -0.039 EVF10005 1963 0.019 0.123 0.224 -0.096 0.345 0.318 0.198 0.418 0.251 0.032 -0.044 0.506 0.361 0.452 EVA10340 1963 0.036 0.140 0.181 -0.017 0.218 0.296 0.204 -0.055 0.482 0.022 0.349 0.446 EVA10240 1963 0.031 0.139 0.164 -0.025 0.222 0.292 0.182 0.406 0.261 0.441 -0.037 -0.119 0.017 0.125 0.188 -0.092 0.320 0.306 0.175 EVB10040 1963 -0.081 0.246 0.436 -0.005 -0.054 0.288 0.160 0.436 0.317 EVB10270 1963 0.024 0.135 0.144 -0.010 EVQAD412 0.090 0.150 0.310 0.100 0.560 0.410 0.460 0.100 0.020 0.140 0.190 1963 -0.030 -0.090 0.180 0.240 0.050 0.340 0.320 0.390 -0.010 -0.070 EVOAD413 1963 0.010 0.140 -0.020 EVQAD512 -0.080 0.260 0.300 0.430 0.580 0.380 0.480 0.020 1963 0.080 0.150 0.260 0.430 0.240 0.220 0.460 -0.040 -0.130 0.370 0.330 EV 513 1963 0.020 0.120 0.260 -0.100 0.005 0.144 0.044 0.283 -0.016 EVA10200 1964 0.052 -0.017 0.001 -0.077 0.163 0.416 0.434 -0.066 0.474 0.086 0.012 0.305 0.006 0.037 0.220 0.418 EVB10170 1964 -0.031 -0.008 -0.095 0.227 0.053 0.022 0.303 0.013 -0.103 -0.034 0.420 0.449 EVB10070 1964 0.030 -0.010 -0.098 0.018 -0.025 0.229 0.426 0.468 0.069 0.076 0.307 0.023 -0.126 EVF10005 1964 0.002 -0.050 0.173 -0.008 0.292 -0.006 0.038 0.417 0.567 EVA10340 1964 0.041 -0.026 -0.017 -0.052 0.190 0.018 0.143 -0.019 0.291 -0.005 EVA10240 1964 0.042 -0.031 -0.021 -0.073 0.195 0.416 0.540 0.422 0.059 0.305 0.017 -0.111 0.456 0.041 0.026 -0.031 -0.006 -0.081 0.227 EVB10040 1964 0.095 0.295 -0.001 -0.029 -0.021 EVB10270 1964 0.041 -0.035 -0.020 -0.103 0.209 0.416 0.491 0.140 -0.070 0.240 0.000 0.080 EVQAD412 -0.040 0.160 0.420 0.600 1964 0.030 -0.040 -0.070 -0.030 0.290 -0.020 0.000 -0.150 EVOAD413 0.220 0.400 0.390 1964 0.070 -0.060 -0.050 -0.250 -0.020 0.110 0.050 0.190 0.420 0.680 0.370 0.110 0.350 EVQAD512 0.050 0.010 0.060 1964 -0.140 0.310 0.030 -0.020 0.230 0.430 0.480 0.080 0.110 0.010 0.010 -0.020 ΕV 513 1964 -0.018 0.274 0.032 0.042 0.254 -0.106 0.254 0.446 0.438 0.139 EVA10200 1965 -0.043 -0.1110.087 -0.106 0.329 -0.216 0.218 0.546 0.437 0.072 0.283 -0.129 -0.234 -0.015 EVB10170 1965 -0.135 0.096 0.426 0.070 0.296 EVB10070 1965 -0.146 -0.240-0.030 0.346 -0.212 0.206 0.552 -0.161 0.373 -0.254 0.600 0.441 0.070 0.311 0.105 -0.181 0.221 EVF10005 1965 -0.246 -0.036 0.253 0.054 -0.063 0.297 -0.206 0.482 0.072 -0.034 0.256 0.551 EVA10340 1965 -0.168 0.033 0.058 -0.040 0.300 -0.192 0.242 0.537 0.468 0.071 0.257 EVA10240 1965 -0.073 -0.175 0.023

cyp03\_pit129.EVA EVB10040 1965 -0.151 -0.242 -0.032 0.356 -0.227 0.211 0.569 0.431 0.070 0.301 0.099 -0.152 EVB10270 1965 -0.102 -0.204 0.001 0.311 -0.186 0.220 0.526 0.443 0.071 0.270 0.073 -0.067 EVQAD412 1965 0.000 -0.040 0.060 0.290 -0.100 0.250 0.530 0.500 0.060 0.240 0.020 0.010 EVQAD413 1965 -0.100 -0.220 -0.010 0.260 -0.080 0.160 0.400 0.380 0.070 0.250 0.070 0.010 EVQAD512 -0.070 1965 -0.260 0.060 0.290 -0.390 0.340 0.640 0.540 0.090 0.240 -0.040 0.060 ΕV 513 1965 -0.170 -0.250 -0.040 0.390 -0.280 0.230 0.630 0.450 0.070 0.320 0.110 -0.210EVA10200 1966 -0.111 -0.125 0.251 0.025 0.162 0.493 0.299 0.071 0.124 0.153 0.089 -0.136 EVB10170 -0.164 1966 -0.126 0.273 -0.2100.312 0.544 0.369 0.013 0.063 0.120 -0.208 0.107 EVB10070 1966 -0.173 -0.114 0.280 -0.195 0.367 0.563 0.378 0.039 0.080 0.119 0.093 -0.221 EVF10005 1966 -0.177 -0.105 0.286 -0.235 0.449 0.579 0.428 0.076 0.092 0.144 0.103 -0.196 EVA10340 1966 -0.148 -0.190 0.262 -0.105 0.171 0.490 0.361 -0.035 0.023 0.142 -0.141 0.171 EVA10240 -0.152 1966 -0.180 0.264 -0.096 0.185 0.499 0.350 -0.031 0.031 0.131 0.155 -0.161 EVB10040 1966 -0.175 -0.1110.282 -0.2100.397 0.569 0.396 0.052 0.084 0.128 0.097 -0.212 EVB10270 1966 -0.160 -0.152 0.269 -0.1310.239 0.522 0.344 -0.013 0.048 0.116 -0.199 0.122 EVOAD412 1966 -0.160 -0.2700.270 0.290 0.080 0.460 0.330 -0.040 0.020 0.150 0.220 -0.100 EVOAD413 -0.160 -0.140 1966 0.260 -0.070 0.110 0.510 0.220 -0.080 0.040 0.040 0.060 -0.300 EVQAD512 -0.160 1966 -0.110 -0.560 0.240 0.180 0.470 0.450 -0.060 -0.020 0.190 0.210 -0.070 ΕV 513 -0.180 1966 -0.100 0.290 -0.260 0.500 0.590 0.460 0.100 0.100 0.160 0.110 -0.180 EVA10200 0.095 1967 0.053 0.218 0.007 -0.106 0.407 0.212 0.437 0.146 0.147 0.066 -0.142 EVB10170 1967 0.094 0.044 0.266 -0.027 -0.2410.436 0.245 0.465 0.116 0.151 0.105 -0.295 EVB10070 1967 0.087 0.040 0.276 -0.024 -0.279 0.441 0.240 0.456 0.156 0.205 0.110 -0.313 EVF10005 1967 0.089 0.046 0.303 -0.009 -0.316 0.514 0.246 0.477 0.177 0.251 -0.311 0.122 EVA10340 1967 0.113 0.064 0.241 -0.004 -0.107 0.474 0.238 0.489 0.009 0.031 0.106 -0.172 EVA10240 1967 0.107 0.057 0.240 -0.009 -0.126 0.449 0.235 0.476 0.031 0.053 0.104 -0.194 EVB10040 1967 0.087 0.042 0.286 -0.019 -0.292 0.242 0.467 0.464 0.164 0.222 0.114 -0.313 EVB10270 1967 0.097 0.047 0.246 -0.022 -0.184 0.235 0.417 0.459 0.081 0.106 -0.252 0.101 EVQAD412 1967 0.110 0.070 0.210 0.050 0.020 0.490 0.180 0.460 -0.020 0.030 0.120 -0.010 EVQAD413 1967 0.080 0.020 0.190 -0.070 -0.160 0.210 0.220 0.390 0.090 0.060 0.070 -0.320 EVQAD512 1967 0.150 0.090 0.280 -0.030 -0.130 0.590 0.320 0.590 -0.090 -0.100 -0.220 0.100 ΕV 513 0.090 1967 0.050 0.320 0.000 -0.340 0.560 0.250 0.490 0.190 0.280 -0.310 0.130 EVA10200 1968 -0.166 0.045 -0.026 0.055 -0.028 0.086 0.236 0.389 -0.008 0.195 0.035 -0.190 EVB10170 1968 -0.270 0.028 0.049 -0.065 -0.104 0.052 0.272 0.389 -0.173 0.120 -0.246 0.001 EVB10070 1968 -0.302 0.024 0.072 -0.092 -0.073 0.062 0.266 0.373 -0.212 0.103 -0.256 -0.010 EVF10005 1968 -0.350 -0.003 0.120 -0.122 0.015 0.104 0.275 0.389 -0.242 0.113 -0.265 -0.016 EVA10340 -0.216 1968 0.016 -0.059 0.066 -0.037 0.029 0.270 0.440 -0.065 0.207 -0.207

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EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10040	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012
EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017
EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046	-0.003
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055	-0.007
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112	0.068
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098	0.055
EVB10040	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049	-0.005
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071	0.030
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140	0.070
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020	0.010
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160	0.140
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060	-0.010
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004	-0.278
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026	-0.285
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030	-0.261
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030	-0.236

cyp03 pit129.EVA EVA10340 0.130 1971 0.010 0.283 0.278 0.149 0.526 0.044 0.187 0.209 0.093 -0.388 0.026 EVA10240 0.123 1971 0.000 0.268 0.267 0.145 0.519 0.015 0.174 0.215 0.096 0.019 -0.374 EVB10040 0.129 1971 -0.043 0.221 0.237 0.171 0.478 0.003 0.127 0.219 0.104 -0.030 -0.252 EVB10270 1971 0.117 -0.021 0.238 0.247 0.145 0.503 -0.029 0.152 0.225 0.092 -0.005 -0.330 EVQAD412 1971 0.100 0.020 0.320 0.310 0.130 0.540 0.100 0.170 0.180 0.220 -0.510 0.120 EVQAD413 1971 0.070 -0.050 0.170 0.200 0.090 0.500 -0.2400.120 0.270 0.060 -0.030 -0.340 EVQAD512 1971 0.200 0.060 0.330 0.300 0.190 0.550 0.140 0.280 0.210 -0.060 -0.030 -0.340 EΥ 513 1971 0.150 -0.040 0.240 0.250 0.200 0.470 0.090 0.130 0.200 0.120 -0.030 -0.220 EVA10200 1972 -0.038 0.171 0.202 0.206 0.210 0.246 0.299 0.440 0.114 -0.140 -0.176 -0.066 EVB10170 1972 -0.156 0.211 0.207 0.225 0.274 0.158 0.268 0.446 0.057 -0.245 -0.225 -0.136 EVB10070 1972 -0.182 0.210 0.187 0.207 0.276 0.138 0.240 0.446 0.053 -0.257 -0.240 -0.147 EVF10005 1972 -0.230 0.216 0.183 0.191 0.291 0.108 0.240 0.455 0.069 -0.259 -0.228 -0.143 EVA10340 1972 -0.078 0.208 0.254 0.265 0.271 0.213 0.379 0.452 0.067 -0.228 -0.155 -0.082 EVA10240 -0.082 1972 0.206 0.241 0.258 0.268 0.207 0.355 0.449 0.059 -0.235 -0.173 -0.094 EVB10040 1972 -0.199 0.212 0.185 0.201 0.281 0.127 0.240 0.449 0.059 -0.257 -0.236 -0.145 EVB10270 1972 -0.1110.205 0.218 0.241 0.266 0.186 0.301 0.445 0.050 -0.244 -0.210 -0.120 EVQAD412 1972 0.010 0.180 0.240 0.270 0.260 0.250 0.460 0.460 0.040 -0.260 -0.110 -0.030 EVQAD413 1972 -0.030 0.190 0.200 0.260 0.230 0.230 0.240 0.420 0.000 -0.250 -0.280 -0.160 EVQAD512 1972 -0.140 0.250 0.340 0.300 0.300 0.210 0.430 0.460 0.140 -0.160 -0.100 -0.070 513 EV 1972 -0.260 0.220 0.180 0.180 0.300 0.090 0.240 0.460 0.080 -0.260 -0.220-0.140 EVA10200 1973 -0.062 0.045 -0.047 -0.084 0.218 0.039 0.216 0.433 -0.130 -0.054 0.015 -0.005 EVB10170 -0.129 1973 0.062 -0.081 -0.061 0.332 -0.074 0.159 0.460 -0.260 -0.248 0.016 -0.001 EVB10070 1973 -0.1400.069 -0.081 -0.036 0.349 -0.074 0.117 0.459 -0.251 -0.235 0.007 -0.014 EVF10005 1973 -0.152 0.094 -0.038 0.041 -0.065 0.380 0.094 0.484 -0.232 -0.189 0.009 0.019 EVA10340 -0.097 1973 0.051 -0.051 -0.090 0.275 -0.056 0.282 0.470 -0.274 -0.153 0.078 0.023 EVA10240 -0.101 1973 0.047 -0.069 -0.100 0.278 -0.060 0.258 0.460 -0.274 -0.171 0.053 0.018 EVB10040 1973 -0.144 -0.066 0.078 -0.008 0.360 -0.071 0.109 0.468 -0.244 -0.218 -0.002 0.007 EVB10270 1973 -0.114 0.048 -0.091 -0.100 0.300 -0.070 0.201 0.450 -0.271 -0.221 0.009 0.012 EVQAD412 1973 -0.070 0.030 -0.050 -0.1100.200 -0.020 0.340 0.450 -0.270 0.090 -0.020 0.130 EVQAD413 1973 -0.100 -0.220 -0.010 -0.2800.250 -0.100 0.190 0.380 -0.310 -0.380 0.000 -0.120 EVQAD512 -0.100 1973 0.090 0.040 -0.020 0.330 -0.070 0.360 0.540 -0.280 -0.310 0.100 0.160 ΕV 513 1973 -0.160 0.110 -0.010 0.090 0.400 -0.060 0.080 0.500 -0.220 -0.160 0.040 0.010 EVA10200 1974 -0.139 0.142 0.227 0.143 0.128 0.137 0.370 0.091 -0.208 0.076 0.024 -0.124 EVB10170 1974 -0.233 0.159 0.265 0.207 0.134 0.070 0.387 -0.008 -0.331 0.005 -0.119 0.061 EVB10070 1974 -0.263 0.150 0.266 0.197 0.136 0.057 0.356

-0.017

-0.343

0.000

-0.121

cyp03\_pit129.EVA -0.341 0.139 0.365 -0.019 -0.006 -0.096 0.087 EVF10005 1974 -0.279 0.150 0.281 0.187 0.151 0.027 -0.152 EVA10340 1974 0.178 0.260 0.185 0.163 0.180 0.490 0.022 -0.330 0.020 -0.103 0.156 0.137 0.016 -0.336 0.018 -0.113 0.026 EVA10240 -0.169 0.172 0.256 0.187 0.462 1974 -0.017 EVB10040 0.141 0.087 -0.343 -0.002 -0.112 0.074 1974 -0.269 0.150 0.271 0.193 0.359 0.141 0.410 0.001 -0.340 0.012 -0.126 0.037 EVB10270 -0.206 0.162 0.255 0.196 0.068 1974 -0.050 0.520 0.040 -0.410 0.030 -0.1100.090 0.220 0.240 EVOAD412 1974 -0.130 0.170 0.230 0.000 EVQAD413 -0.210 0.090 -0.200 0.330 -0.010 -0.350 0.020 -0.200 1974 0.150 0.220 0.230 -0.210 -0.040 0.110 EVQAD512 0.610 0.040 0.020 1974 -0.080 0.220 0.310 0.280 0.140 0.350 0.100 -0.020 -0.340 -0.010 -0.080 EV 513 1974 -0.290 0.150 0.290 0.180 0.160 0.190 0.370 -0.022 EVA10200 0.171 0.303 0.357 0.316 0.286 -0.003 1975 0.074 0.033 0.073 0.120 -0.021 -0.037 0.299 0.218 -0.051 0.110 0.354 0.342 -0.001 EVB10170 1975 0.068 0.080 0.103 0.009 0.346 0.343 0.303 0.194 -0.023 -0.041 EVB10070 1975 0.054 -0.073 0.070 0.097 0.009 0.094 -0.022 -0.021 0.359 0.319 0.173 1975 0.039 -0.077 0.070 0.087 0.034 0.079 0.373 EVF10005 0.357 0.070 -0.020 0.087 0.056 0.077 0.133 0.001 0.130 0.379 0.300 0.304 EVA10340 1975 -0.030 0.052 0.131 -0.006 0.126 0.364 0.351 0.296 0.291 EVA10240 1975 0.084 0.037 0.073 -0.023 -0.034 EVB10040 1975 0.049 -0.075 0.070 0.093 0.018 0.089 0.356 0.349 0.309 0.187 0.293 -0.042 -0.014 -0.008 0.117 0.346 0.340 0.253 0.016 0.072 0.119 EVB10270 1975 0.076 -0.030 -0.050 0.100 0.370 0.300 0.380 0.090 EVQAD412 1975 0.060 0.170 0.010 0.180 0.350 -0.070 0.260 0.290 0.250 0.260 -0.030 -0.100 EVQAD413 0.070 0.130 0.140 1975 0.100 -0.060 0.040 0.490 0.380 0.320 0.300 0.150 0.100 0.090 0.190 EVOAD512 1975 0.140 0.050 0.170 0.370 0.330 -0.010 0.080 0.050 0.070 0.390 0.160 -0.020 ΕV 513 1975 0.030 -0.080 0.070 0.044 -0.045 0.429 0.011 0.042 EVA10200 -0.031 0.132 0.197 1976 0.091 0.098 -0.1180.059 0.071 -0.054 -0.132 0.385 -0.030 EVB10170 1976 0.018 0.087 -0.1940.098 -0.040 -0.034 0.160 -0.147 0.364 -0.051 -0.018 0.060 -0.040 -0.054 0.141 EVB10070 1976 -0.006 0.079 -0.2170.127 0.337 -0.032 0.012 0.066 -0.143 -0.040 -0.045 0.110 EVF10005 1976 -0.021 0.098 -0.207 0.129 0.001 -0.044 0.095 0.201 0.445 -0.043 -0.060 0.106 -0.049 1976 0.119 0.137 -0.127 EVA10340 -0.066 -0.049 0.095 0.438 -0.061 -0.148 0.023 -0.043 0.070 0.198 EVA10240 1976 0.102 0.122 -0.145 0.354 -0.044 0.062 EVB10040 -0.213 0.127 -0.040 -0.051 0.130 -0.007 1976 -0.011 0.086 -0.106 -0.057 -0.052 0.076 EVB10270 0.071 -0.042 0.008 0.183 0.414 0.095 -0.184 1976 0.057 0.040 0.220 0.490 -0.020 -0.090 0.110 EVOAD412 0.220 0.180 -0.130 -0.050 -0.050 0.260 1976 0.040 -0.160 EVOAD413 0.120 -0.040 -0.080 0.240 0.450 -0.110-0.110 1976 0.040 0.020 -0.250 -0.050 EVQAD512 -0.070 -0.040 0.060 0.200 0.440 -0.040 -0.030 0.160 1976 0.110 0.170 -0.010 513 0.130 -0.040 -0.040 0.090 0.320 -0.020 0.030 0.070 -0.140 EV -0.030 0.110 -0.200 1976 0.093 0.250 0.258 EVA10200 0.286 -0.167 -0.077 0.033 0.174 0.250 0.284 0.350 1977 0.055

0.293

0.338

0.232

0.360

0.167

0.188

1977

EVB10170

-0.109

0.061

0.009

0.273

-0.176

cyp03 pit129.EVA EVB10070 1977 -0.114 0.066 0.009 0.323 0.340 0.233 0.333 0.141 0.173 0.273 -0.174 0.053 EVF10005 -0.105 1977 0.087 0.040 0.346 0.346 0.231 0.104 0.331 0.183 -0.147 0.277 0.057 EVA10340 -0.101 1977 0.060 0.032 0.175 0.317 0.241 0.444 0.223 0.258 0.284 0.124 -0.164 EVA10240 1977 -0.106 0.055 0.020 0.193 0.318 0.241 0.424 0.217 0.241 0.281 -0.173 0.111 EVB10040 1977 -0.111 0.074 0.020 0.331 0.342 0.233 0.333 0.128 0.177 0.275 0.055 -0.164 EVB10270 1977 -0.113 0.052 0.003 0.245 0.326 0.238 0.382 0.196 0.205 0.276 -0.184 0.082 EVQAD412 1977 -0.1200.060 0.040 0.050 0.270 0.270 0.470 0.240 0.310 0.300 -0.160 0.170 EVOAD413 1977 -0.140 0.000 -0.090 0.250 0.320 0.240 0.340 0.260 0.140 0.260 -0.260 0.040 EVQAD512 1977 -0.050 0.080 0.090 0.200 0.360 0.210 0.530 0.240 0.300 0.280 -0.120 0.150 EV 513 -0.100 1977 0.100 0.060 0.360 0.350 0.230 0.330 0.080 0.190 0.280 0.060 -0.130 EVA10200 1978 -0.137 -0.018 0.058 0.214 0.095 0.430 0.487 0.488 0.299 0.330 -0.371 -0.078 EVB10170 -0.242 1978 -0.015 0.058 0.275 0.135 0.446 0.494 0.456 0.216 0.281 -0.414 -0.146 EVB10070 1978 -0.263 -0.004 0.059 0.276 0.137 0.453 0.481 0.447 0.207 0.264 -0.422 -0.167 EVF10005 1978 -0.273 0.011 0.084 0.297 0.139 0.463 0.456 0.431 0.255 0.197 -0.359 -0.169 EVA10340 1978 -0.168 -0.049 0.059 0.278 0.115 0.430 0.553 0.501 0.269 0.359 -0.355 -0.078 EVA10240 1978 -0.182 -0.045 0.051 0.271 0.118 0.431 0.549 0.497 0.263 0.346 -0.385 -0.094 EVB10040 1978 -0.267 0.001 0.068 0.284 0.137 0.457 0.472 0.441 0.203 0.261 -0.400 -0.167 EVB10270 1978 -0.216 -0.031 0.046 0.265 0.126 0.437 0.526 0.480 0.240 0.310 -0.426 -0.127 EVOAD412 -0.110 1978 -0.080 0.030 0.260 0.080 0.420 0.640 0.570 0.350 0.440 -0.360 -0.050 EVOAD413 1978 -0.230 -0.050 -0.020 0.210 0.130 0.420 0.560 0.500 0.240 0.290 -0.620 -0.160 EVQAD512 1978 -0.150 -0.040 0.130 0.330 0.140 0.430 0.490 0.450 0.350 0.220 -0.190 -0.020 ΕV 513 1978 -0.280 0.020 0.100 0.310 0.140 0.470 0.440 0.420 0.190 0.250 -0.320 -0.170 EVA10200 -0.142 1979 -0.081 0.012 0.043 -0.046 0.283 0.022 0.267 0.140 0.141 -0.007 -0.061 EVB10170 -0.341 1979 -0.140 -0.054 0.046 0.003 0.261 0.286 -0.053 0.022 0.128 -0.014 -0.099 EVB10070 1979 -0.392 -0.147 -0.061 0.045 0.025 0.239 -0.078 0.302 0.014 0.123 -0.100 -0.046 EVF10005 -0.446 -0.137 1979 -0.0240.091 0.065 0.258 -0.042 0.350 0.005 0.146 -0.100 -0.061 EVA10340 1979 -0.166 -0.099 0.023 -0.062 0.089 0.323 0.066 0.250 0.069 0.140 0.068 -0.097 EVA10240 1979 -0.190 -0.109 0.000 0.070 -0.058 0.301 0.031 0.245 0.063 0.129 0.050 -0.098 EVB10040 1979 -0.411 -0.143 -0.048 0.062 0.040 0.246 -0.065 0.319 0.011 0.131 -0.051 -0.100 EVB10270 1979 -0.264 -0.131 -0.044 0.040 -0.034 0.265 0.253 -0.034 0.043 0.117 0.011 -0.099 EVOAD412 1979 0.000 -0.060 0.100 0.120 -0.130 0.300 0.130 0.200 0.140 0.100 0.080 -0.100 EVOAD413 1979 -0.220 -0.180 -0.180 -0.100 -0.100 0.180 -0.190 0.150 0.040 0.050 0.000 -0.100 EVOAD512 1979 -0.200 -0.080 0.070 0.160 -0.020 0.470 0.190 0.320 0.030 0.240 0.160 -0.090 ΕV 513 1979 -0.480 -0.130 0.000 0.120 0.090 0.270 -0.020 0.380 0.000 0.160 -0.100 -0.070 EVA10200 1980 -0.074 0.115 0.112 0.100 0.034 0.282 0.582 0.589

0.115

0.167

0.003

cyp03 pit129.EVA EVB10170 1980 -0.077 0.062 0.300 0.160 0.067 0.111 0.654 0.597 0.111 0.152 -0.005 0.084 0.034 EVB10070 1980 -0.074 0.162 0.044 0.090 0.299 0.657 0.590 0.128 0.149 -0.013 0.090 EVF10005 1980 -0.047 0.192 0.013 0.102 0.035 0.078 0.330 0.659 0.584 0.197 0.174 -0.017 EVA10340 1980 -0.091 0.087 0.074 0.155 0.138 0.148 0.293 0.669 0.636 0.081 0.166 0.033 EVA10240 1980 -0.097 0.123 0.079 0.631 0.074 0.147 0.139 0.283 0.668 0.070 0.156 0.027 EVB10040 -0.064 1980 0.173 0.041 0.086 0.027 0.310 0.657 0.588 0.153 0.158 -0.015 0.094 EVB10270 1980 -0.096 0.143 0.089 0.121 0.067 0.279 0.614 0.071 0.143 0.076 0.661 0.010 0.020 0.070 EVQAD412 -0.140 0.000 0.690 1980 0.120 0.170 0.120 0.220 0.720 0.150 0.080 EVOAD413 1980 -0.160 0.070 0.070 0.130 0.100 0.200 0.650 0.610 -0.090 0.070 0.000 0.050 0.230 0.080 EVQAD512 1980 -0.010 0.230 0.230 0.190 0.420 0.620 0.610 0.200 0.240 0.020 0.110 ΕV 513 0.000 1980 -0.030 0.210 0.030 0.070 0.350 0.660 0.580 0.240 0.190 -0.020 EVA10200 0.168 1981 0.120 0.027 0.116 0.197 -0.223 0.246 0.247 0.337 0.317 -0.166 0.080 0.229 0.236 EVB10170 1981 0.099 -0.018 0.078 -0.308 0.127 0.256 0.271 -0.329 0.054 0.180 EVB10070 1981 0.094 -0.034 0.070 0.224 -0.314 0.117 0.245 0.243 0.217 -0.3220.034 0.173 -0.281 0.171 EVF10005 1981 0.085 -0.025 0.076 0.215 0.107 0.291 0.253 0.201 -0.266 0.019 0.202 EVA10340 1981 0.124 0.054 0.123 0.237 -0.239 0.198 0.332 0.385 0.307 -0.256 0.143 0.197 EVA10240 0.121 0.113 0.236 -0.260 0.357 0.296 -0.278 0.129 1981 0.037 0.190 0.304 0.173 EVB10040 0.091 -0.302 0.211 -0.302 0.029 1981 -0.031 0.072 0.221 0.113 0.262 0.247 EVB10270 0.234 -0.299 0.300 0.265 -0.321 0.090 0.187 1981 0.111 0.000 0.090 0.159 0.259 0.380 0.210 EVQAD412 1981 0.160 0.230 -0.170 0.320 0.370 0.460 -0.1200.240 0.110 0.170 EVQAD413 0.120 -0.060 0.050 0.250 -0.420 0.150 0.100 0.210 0.270 -0.500 0.080 0.180 1981 **EVQAD512** 0.220 0.100 0.250 -0.200 0.120 0.460 0.290 -0.280 0.120 1981 0.090 0.130 0.440 1981 -0.230 0.170 ΕV 513 0.080 -0.020 0.080 0.210 -0.260 0.100 0.320 0.260 0.190 0.010 EVA10200 -0.348 -0.033 0.057 0.071 0.341 0.368 0.032 -0.335 1982 -0.018 0.158 0.068 0.311 -0.003 -0.448 0.343 -0.062 -0.393 EVB10170 1982 -0.076 -0.050 0.148 0.001 -0.050 0.368 0.371 0.369 0.330 -0.077 -0.408 -0.491 EVB10070 1982 -0.084 -0.057 0.143 -0.020 -0.011 -0.044 0.369 0.336 EVF10005 1982 -0.069 -0.047 0.141 -0.026 0.008 -0.011 0.388 0.394 -0.073 -0.378 -0.466 EVA10340 1982 -0.034 -0.017 0.162 0.090 0.103 -0.007 0.358 0.362 0.390 -0.004 -0.334 -0.330 EVA10240 1982 -0.047 0.159 0.073 0.083 -0.019 0.354 0.354 0.377 -0.018 -0.356 -0.369 -0.027 EVB10040 1982 -0.079 -0.053 0.143 -0.022 -0.004 -0.032 0.376 0.378 0.332 -0.075 -0.397 -0.482 EVB10270 -0.070 -0.045 0.032 0.031 -0.045 0.354 0.352 0.353 -0.047 -0.391 -0.435 1982 0.153 -0.360 EVQAD412 -0.010 0.280 0.320 0.290 0.410 0.030 -0.330 1982 0.000 0.170 0.170 0.080 EVQAD413 1982 -0.130 -0.090 0.000 -0.070 0.290 0.310 -0.090 -0.500 -0.570 0.150 -0.150 0.310

0.480

0.410

0.420

0.400

0.440

0.340

-0.220

-0.360

0.040

-0.070

-0.080

-0.450

EVQAD512

513

ΕV

1982

1982

0.010

-0.060

0.020

-0.040

0.170

0.140

0.100

-0.030

0.030

0.020

-0.030

cyp03 pit129.EVA EVA10200 1983 -0.032 0.067 0.121 0.186 -0.057 0.143 0.294 0.345 0.158 0.375 -0.077 -0.145EVB10170 1983 -0.166 0.066 0.114 0.248 -0.103 0.037 0.328 0.285 0.342 0.146 -0.131 -0.237 EVB10070 1983 0.056 -0.196 0.117 0.246 -0.113 0.036 0.325 0.277 0.333 0.146 -0.156 -0.266 EVF10005 1983 0.065 -0.223 0.119 0.279 -0.129 0.051 0.383 0.254 0.331 0.155 -0.165 -0.275 EVA10340 1983 0.093 -0.039 0.105 0.264 -0.076 0.081 0.386 0.312 0.377 0.132 -0.036 -0.150 EVA10240 1983 0.083 -0.057 0.106 0.251 -0.078 0.072 0.360 0.313 0.370 0.131 -0.054 -0.169 EVB10040 1983 0.059 -0.206 0.117 0.258 -0.119 0.041 0.346 0.269 0.333 0.149 -0.159 -0.269 EVB10270 1983 0.067 -0.112 0.110 0.236 -0.088 0.049 0.321 0.305 0.354 0.135 -0.099 -0.211 EVQAD412 1983 0.080 0.110 0.100 0.240 -0.050 0.160 0.420 0.360 0.410 0.090 0.040 -0.120 EVQAD413 1983 0.030 -0.110 0.110 0.140 -0.060 -0.010 0.140 0.350 0.340 0.120 -0.130 -0.240 EVQAD512 1983 0.160 -0.090 0.100 0.360 -0.090 0.050 0.490 0.260 0.380 0.180 -0.010 -0.070 ΕV 513 1983 0.070 -0.240 0.120 0.300 -0.1400.060 0.420 0.240 0.330 0.160 -0.170 -0.280 EVA10200 1984 -0.005 -0.045 -0.010 0.207 0.062 0.397 0.223 0.327 0.193 -0.424 -0.034 -0.068 EVB10170 1984 -0.022 -0.170 -0.056 0.281 0.1110.374 0.253 0.280 0.145 -0.660 -0.163 -0.049 EVB10070 -0.020 1984 -0.197 -0.048 0.285 0.115 0.373 0.238 0.262 0.125 -0.707 -0.196 -0.060 EVF10005 1984 -0.014 -0.193 0.006 0.331 0.173 0.377 0.294 0.292 0.165 -0.684 -0.205 -0.048 EVA10340 -0.027 1984 -0.026 -0.019 0.289 0.131 0.395 0.327 0.372 0.224 -0.484 -0.011 -0.023 EVA10240 1984 -0.028 -0.055 -0.037 0.276 0.112 0.391 0.294 0.195 0.345 -0.531 -0.040 -0.035 EVB10040 1984 -0.018 -0.195 -0.029 0.302 0.136 0.375 0.258 0.273 0.140 -0.699 -0.199 -0.056 EVB10270 1984 -0.027 -0.123 -0.064 0.263 0.091 0.381 0.247 0.295 0.147 -0.622 -0.110-0.051 EVQAD412 1984 -0.040 0.130 0.040 0.270 0.120 0.430 0.320 0.430 0.230 -0.410 0.140 -0.050 EVQAD413 1984 -0.040 -0.210 -0.220 0.140 -0.070 0.360 0.060 0.170 0.000 -0.780 -0.170 -0.100 EVQAD512 1984 -0.010 -0.030 0.010 0.380 0.240 0.380 0.510 0.460 0.380 -0.300 -0.010 0.070 ΕV 513 1984 -0.010 -0.190 0.040 0.360 0.210 0.380 0.330 0.310 0.190 -0.210 -0.670 -0.040 EVA10200 1985 0.016 -0.059 0.049 0.053 0.126 0.297 0.264 0.532 0.288 -0.113 -0.221 -0.031 EVB10170 1985 -0.030 -0.100 0.041 0.085 0.222 0.307 0.234 0.562 0.236 -0.317 -0.337 -0.067 EVB10070 1985 -0.043 -0.109 0.045 0.086 0.222 0.315 0.214 0.556 0.230 -0.345 -0.347 -0.060 EVF10005 -0.047 1985 -0.128 0.085 0.119 0.258 0.373 0.205 0.571 0.242 -0.391 -0.343 -0.048 EVA10340 1985 0.018 -0.093 0.053 0.204 0.091 0.310 0.314 0.592 0.279 -0.222 -0.245 -0.066 EVA10240 1985 0.008 -0.092 0.041 0.194 0.080 0.298 0.296 0.581 0.268 -0.230 -0.260 -0.067 EVB10040 1985 -0.045 -0.116 0.060 0.098 0.235 0.336 0.211 0.561 0.234 -0.362 -0.345 -0.056 EVB10270 1985 -0.014 -0.093 0.028 0.070 0.194 0.284 0.260 0.564 0.245 -0.267 -0.303 -0.069 EVQAD412 1985 0.050 -0.110 0.050 0.060 0.110 0.300 0.370 0.600 0.320 -0.110 -0.100 -0.040 EVQAD413 1985 -0.030 -0.050 -0.080 -0.020 0.110 0.130 0.240 0.510 0.190 -0.200 -0.360 -0.100 EVQAD512 1985 0.040 -0.080 0.1200.180 0.350 0.410 0.330 0.640 0.300

-0.290

-0.310

-0.090

EV 513	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040
EVA10200	1986	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
EVB10170	1986	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
EVB10070	1986	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
EVF10005	1986	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
EVA10340	1986	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
EVA10240	1986	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
EVB10040	1986	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
EVB10270	1986	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
EVQAD412	1986	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
EVQAD413	1986	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
EVQAD512	1986	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
EV 513	1986	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230
EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10040	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373
EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10040	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190

cyp03\_pit129.EVA EVQAD512 1988 0.250 0.100 0.080 0.290 0.410 0.450 0.350 0.540 0.300 0.030 -0.150 -0.070 ΕV 513 1988 0.230 0.020 0.030 0.280 0.460 0.460 0.340 0.210 0.350 -0.080 -0.230 -0.190 EVA10200 -0.064 1989 -0.007 -0.002 0.230 -0.092 0.053 0.048 0.274 0.284 0.217 0.139 0.109 EVB10170 1989 -0.137 -0.096 -0.1190.303 -0.087 -0.250 0.057 0.233 0.274 0.175 0.167 0.087 EVB10070 1989 -0.163 -0.110 -0.153 0.309 -0.325 -0.064 0.042 0.216 0.273 0.167 0.154 0.070 EVF10005 1989 -0.186 -0.104 -0.163 0.346 -0.031 -0.371 0.084 0.249 0.283 0.169 0.145 0.058 EVA10340 1989 -0.076 -0.002 0.010 -0.135 0.305 0.052 0.094 0.313 0.267 0.212 0.213 0.136 EVA10240 1989 -0.086 -0.020 -0.015 -0.131 0.295 0.001 0.070 0.286 0.264 0.204 0.205 0.127 EVB10040 1989 -0.171 -0.108 -0.157 0.322 -0.052 -0.342 0.057 0.228 0.277 0.167 0.066 0.151 EVB10270 1989 -0.113 -0.065 -0.076 0.287 -0.113 -0.135 0.042 0.240 0.264 0.185 0.184 0.105 EVQAD412 1989 -0.060 0.120 0.110 0.290 -0.150 0.340 0.030 0.340 0.230 0.240 0.250 0.160 EVQAD413 1989 -0.090 -0.130 -0.1200.190-0.170 -0.180 -0.090 0.240 0.110 0.160 0.180 0.110 EVQAD512 1989 -0.030 -0.030 0.050 0.370 -0.150 0.040 0.290 0.430 0.320 0.230 0.220 0.160 ΕV 513 1989 -0.200 -0.100 -0.170 0.370 -0.010 -0.400 0.110 0.270 0.290 0.170 0.140 0.050 EVA10200 1990 -0.2180.016 -0.122 0.090 -0.104 0.334 0.170 0.371 0.109 -0.042 -0.175 -0.100 EVB10170 -0.015 1990 -0.383 -0.146 0.156 -0.137 0.326 0.187 0.355 0.059 -0.146 -0.206 -0.123 EVB10070 1990 -0.393 -0.018 -0.129 0.159 -0.144 0.323 0.173 0.337 0.056 -0.165 -0.227 -0.121 EVF10005 -0.409 1990 0.018 -0.068 0.196 -0.123 0.346 0.183 0.321 0.065 -0.125 -0.229 -0.084 EVA10340 -0.311 1990 0.041 -0.167 -0.097 0.140 0.346 0.210 0.383 0.051 -0.049 -0.154 -0.109 EVA10240 1990 -0.318 0.023 -0.176-0.111 0.131 0.335 0.198 0.377 0.048 -0.080 -0.168 -0.121 EVB10040 1990 -0.399 -0.005 -0.107 0.172 0.331 -0.137 0.177 0.331 0.059 -0.150 -0.227 -0.108 EVB10270 1990 -0.347 -0.010 -0.177 0.130 -0.135 0.320 0.183 0.365 0.049 -0.135 -0.194 -0.136 EVQAD412 1990 -0.180 -0.190 0.100 0.070 -0.080 0.340 0.160 0.360 0.000 0.000 -0.120 -0.160 EVQAD413 1990 -0.340 -0.320 -0.1300.040 -0.2100.250 0.140 0.390 0.030 -0.290 -0.220 -0.240 EVQAD512 1990 -0.410 0.080 -0.100 0.260 -0.040 0.410 0.330 0.440 0.120 0.070 -0.070 -0.030 513 ΕV 1990 -0.420 0.040 -0.030 0.220 -0.110 0.360 0.190 0.310 0.070 -0.100 -0.230 -0.060 EVA10200 1991 0.002 -0.017 0.162 -0.276 -0.009 0.294 0.264 0.228 0.193 -0.010 -0.083 0.009 EVB10170 1991 -0.042 -0.067 0.159 -0.465 0.001 0.174 0.278 0.129 0.114 -0.070 -0.122 -0.189 EVB10070 1991 -0.077 -0.053 0.146 -0.540 -0.033 0.154 0.250 0.100 0.099 -0.059 -0.147 -0.219 EVF10005 -0.061 1991 -0.051 0.155 -0.552 -0.043 0.133 0.262 0.100 0.118 0.020 -0.124 -0.256 EVA10340 0.009 1991 -0.014 0.200 -0.215 0.058 0.271 0.359 0.238 0.186 -0.032 -0.007 -0.015 EVA10240 -0.009 1991 -0.023 0.187 -0.2700.040 0.259 0.334 0.214 0.165 -0.057 -0.038 -0.034 EVB10040 1991 -0.071 -0.053 0.149 -0.544 -0.037 0.147 0.254 0.100 0.106 -0.031 -0.139 -0.232 EVB10270 1991 -0.048 -0.038 0.165 -0.391 0.011 0.217 0.290 0.160 0.127 -0.089 -0.098 -0.108 EVQAD412 0.100 1991 -0.020 -0.090 0.200 -0.010 0.400 0.350 0.310 0.230 0.010 0.260 0.070

EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EVQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143
EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10040	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EVQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EVQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EVQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10040	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EVQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EVQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EVQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180
EV 513	1993	-0.030	0.020	0.020	0.090	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10040	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195

cyp03\_pit129.EVA EVOAD412 1994 0.040 0.070 0.280 0.170 0.060 0.420 0.180 0.380 0.360 -0.030 0.180 0.030 EVQAD413 1994 -0.200 -0.100 0.020 0.160 -0.020 0.190 -0.020 0.310 0.360 -0.410 -0.200 -0.260 EVQAD512 0.070 1994 -0.030 0.150 0.260 -0.070 0.400 0.360 0.370 0.430 -0.400 0.110 -0.110 ΕV 513 1994 -0.120 -0.1800.130 0.160 -0.160 0.250 0.160 0.170 0.380 -0.520 0.120 -0.270 EVA10200 1995 0.150 0.055 0.130 -0.034 0.033 0.294 0.278 0.425 0.102 0.281 EVB10170 0.099 -0.051 0.209 1995 0.086 0.068 -0.103 0.033 0.283 0.289 0.397 0.062 0.261 0.141 -0.135 EVB10070 0.216 1995 0.096 0.057 -0.127 0.048 0.289 0.273 0.390 0.056 0.243 0.129 -0.175 EVF10005 1995 0.243 0.117 0.059 -0.111 0.104 0.326 0.277 0.396 0.077 0.259 0.148 -0.215 EVA10340 1995 0.183 0.054 0.140 0.009 0.057 0.289 0.337 0.444 0.063 0.333 0.191 -0.040 EVA10240 1995 0.180 0.055 0.126 -0.0190.043 0.279 0.324 0.434 0.054 0.312 0.175 -0.056 EVB10040 1995 0.226 0.104 0.057 -0.121 0.068 0.302 0.275 0.392 0.064 0.249 0.136 -0.190 EVB10270 1995 0.187 0.066 0.092 -0.076 0.023 0.269 0.299 0.410 0.047 0.273 0.146 -0.096 EVQAD412 1995 0.130 0.010 0.230 0.090 0.130 0.290 0.340 0.500 0.000 0.360 0.210 -0.020 EVQAD413 1995 0.130 0.030 0.050 -0.180-0.130 0.170 0.260 0.370 -0.010 0.190 0.070 -0.050 EVOAD512 1995 0.250 0.090 0.120 0.080 0.050 0.340 0.410 0.440 0.180 0.420 0.260 0.030 513 EV 1995 0.260 0.130 0.060 -0.100 0.140 0.350 0.280 0.400 0.090 0.270 0.160 -0.240 EVA10200 1996 0.052 0.219 0.124 0.132 0.132 0.096 -0.031 0.064 0.001 0.098 -0.105 -0.007 EVB10170 1996 0.050 0.205 0.134 0.138 0.220 0.011 0.016 -0.035 -0.147 0.023 -0.165 -0.024 EVB10070 1996 0.040 0.190 0.123 0.130 0.231 -0.015 0.001 -0.041 -0.196 0.013 -0.179 -0.024 EVF10005 1996 0.040 0.202 0.146 0.142 0.304 0.031 0.062 -0.022 -0.2170.036 -0.204 -0.015 EVA10340 1996 0.067 0.296 0.167 0.182 0.222 0.122 0.025 0.002 -0.017 0.089 -0.115 -0.022 EVA10240 1996 0.060 0.275 0.151 0.169 0.203 0.084 -0.002 -0.010 -0.046 0.070 -0.118 -0.025 EVB10040 1996 0.040 0.194 0.131 0.134 0.257 0.002 0.023 -0.034 -0.204 0.021 -0.188 -0.021 EVB10270 1996 0.051 0.230 0.129 0.146 0.188 0.020 -0.022 -0.032 -0.108 0.034 -0.137 -0.028 EVQAD412 1996 0.040 0.390 0.140 0.210 0.190 0.150 -0.130 0.030 0.000 0.140 -0.050 -0.030 EVQAD413 1996 0.040 0.150 0.050 0.090 0.000 -0.160 -0.190 -0.100 -0.130 -0.060 -0.100 -0.050 EVQAD512 1996 0.130 0.310 0.280 0.220 0.350 0.300 0.330 0.040 0.130 0.140 -0.160 0.000 ΕV 513 1996 0.040 0.210 0.160 0.150 0.350 0.060 0.100 -0.010 -0.230 0.050 -0.220 -0.010 EVA10200 1997 0.012 -0.110 0.120 -0.120 0.085 0.156 0.334 0.207 0.333 -0.089 -0.117 -0.112 EVB10170 1997 -0.054 -0.203 -0.263 0.083 0.161 0.077 0.344 0.140 0.277 -0.217 -0.143 -0.203 EVB10070 1997 -0.067 -0.210 0.062 -0.3100.159 0.069 0.320 0.126 0.266 -0.247 -0.161 -0.217 EVF10005 1997 -0.204 -0.069 0.092 -0.298 0.190 0.094 0.332 0.135 0.293 -0.237 -0.142 -0.201 EVA10340 1997 0.009 -0.144 0.182 -0.057 0.152 0.130 0.433 0.191 0.360 -0.115 -0.068 -0.119 EVA10240 1997 -0.002 -0.156 -0.104 0.153 0.142 0.113 0.409 0.177 0.338 -0.143 -0.090 -0.140 EVB10040 1997 -0.067 -0.208 0.073 -0.306 0.170 0.078 0.324 0.129 0.276 -0.243

-0.154

-0.211

EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10040	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027
EVQAD412	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100	0.040
EVQAD413	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090	0.000
EVQAD512	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240	0.010
FV 513	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210	-0.110

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IN 513	1948	100	100	100	сур 100	003_pit12 100	9.FLO 100	100	100	100	100	100
100 INA10000 2191	1948	39837	54683	47268	18644	80804	2587	1317	387	556	538	1879
INB10000 6612	1948	85421	140304	163444	51133	152410	18308	3893	387	556	981	3951
INC10000 3235	1948	29882	63557	70415	21164	55875	5249	1664	114	3	10	1918
IND10000 3105	1948	28684	61008	67592	20315	53634	5039	1597	109	3	9	1841
INE10000 5538	1948	51160	108813	120555	36234	95661	8987	2848	195	6	17	3284
INF10000 22719	1948	245818	461732	523372	160270	448842	48059	12411	1026	834	1487	13517
INQAD412 100	1948	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1948	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1948	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1949	100	100	100	100	100	100	100	100	100	100	100
INA10000 15562	1949	53230	29211	29964	22062	12371	4506	2639	873	2377	104149	7855
INB10000 30625	1949	53230	79641	71509	48647	32490	9267	9567	2955	6378	147337	47440
INC10000 13587	1949	15790	29611	30349	31147	26382	3474	11109	6217	4319	33309	31430
IND10000 13042	1949	15156	28423	29132	29898	25324	3335	10664	5967	4146	31973	30169
INE10000 23262	1949	27033	50696	51959	53326	45168	5948	19020	10643	7394	57027	53810
INF10000 99641	1949	141843	236198	227144	196580	153638	27600	58619	29262	26715	350976	195930
INQAD412 100	1949	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1949	100	100	100	100	100	100	100	100	100	100	100

					сур	03 pit12	9.FLO					
INQAD512 100	1949	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1950	100	100	100	100	100	100	100	100	100	100	100
INA10000 2978	1950	84084	136888	36163	11532	110724	12673	5932	3612	58208	3290	2395
INB10000 9703	1950	187555	272450	76563	30284	251282	35799	9234	8581	155414	14209	8728
INC10000 5624	1950	86809	92543	27263	17358	91101	20008	5707	6373	31989	6056	5245
IND10000 5398	1950	83328	88832	26169	16662	87448	19205	5478	6118	30707	5813	5034
INE10000 9628	1950	148621	158440	46675	29718	155970	34255	9771	10911	54768	10368	8979
INF10000 36850	1950	624630	772963	222247	114240	735927	132996	36492	38196	357618	45235	33893
INQAD412 100	1950	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1950	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1950	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1951	100	100	100	100	100	100	100	100	100	100	100
INA10000 3077	1951	16542	57208	12996	8613	8590	5420	5144	199	1147	899	2076
INB10000 10674	1951	33346	116218	58828	40721	35763	14242	7049	199	5204	2240	6586
INC10000 7191	1951	13869	39454	28760	19086	22833	4502	964	127	4610	544	2517
IND10000 6903	1951	13313	37872	27607	18320	21918	4322	925	122	4425	522	2417
INE10000 12311	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310
INF10000 44561	1951	104787	329631	202057	136571	144259	39062	14268	803	26149	5485	19808
INQAD412 100	1951	100	100	100	100	100	100	100	100	100	100	100

TNOADAGA					сур	03_pit12	9.FLO						
INQAD413 100	1951	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1951	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1952	100	100	100	100	100	100	100	100	100	100	100	
INA10000 21941	1952	15269	6229	20312	106196	33309	8586	1038	149	0	61	3848	
INB10000 44782	1952	24386	25447	48508	181164	39031	45318	1423	149	0	61	5193	
INC10000 8299	1952	10868	15772	22429	47240	23845	16873	459	171	0	0	516	
IND10000 7966	1952	10432	15140	21530	45346	22889	16196	441	164	0	0	495	
INE10000 14208	1952	18607	27003	38400	80878	40824	28887	786	292	0	0	883	
INF10000 99366	1952	79538	100745	161461	456724	153136	134496	3941	904	0	90	9734	
INQAD412 100	1952	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1952	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1952	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1953	100	100	100	100	100	100	100	100	100	100	100	
INA10000 16909	1953	12501	16796	13933	19484	92921	939	6803	1210	4340	824	2510	
INB10000 29045	1953	36309	37043	50537	37893	259460	3792	14916	3402	7144	824	6125	
INC10000 15206	1953	18011	20055	41452	19220	128023	4029	6754	3811	2405	56	2787	
IND10000 14596	1953	17288	19251	39790	18449	122890	3868	6483	3658	2308	54	2676	
INE10000 26033	1953	30835	34336	70969	32906	219183	6898	11563	6524	4117	96	4772	
INF10000 103789	1953	125749	135023	240643	132932	895876	21736	49076	20287	20180	1440	20208	

			•		сур	03_pit129	9.FLO					
INQAD412 100	1953	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1953	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1953	100	100	100	100	100	100	100	100	100	100	100
N 513 00	1954	100	100	100	100	100	100	100	100	100	100	100
NA10000 320	1954	34592	10249	4346	3930	34988	7503	82	0	0	1301	1479
NB10000 .1423	1954	53201	29468	14046	15677	51873	31348	82	0	0	2369	8121
NC10000 731	1954	22861	18526	9864	11676	27447	11592	149	0	0	14	3651
ND10000 542	1954	21945	17783	9468	11207	26346	11127	143	0	0	13	3505
NE10000 100	1954	39140	31718	16887	19989	46990	19847	255	0	0	24	6251
INF10000 B5817	1954	170121	117712	60245	69911	186524	92718	717	1	0	3555	26614
NQAD412 .00	1954	100	100	100	100	100	100	100	100	100	100	100
INQAD413 L00	1954	100	100	100	100	100	100	100	100	100	100	100
NQAD512 .00	1954	100	100	100	100	100	100	100	100	100	100	100
N 513 .00	1955	100	100	100	100	100	100	100	100	100	100	100
[NA10000 L348	1955	3909	8712	20726	21377	1715	738	57	1593	807	4091	340
INB10000 1024	1955	14380	38210	57838	73577	8259	2614	2164	3703	807	5612	1073
NC10000 2559	1955	8560	24144	48860	42703	9072	2784	1730	5415	2925	1872	554
IND10000 2457	1955	8217	23176	46901	40991	8709	2672	1661	5198	2808	1797	532
INE10000 4381	1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949

cyp03\_pit129.FLO INF10000 55519 153120 281092 279677 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 25757 175573 32737 123813 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 INC10000 12695 109178 IND10000 12186 104800 

					сур	003_pit12	9.FLO					
INE10000 55926	1957	512	9443	21735	186918	176053	140073	8346	1302	1267	37755	161171
INF10000	1957	3533	41158	89027	713419	636350	526857	37106	4694	12021	150374	703602
220223	1057	100	100	100	100	100	100	100	100	100	100	100
INQAD412 100	1957	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1957	100	100	100	100	100	100	100	100	100	100	100
100 INQAD512	1957	100	100	100	100	100	100	100	100	100	100	100
100	1957	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1958	100	100	100	100	100	100	100	100	100	100	100
INA10000 9779	1958	45440	5670	31795	152128	85637	24521	15670	3599	7617	2544	21997
INB10000 23062	1958	115786	37473	71708	374361	271125	63415	58314	16163	19375	14349	21997
INC10000	1958	58853	26980	28613	71506	151261	17282	20653	2353	6261	7198	4780
8772 IND10000	1958	56493	25898	27466	68638	145196	16589	19825	2259	6010	6909	4588
8421	1938	50493	25898	2/400	08038	145190	10309	19025	2239	0010	0909	4300
INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184
15019 INF10000	1958	406688	163390	220487	020202	1006168	162859	168828	33292	53686	50017	51627
69190	1956	400000	103390	220487	039203	1000100	102039	100020	33292	33080	30017	31027
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100
100 INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100
100	1330	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100
100 IN 513	1959	100	100	100	100	100	100	100	100	100	100	100
100	1000	100	100	100	100	100	100	100	100	100	100	
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868
35067 INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289
55152	1,00	10004	70047	05001	112234	72271	£/£±4	1400	0320	5475	4230	0200
INC10000 21731	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996

cyp03\_pit129.FLO IND10000 INE10000 INF10000 INQAD412 INOAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 91522 116979 

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INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233
55312	1051	50744	46000	55000	50434	7640	11116	22025	1003	2502	3953	10783
IND10000 53094	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	2322	10/03
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232
94697		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0200	70202								
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876
379781												
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100
100 INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100
100 100	1901	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100
100 100												
IN 513	1962	100	100	100	100	100	100	100	100	100	100	100
.00	4040	22620	25600	20424	22725	12000	4070	2624	202	2931	2007	7460
INA10000 7101	1962	33638	25699	28421	22735	12989	4879	2624	292	2931	2007	7400
7101 INB10000	1962	90002	81056	108133	53472	42717	13680	9641	1255	10739	13073	19445
28643	2302	70002	02000									
INC10000	1962	41302	39541	53153	26365	27183	4664	2296	384	1527	3264	4084
7723								2224	260	4465	2422	2020
IND10000	1962	39645	37955	51022	25307	26093	4477	2204	368	1465	3133	3920
7413 INE10000	1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992
13222	1902	70711	07090	J1002	43130	+0550	7505	3331	03.	202.		****
INF10000	1962	298318	278055	372559	184553	171946	38882	23433	3390	21972	32375	45070
73227												
INQAD412	1962	100	100	100	100	100	100	100	100	100	100	100
100	1063	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1962	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1962	100	100	100	100	100	100	100	100	100	100	100
100												
IN 513	1963	100	100	100	100	100	100	100	100	100	100	100
100	4		F0=6		40.405	40040	4444	•	^	•	309	0
INA10000	1963	9929	5878	14341	10426	18910	1444	0	0	0	309	О
826												

cyp03 pit129.FLO INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INOAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 ΙN 

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INA10000 0	1965	8028	46220	19775	7158	24331	11578	384	415	449	0	154
INB10000 0	1965	18833	108430	46393	16791	57079	27161	900	974	1054	0	361
INC10000 605	1965	12049	32040	23480	14544	22544	21179	1464	9	120	31	38
IND10000 547	1965	5034	25764	15645	7651	23660	12824	528	0	184	0	43
INE10000 1083	1965	20628	54855	40199	24900	38596	36260	2507	16	206	113	66
INF10000 2492	1965	76065	288441	162545	83045	174576	124930	7193	<b>1</b> 476	2039	212	686
INQAD412 100	1965	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1965	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1965	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1966	100	100	100	100	100	100	100	100	100	100	100
INA10000	1966	1756	6176	4745	138284	103327	4307	125	201	2160	1934	3102
5161 INB10000	1966	4119	14490	11131	324412	242403	10104	293	471	5066	4538	7277
12107 INC10000	1966	1680	4897	3591	159318	113530	2358	257	411	1177	661	1248
2683 IND10000	1966	1664	3313	2482	178898	84637	1087	73	82	525	535	1514
2567 INE10000	1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136
4594 INF10000	1966	12811	41010	30821	1117124	812643	24362	1462	2342	12195	9347	15743
28624 INQAD412	1966	100	100	100	100	100	100	100	100	100	100	100
100 INQAD413	1966	100	100	100	100	100	100	100	100	100	100	100
100 INQAD512 100	1966	100	100	100	100	100	100	100	100	100	100	100

cyp03 pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 28802 112683 INE10000 54361 163001 INF10000 INOAD412 INQAD413 

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					сур	03_pit12	9.FLO					
INQAD512 100	1968	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1969	100	100	100	100	100	100	100	100	100	100	100
INA10000 4942	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048
INB10000 28641	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770
INC10000 15521	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176
IND10000 15430	1969	12224	56748	75881	57363	35774	3775	197	0	0	0	5324
INE10000 18077	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065
INF10000 91910	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842
INQAD412 100	1969	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1969	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1969	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1970	100	100	100	100	100	100	100	100	100	100	100
INA10000 1733	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983
INB10000 9724	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287
INC10000 4697	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520
IND10000 2517	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388
INE10000 5843	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689
INF10000 29924	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792
INQAD412 100	1970	100	100	100	100	100	100	100	100	100	100	100

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INQAD413 100	1970	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1970	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1971	100	100	100	100	100	100	100	100	100	100	100
INA10000 47949	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790
INB10000 71949	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612
INC10000 16580	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867
IND10000 20267	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571
INE10000 20411	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617
INF10000 160873	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908
INQAD412 100	1971	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1971	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1971	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1972	100	100	100	100	100	100	100	100	100	100	100
INA10000 22253	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900
INB10000 51060	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463
INC10000 31893	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942
IND10000 23601	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034
INE10000 51367	1972	55802	24585	16776	6895	5856	3775	1956	0	520	4521	25702
INF10000 198353	1972	247696	103902	76537	39728	24516	20347	20287	734	13712	13799	110912

					сур	03_pit12	9.FLO						
INQAD412 100	1972	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1972	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1972	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1973	100	100	100	100	100	100	100	100	100	100	100	
INA10000 43676	1973	29332	25393	75060	85083	20070	29548	1491	912	3616	17587	64229	
INB10000 110506	1973	54925	63968	190340	267839	38236	71666	1491	2412	12342	37605	129727	
INC10000 72548	1973	28122	33041	82869	119369	24972	37704	5036	995	9883	25530	43304	
1ND10000 60365	1973	25124	30975	83482	157256	17182	51858	2498	854	21007	24938	53961	
INE10000 135374	1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	
INF10000 470229	1973	179822	229436	573228	932962	172407	302074	18732	7672	82735	171501	360115	
INQAD412 100	1973	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1973	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1973	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1974	100	100	100	100	100	100	100	100	100	100	100	
INA10000	1974	50748	16594	6657	71771	9611	34032	870	4421	66183	14013	92424	
53192 INB10000	1974	111481	54480	35324	149529	26629	95157	5822	8941	115941	37321	210102	
121841 INC10000	1974	49316	33311	21527	62076	16191	78580	1995	1745	34600	15539	79975	
50468 IND10000	1974	34550	23741	23682	34158	12847	53806	1111	1161	36449	15068	89661	
53394 INE10000 93367	1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	
7001													

cyp03\_pit129.FLO INF10000 376053 217600 152074 380408 111674 436793 300146 109745 593105 INOAD412 INQAD413 INOAD512 IN INA10000 INB10000 206821 147102 INC10000 IND10000 INE10000 59428 132265 INF10000 248464 632912 406998 238792 515741 152507 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 

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INE10000	1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574
25176 INF10000 92809	1976	101972	90764	279532	99703	151606	41367	95673	5146	6695	5143	8488
INQAD412 100	1976	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1976	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1976	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1977	100	100	100	100	100	100	100	100	100	100	100
INA10000 2729	1977	2891	37018	52131	51556	3156	1143	0	887	0	0	2902
INB10000 14967	1977	15058	92488	104229	113228	19453	6092	0	2879	5182	0	14597
INC10000 17501	1977	15073	48068	49445	62201	8172	3950	238	405	323	66	5940
IND10000 8589	1977	10943	53343	60751	57196	5803	2459	245	5377	5044	963	5174
INE10000 12636	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	6161
INF10000 66606	1977	83401	348474	360911	409089	72725	21309	925	15846	17827	1589	39427
INQAD412 100	1977	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1977	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1977	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1978	100	100	100	100	100	100	100	100	100	100	100
INA10000 2050	1978	9239	8957	23608	1819	9836	0	0	0	0	0	2969
INB10000 7748	1978	27973	30163	63702	15145	33285	2855	0	0	0	0	3796
INC10000 8371	1978	23372	25607	36204	13555	27025	3713	55	3	2	0	1200

cyp03\_pit129.FLO IND10000 INE10000 INF10000 1978 107109 126093 215948 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 580681 378453 INQAD412 INOAD413 INQAD512 · 100 IN INA10000 INB10000 

					сур	03_pit12	9.FLO					
INC10000 6494	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269
IND10000 2148	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374
INE10000 3809	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406
INF10000 31304	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933
INQAD412 100	1980	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1980	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1980	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1981	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591
1677 INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622
7752 INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629
7489 IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387
5102 INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594
10941 INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503
38663 INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100
100 INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100
100 INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100
100 IN 513	1982	100	100	100	100	100	100	100	100	100	100	100
100 INA10000 102460	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920

												~
					~	.O						
INB10000 164549	1982	18892	30960	30526	33162	003_pit12 81879	35067	4659	0	0	0	15955
INC10000 61906	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430
IND10000 32555	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161
INE10000 57993	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156
INF10000 420051	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334
INQAD412 100	1982	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1982	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1982	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1983	100	100	100	100	100	100	100	100	100	100	100
INA10000 2457	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0
INB10000 5349	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0
INC10000 10916	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806
IND10000 4534	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581
INE10000 22561	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583
INF10000 57336	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051
INQAD412 100	1983	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1983	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1983	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1984	100	100	100	100	100	100	100	100	100	100	100

					сур	03_pit129	9.FLO					
INA10000 28047	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074
INB10000 49544	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974
INC10000 27152	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204
IND10000 7321	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515
INE10000 18082	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791
INF10000 139961	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081
INQAD412 100	1984	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1984	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1984	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1985	100	100	100	100	100	100	100	100	100	100	100
INA10000 52840	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448
INB10000 92542	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956
INC10000 46966	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702
IND10000 39581	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331
INE10000 75263	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435
INF10000 317156	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972
INQAD412 100	1985	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1985	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1985	100	100	100	100	100	100	100	100	100	100	100

cyp03\_pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 35327 123391 INB10000 66351 232533 INC10000 IND10000 INE10000 INF10000 1375 126837 INQAD412 INQAD413 

					сур	03 pit12	9.FLO						
INQAD512 100	1987	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1988	100	100	100	100	100	100	100	100	100	100	100	
INA10000 16240	1988	40466	35480	33607	16300	934	0	0	0	0	37	38739	
INB10000 46012	1988	67973	80168	73280	45724	5215	489	746	0	0	3621	38739	
INC10000 30557	1988	47277	36247	41830	26642	3324	466	1157	94	0	397	8773	
IND10000 6295	1988	33952	34156	43518	19391	1809	430	1015	0	0	0	2913	
INE10000 10486	1988	84765	54719	69041	36635	3895	434	1283	0	0	406	6637	
INF10000 128556	1988	295366	252717	271938	160964	18362	2051	4705	139	0	6533	79962	
INQAD412 100	1988	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1988	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1988	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1989	100	100	100	100	100	100	100	100	100	100	100	
INA10000 689	1989	19807	68523	50439	23561	92550	31861	2908	0	0	0	0	
INB10000 1616	1989	39666	122602	137096	66777	195291	58001	10254	0	0	0	0	
INC10000	1989	28656	45684	74638	50854	71542	35279	19627	4792	944	430	1607	
3813 IND10000	1989	16591	40480	31901	31506	88387	12112	5583	526	0	0	97	
102 INE10000	1989	27768	76079	129853	85067	148213	43689	22416	4776	1053	1039	3025	
3667 INF10000	1989	141899	360858	504428	299328	612908	202265	77228	14129	2949	2169	6840	
13432 INQAD412 100	1989	100	100	100	100	100	100	100	100	100	100	100	

INQAD413 100	1989	100	100	100	сур 100	003_pit12 100	9.FLO 100	100	100	100	100	100
INQAD512 100	1989	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1990	100	100	100	100	100	100	100	100	100	100	100
INA10000 32067	1990	22820	25971	109708	57230	52990	13392	0	3174	3779	1446	29055
INB10000 75229	1990	53536	60927	257372	134260	124313	31417	0	7445	8865	3393	68163
INC10000 32288	1990	30645	35540	98738	61045	34243	13666	884	1279	1296	5455	23255
IND10000 39666	1990	36797	32309	82854	77498	50708	21903	847	334	2294	4169	34402
INE10000 65890	1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479
INF10000 256073	1990	207147	243758	651258	446137	330134	128503	5372	15862	21232	23484	206588
INQAD412 100	1990	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1990	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1990	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1991	100	100	100	100	100	100	100	100	100	100	100
INA10000 51231	1991	72764	46565	25841	38421	68597	25991	3177	0	1346	6656	25795
INB10000 120188	1991	170703	109239	60622	90135	160928	60975	7453	0	3158	15615	60515
INC10000 61849	1991	92714	52766	38488	62785	118917	25628	2857	3059	10274	2012	38194
IND10000 46350	1991	78313	47431	28963	49010	67836	18616	1657	661	883	971	12686
INE10000 86523	1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789
INF10000 396587	1991	630674	340150	262318	413693	629705	194234	27429	11726	25049	27966	177941

					cype	3_pit12	9.FLO						
INQAD412 100	1991	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1991	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1991	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1992	100	100	100	100	100	100	100	100	100	100	100	
INA10000 68144	1992	26432	40166	64358	6937	12747	38511	37693	15331	6776	0	17262	
INB10000 159863	1992	62008	94228	150982	16275	29903	90345	88427	35966	15897	0	40497	
INC10000 69499	1992	30938	70852	64891	16247	15610	19523	35419	9354	9993	3108	24093	
IND10000 69739	1992	24744	40623	57305	10893	7366	20303	26129	4103	5382	2334	24192	
INE10000 116701	1992	63027	102423	128086	24818	13262	20303	42286	4530	6255	3410	33261	
INF10000 511037	1992	230328	395028	507931	84675	86793	192225	245330	73613	47469	9625	144498	
INQAD412 100	1992	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1992	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1992	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1993	100	100	100	100	100	100	100	100	100	100	100	
INA10000 15998	1993	65685	30669	51779	26262	14410	13668	155	1181	744	37157	8727	
INB10000 37531	1993	154096	71949	121472	61610	33805	32064	364	2772	1744	87169	20472	
INC10000 17438	1993	66252	27187	52978	26068	13172	17228	2599	1710	473	18918	14840	
IND10000 10654	1993	73643	33922	46469	20207	18405	23421	2677	3064	67	25275	9390	
INE10000 15661	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	

cyp03\_pit129.FLO 1993 483274 233388 399517 INF10000 196845 111821 176598 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 108697 168819 77121 176987 INQAD412 INOAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 

					сур	03_pit129	9.FLO					
INE10000 4209	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636
INF10000 17034	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843
INQAD412 100	1995	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1995	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1995	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1996	100	100	100	100	100	100	100	100	100	100	100
INA10000 26864	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555
INB10000 63022	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990
INC10000 40490	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489
IND10000 21277	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501
INE10000 54139	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542
INF10000 232805	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947
INQAD412 100	1996	100	100	100	100	100	100	100	100	100	100	100
INQAD413 100	1996	100	100	100	100	100	100	100	100	100	100	100
INQAD512 100	1996	100	100	100	100	100	100	100	100	100	100	100
IN 513 100	1997	100	100	100	100	100	100	100	100	100	100	100
INA10000 20292	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996
INB10000 47604	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721
INC10000 21475	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715

					сур	03 pit12	9.FLO						
IND10000 32643	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	
INE10000 32654	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	
INF10000 150230	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	
INQAD412 100	1997	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1997	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1997	100	100	100	100	100	100	100	100	100	100	100	
IN 513 100	1998	100	100	100	100	100	100	100	100	100	100	100	
INA10000 38400	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	
INB10000 90087	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	
INC10000 42941	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	
IND10000 45247	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	
INE10000 70919	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	
INF10000 301173	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	
INQAD412 100	1998	100	100	100	100	100	100	100	100	100	100	100	
INQAD413 100	1998	100	100	100	100	100	100	100	100	100	100	100	
INQAD512 100	1998	100	100	100	100	100	100	100	100	100	100	100	

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cyp03\_pit129-Baseline

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Cypress Water Availability Modeling
    Full Authorized Diversions, No Return Flows
Т3
    Updated 6/18/2015 KA
**
**
    General Comments
**
**
**
JD
      51
            1948
                        1
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                         0
                                                                                 3
                                                                                         0
                                                                                                 0
                                                                                                         0
   JO
RO
      -1
**
**FY
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            241800
                       1000
                                100
                                                             FYLOTP
**FY
       1.0
             48500
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                                                                BOB
**FY
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**FY
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**
**
    Monthly Water Use Factors
**
UC
    5813
              60
                      60
                              60
                                       60
                                               76
                                                       76
UC
              76
                      76
                              76
                                       60
                                               60
                                                       60
UC
     MUN
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                   0.070
                           0.075
                                    0.076
                                            0.084
                                                    0.091
UC
           0.100
                   0.100
                           0.089
                                    0.085
                                            0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                            0.081
                                                    0.077
UC
           0.109
                   0.109
                           0.104
                                   0.084
                                           0.072
                                                    0.076
UC
     IRR
           0.000
                   0.001
                           0.004
                                   0.013
                                           0.051
                                                    0.162
UC
           0.200
                   0.241
                           0.142
                                   0.097
                                           0.053
                                                    0.038
UC
     MIN
           0.079
                   0.080
                           0.084
                                   0.080
                                           0.081
                                                    0.077
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                           0.090
                                                    0.087
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cvp03 pit129-Baseline
                                           0.083
                                                    0.083
UC
     REC
           0.083
                   0.083
                           0.083
                                   0.083
UC
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                                   0.083
                                           0.083
                                                    0.083
           0.083
                           0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
UC
           0.083
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                           0.083
                                   0.083
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                             2.0
                                      2.0
                                              2.0
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UC CONST
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                                              1.0
                                                      1.0
UC
                                               31
                                                       30
                   28.25
                              31
                                       30
UC MONTH
              31
                                               30
                                                       31
UC
              31
                      31
                              30
                                       31
**
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
                                                     NONE
CPTCUSBC A10000
                                        7
                                                     NONE
CPPPDISC TCUSBC
** Carollo add additional control point for modeling of pit 129
                                                      513
CP585100 585005
                                        7
**TXU app 5850, 6/24/05, kb
                                        7
                                                     NONE
CP585008 A10120
                                        7
                                                      513
CP585037 A10120
                                        7
                                                     NONE
CP585009 A10120
                                                     NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
                                                        513
**CP585031 A10000
                                          7
                                          7
                                                       NONE
**CP585007 A10000
                                          7
                                                       NONE
**CP585006 A10000
                                        7
                                                      513
CP585031 PPDISC
                                        7
                                                     NONE
CP585007 PPDISC
                                        7
CP585006 PPDISC
                                                     NONE
                                        7
                                                      513
CP585036 585034
                                                      513
                                        7
CP585034 585033
                                        7
                                                      513
CP585033 585032
                                        7
                                                      513
CP585035 585032
CP585032 585005
                                                      513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
```

	cyp03_pit129-Baselin
**CP585005 A10000	7 NONE
**CP585004 A10000	7 NONE
**CP585003 A10000	7 NONE
**CP585002 A10000	7 NONE
**CP585001 A10000	7 NONE
CP585005 PPDISC	7 NONE
CP585004 TCUSBC	7 NONE
CP585003 TCUSBC	7 NONE
CP585002 TCUSBC	7 NONE
CP585001 TCUSBC	7 NONE
CP585011 A10070	7 NONE
CP585012 A10010	7 NONE
CP585013 A10010	7 NONE
$^{stst}$ add control points for A58	, NONE
CP581431 581432	
CP581432 A10260	es
CP581433 A10240	£
** add control points for A58	7 QAD413
CP581301 D10000	
CP581302 D10000	_
CP581303 D10000	
** additional CPs for C4582,	
CP458232 B10170	
CP458237 B10170	7 B10170 7 B10170
**	7 B10170
CPA10370 A10340	7 QAD413
CPA10350 A10340	7 QAD413
CPA10340 A10300	7
**CPA10300 A10000	, 7 NONE
CPA10300 A10200 **	7 NONE
CPA10290 A10200	7 NONE
CPA10280 A10240	7 QAD413
CPA10260 A10240	7 QAD413
**CPA10240 A10000	7

## cyp03\_pit129-Baseline

CPA10240 A10200	7		
CPA10200 A10000	7		
** Carollo modify existing CPs to	include new	tracking CP for F	Pit 129 analyses
**CPA10120 A10000	7	513	
**CPA10100 A10000	7	513	
**CPA10090 A10000	7	513	
CPA10120 TCUSBC	7	513	
CPA10100 TCUSBC	7	513	
CPA10090 TCUSBC	7	513	
CPA10070 A10010	7	513	
CPA10060 A10010	7	513	
CPA10050 A10010	7	513	
CPA10040 A10010	7	513	
CPA10030 A10010	7	QAD413	
CPA10020 A10010	7	NONE	
CPA10010 A10000	7	513	
CPA10000 B10150	0	NONE	
CPB10320 B10310	7	QAD413	
CPB10310 B10150	7	NONE	
CPB10300 B10150	7	QAD413	
CPB10290 B10150	7	QAD413	
CPB10270 B10150	7		
CPB10260 B10150	7	QAD413	
CPB10250 B10150	7	QAD413	
CPB10230 B10170	7	513	
CPB10220 B10230	7	513	
CPB10210 B10150	7	513	
CPB10200 B10150	7	513	
CPB10180 B10170	7	513	
CPB10170 B10150	7		
CPB10150 B10040	7	NONE	
CPB10120 B10040	7	513	
CPB10110 B10040	7	513	
CPB10100 B10040	7	513	
CPB10090 B10040	7	513	

CDD44444 =		cyp03_pit129-Baseline
CPB10080 B10040	,	513
CPB10070 B10040		
CPB10050 B10040	,	QAD413
**CPB10040 B100	•	NONE
CPB10040 B10000	,	
CPB10000 F10230	•	NONE
CPC10050 C10010	•	QAD413
CPC10040 C10010	•	QAD413
CPC10030 C10010	,	QAD413
CPC10010 C10000	,	QAD413
CPC10000 F10180	•	NONE
CPD10190 D10000	,	QAD412
CPD10180 D10000	,	QAD412
CPD10170 D10160	•	QAD412
CPD10160 D10150	•	513
CPD10150 D10130	7	513
CPD10140 D10130	7	QAD412
CPD10130 D10000	7	QAD412
CPD10120 D10000	7	QAD412
CPD10110 D10000	7	QAD412
CPD10090 D10000	7	QAD412
CPD10080 D10000	7	QAD412
CPD10070 D10000	7	QAD413
CPD10060 D10000	7	QAD413
CPD10050 D10000	7	NONE
CPD10040 D10000	7	QAD413
CPD10030 D10000	7	QAD413
CPD10020 D10000	7	QAD413
CPD10010 D10000	7	QAD413
CPD10000 E10060	0	NONE
CPE10090 E10080	7	513
CPE10080 E10060	7	513
CPE10070 E10060	7	513
CPE10060 E10040	7	QAD412
CPE10050 E10040	7	QAD412
		=

		, <u> </u>	
CPE10040	E10000	7 NONE	
CPE10020	E10010	7 513	3
CPE10010	E10000	7 QAD412	
CPE10000	F10160	0 NONI	
CPF10250	F10230	7 QAD512	
CPF10240	F10230	7 513	3
CPF10230	F10220	7 NONI	
CPF10220	F10210	7 NONI	Ē
CPF10210	F10190	7 NONI	Ξ
CPF10190	F10130	7 NONI	
CPF10180	F10170	7 NON	
CPF10170	F10130	7 NON	
CPF10160	F10130	7 NON	E
CPF10140	F10130	7 NON	
CPF10130	F10080	7 NON	
CPF10120	F10080	7 51:	
CPF10110	F10080	7 51	
CPF10100	F10080	7 QAD51:	
CPF10090	F10080	7 QAD41:	
CPF10080	F10005	7 51	3
CPF10030	F10020	7 QAD41	2
CPF10020	F10005	7 51	3
CPF10005	F10000	7	
CPF10000	OUT	0 NON	E
CP 10050	10040	7 QAD41	3
CP 10040	10010	7 QAD41	3
CP 10020	10010	7 QAD41	
CP 10010	OUT	7 NON	E
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	2 NONE NON	
CPSULPHR	OUT	2 NONE NON	
CPA240DM	OUT	2 NONE NON	E

```
cyp03_pit129-Baseline
CPB270DM
           OUT
                                  2
                                       NONE
                                              NONE
CPB70DUM
           OUT
                                  2
                                       NONE
                                              NONE
CPB20MUN
           OUT
                                  2
                                       NONE
                                              NONE
CPAVNGER
           OUT
                                  2
                                       NONE
                                              NONE
CPDNGRFD
           OUT
                                  2
                                       NONE
                                              NONE
CPHGHSPR
           OUT
                                  2
                                       NONE
                                              NONE
CPJEFFSN
           OUT
                                  2
                                       NONE
                                              NONE
CPLVGSTN
           OUT
                                  2
                                       NONE
                                              NONE
CPORECTY
           OUT
                                       NONE
                                              NONE
**
CPA-ZERO
           OUT
                                       ZERO
                                              ZERO
**
   Water Rights and Associated Reservoir Storage Information
** Carollo add water right for modeling of pit 129
**WR585100
                    IND20181231 1
                                                               104000PT129
                                                                           PT129
**WSPIT129
            5355
**
**TXU app 5850, 6/24/05, kb
WR585001
                  IND20041231
            50
                              1
                                                             10405850001
                                                                          5850
WR585002
                  IND20041231
                              1
                                                             10405850002
                                                                          5850
S0
                              BACKUP
WR585003
                  IND20041231
                              1
                                                             10405850003
                                                                          5850
S0
                              BACKUP
WR585004
             0
                  IND20041231
                              1
                                                             10405850004
                                                                          5850
S0
                              BACKUP
WR585005
             0
                  IND20041231
                              1
                                                             10405850005
                                                                          5850
S0
                              BACKUP
WR585006
                  IND20041231
                              1
                                                             10405850006
                                                                          5850
S0
                              BACKUP
WR585007
             0
                  IND20041231
                              1
                                                             10405850007
                                                                          5850
S0
                              BACKUP
WR585008
             0
                  IND20041231
                              1
                                                             10405850008
                                                                          5850
```

SO SO			BACKUP		
WR585009	0	IND20041231	1	10405850009 585	0
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010 585	0
S0			BACKUP		
WR585011	0	IND20041231	1	10405850011 585	0
S0			BACKUP		
WR585012	0	IND20041231	1	10405850012 585	0
SO			BACKUP	•	
WR585013	0	IND20041231	1	10405850013 585	0
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307 585	0
WSR58507	525.6	0.979 0.5841			
WR585031	. 0	IND20041231	1	10405850301 585	9
WSR58501	271.4	0.979 0.5841			
WR585036	0	IND20041231	1	10405850306 585	9
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304 585	0
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303 585	9
WSR58503	287.3	0.979 0.5841			
WR585035	0	IND20041231	1	10405850305 585	9
WSR58505	604.8	0.4012 0.856			
WR585032	0	IND20041231	1	10405850302 585	90
WSR58502	245.1	0.979 0.5841			
**					
** APPLICA			_	40407044004	
WR581431	0	OTHER20031028	1	10405814301	
WS HR9	356	0.979 0.5841	_	40405044300	
WR581432	0	OTHER20031028	1	10405814302	
WS HR21	263	0.979 0.5841	_	40405044303	
WR581433	0	OTHER20031028	1	10405814303	
WS HR10	1495	0.4012 0.856			
** APPLICA			4	10405043004	
WR581301	685	581320031001	1	10405813001	-

				cyp03_pit129-Baseline		
WR581303	0	581320031001	1	">FEGURE SUBSTITUTE	10405813003	
S0			BACKUP		10403013003	
WR581302	0	581320031001	1		10405813002	
SO			BACKUP		10103013002	
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0		_0.0.05.1501	7224
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0		10 10 1334302	4334
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0		20101334303	4334
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM	130	0.979 0.5841	0		10-10-10-10-10-10-10-10-10-10-10-10-10-1	4554
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH	5	0.979 0.5841	0		20104334303	4224
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0		10404554500	4334
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0		10-10-133-1307	4334
WRF10080	2343	MUN19830418	1	1	10404349001	4349
WSF10080	8.29	0.979 0.5841	0	-	10404545001	4343
S0	3293.45	2343				
WRF10080	1281	IND19830418	1	1	10404349002	4349
WSF10080	8.29	0.979 0.5841	0	-	10707373002	4343
S0	3293.45	1281				
WRB10250	0	REC19841127	1		10404522301	
WSB10250	380	0.979 0.5841	0		10404322301	
WRF10180	202.5	IRR19841218	1	1	10404525101	
WRA10370	0	REC19750106	1	-	60404558301	
WSA10370	350	0.979 0.5841	0		10505540400	
WRA10350	0	REC19751215	1		60404559301	
WSA10350	230	0.979 0.5841	0		20-10-10-10-10-10-10-10-10-10-10-10-10-10	
4.4						

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<sup>\*\*</sup> Lake Cypress Springs

**					
WRA10340 WSLKCYPS **	10500 72800	MUN19700720	1	60404560301	4560 CYPRESS
WRA10340 WSLKCYPS **	1000 72800	MUN19660131	1	60404560302	4560 CYPRESS
WRA10340 WSLKCYPS **	210 72800	IRR19700720	1	60404560303	4560 CYPRESS
WRA10340 WSLKCYPS **	3590 72800	IND19700720	1	60404560304	4560 CYPRESS
WRA10340 WSLKCYPS **	0 72800	REC19660131	1	60404560305	4560 CYPRESS
WRA10300	11.61	IRR19630831	1	60404561001	
	24.0	IRR19630801	1	60404562002	
WRA10290 ** **	24.0	18813030801	1	00404502002	
** Lake ** **	Monticello				
WRA10240 WSLKMONT	15300 40100	IND19700406	1	60404563301	4563
WRA10240 WSLKMONT ** **	1000 40100	IND19730604	1	60404563302	4563
** Lake	Bob Sandlir	n			
**	DOD DUNGTIN	•			
WRA10200	10000	MUN19711220	1	60404564301	4564 BOB

WSBOBSAN **	213350			cypo3_piti29-Baseline		
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1	60404564302	2 4564	ВОВ
WRA10200 WSBOBSAN **	10900 213350	IND19711220	1	60404564303	3 4564	ВОВ
WRA10200 WSBOBSAN ** LOTP W		REC19711220 M BOB SANDLIN -	1	60404564305	5 4564	ВОВ
WRA10200 WSBOBSAN	1930 213350	MUN19711220	1	2MEMBERSFRMBOE	3 4590	BOB LOTPBOB
WRA10200 WSBOBSAN	10000 213350	M BOB SANDLIN - IND19711220	1	1TXU_MONTE		BOB LOTPBOB
** REMAIN  ** BOB SA	ING AUTHO NDLIN STO	ORIZATION OF BOE ORAGE, INFLOWS (	SANI	LIN WATER RIGHT. NOTE THAT THIS AUTH WAS D	EEMED TO	NOT HAVE ACCESS TO
WRA10200 **	19600	IND19780313	1	60404564304	4564	BOBROR
** =====						
	======	=======================================	====:	=======================================		
MUNTOTZO	1080	MUN19550822	===== 1	======================================		
WRA10120 WSTANKSL WRA10120	2700	MUN19550822 0.4012 0.856	1	0 60404565301	. 4565	
WSTANKSL	2700 550	MUN19550822	1 1	60404565301 60404565302	. 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120	2700 550 2700 0	MUN19550822 0.4012 0.856 IND19550822 0.4012 0.856 REC19550822	1	0 60404565301 0 60404565302	. 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL	2700 550 2700 0 2700	MUN19550822 0.4012	1	60404565301 60404565302	4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090	2700 550 2700 0 2700 21.44	MUN19550822 0.4012	1	60404565301 60404565302 60404565303 60404566301	4565 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090 WSA10090	2700 550 2700 0 2700 21.44 0.23	MUN19550822 0.4012	1 1 1	60404565301 60404565302 60404565303 60404566301	4565 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090	2700 550 2700 0 2700 21.44 0.23	MUN19550822 0.4012  0.856 IND19550822 0.4012  0.856 REC19550822 0.4012  0.856 IRR19591231 0.979  0.5841 IRR19561231	1 1 1	60404565301 60404565302 60404565303 60404566301 60404567301	4565 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090 WSA10090 WRA10100	2700 550 2700 0 2700 21.44 0.23	MUN19550822 0.4012	1 1 1	60404565301 60404565302 60404565303 60404566301 60404567301	4565 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090 WSA10090 WRA10100 WSA10100 WSA10100 WSA10050	2700 550 2700 0 2700 21.44 0.23 6 5 7.5	MUN19550822 0.4012  0.856 IND19550822 0.4012  0.856 REC19550822 0.4012  0.856 IRR19591231 0.979  0.5841 IRR19561231 0.979  0.5841	1 1 1 1	60404565301 60404565302 60404565303 60404566301 60404567301	4565 4565 4565	
WSTANKSL WRA10120 WSTANKSL WRA10120 WSTANKSL WRA10090 WSA10090 WRA10100 WSA10100	2700 550 2700 0 2700 21.44 0.23 6 5 7.5 35 400	MUN19550822 0.4012  0.856 IND19550822 0.4012  0.856 REC19550822 0.4012  0.856 IRR19591231 0.979  0.5841 IRR19561231 0.979  0.5841 IRR19631231	1 1 1 1	60404565301 60404565302 60404565303 60404566301 60404567301 60404568301	4565 4565 4565	

cyp03	_pit129-l	Baseline
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					cyp03_pit129-Baseline		
WRA10070	0	REC19380317	1			60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0			
WRA10060	144	MUN19750120	1			60404570301	4570
WSOLDCTY	100	0.979 0.5841		0			
WRA10060	0	REC19750120	1			60404570302	4570
WSOLDCTY	100	0.979 0.5841		0			
WRA10040	4	IRR19631231	1			60404571301	
WSA10040	12	0.979 0.5841		0			
WRA10030	4.4	IRR19631231	1			60404572301	
WSA10030	10	0.979 0.5841		0			
WRE10020	25.3	IND19850604	1			10404573301	
WSE10020	42	0.979 0.5841		0			
WRA10010	11	IRR19551231	1			60404573001	
WRB10320	0	IRR19511231	1			60404574001	4574
WSOFF320	5.0	0.979 0.5841		0			
SO	5.43	1.40					
WRB10320	1.4	IRR19511231	1			60404574301	4574
WSB10320	0.5	0.979 0.5841		0			
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0						
SO	5.43	1.40					
WRB10290	0	REC19730430	1			60404575301	
WSB10290	80	0.979 0.5841		0			
**							
**							
**							
	Reservo		_			60404576301	4576
WRB10270	11000	IND19730910	1			004045/0301	4376
WS WELSH	23587						
**							
**	•	DEC40730040	1			60404576302	4576
WRB10270	0	REC19730910	1			00404370302	7370
WS WELSH **	23587						
**							

```
WRB10230
             124
                     IRR19500930
                                   1
                                                                      60404577301
WSB10230
                   0.979 0.5841
              96
                                       0
WRB10220
               6
                     IRR19521231
                                   1
                                                                      60404578301
WSB10220
                   0.979 0.5841
               1
                                       0
WRB10210
              75
                     IRR19531231
                                                                      60404579301
WSB10210
                   0.979 0.5841
              64
                                       0
WRB10200
                     IRR19581231
               2
                                                                      60404580301
WSB10200
             0.5
                   0.979 0.5841
                                       0
WRB10180
               0
                     REC19690922
                                                                      60404581301
WSB10180
             510
                   0.979 0.5841
                                       0
**
**
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
** Ellison Creek Reservoir
**
WRB10170
            2000
                     MUN19720508
                                   1
                                                                     60404582001
                                                                                     4582 ELLISON
WSELLISN
           24700
**
WRB10170
           21000
                     IND19421130
                                   1
                                                                      60404582002
                                                                                     4582 ELLISON
          24700
WSELLISN
** Fill from Cypress Creek at priority
WRB10170
                        19421130
                                  1
                                                                     60404582004
                                                                                     4582 ELLISON
WSELLISN
           24700
S0
                   26000 B10150
**
** Miscellaneous impoundments on Barnes Cr etc.
**
WR458232
                  OTHER19720508
                                                                                    4582 barnes
                                                                      60404582303
WSBARNES
           24000 0.4012
                          0.856
                                       0
WR458232
                   OTHER19720508
                                                                          4582BU
                                                                                    4582 barnes
WSBARNES
           24000
SO
                          458237 BACKUP
**
```

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**					
WRB10120	38.3	IRR19620731	1		60404583301
WSB10120	4.79	0.979 0.5841		0	
WRB10110	14.2	IRR19480930	1		60404584301
WSB10110	60	0.979 0.5841		0	
WRB10100	0.56	IRR19550331	1		60404585301
WSB10100	50	0.979 0.5841		0	
WRB10090	1	IRR19641231	1		60404586301
WSB10090	12	0.979 0.5841		0	
WRB10080	150	IRR19561231	1		60404587301
WSSIMPSN	2500	0.4012 0.856		0	
**					
** 					
**			_		•
		oir (aka Johnson		ervoıı	
WRB10070	6668	IND19600504	1		60404588301 4588
WSJOHNSN **	10100				
	0	REC19600504	4		60404588302 4588
WRB10070 WSJOHNSN	0 10100	KEC19000504	1		00404388302 4388
** M2JQUN2N	10100				
**					
WRB10050	0	REC19751208	1		60404589301
WSB10050	240	0.979 0.5841	_	0	00 10 100000
**	2.40	0.373 0.3011		Ū	
**					
** Lake C	)'the Pi	nes			
		 .===============================	====	=====	
** REDUCE	LOTP DE	MAND FOR PORTION	OF I	WATER	AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040	40070	MUN19570916	1		1MUN 4590 FYLOTP
WSLKOPNS	251000	-1			
WRB10040	151800	IND19570916	1		2IND 4590 FYLOTP
WSLKOPNS	251000				
** ======	=== <b>==</b>		====	=====	
**					

					cyp03_pit129-Baseline
WRF10250	8	IRR19670430	1		1 60404591301
WSF10250	6	0.979 0.5841		0	1 00404231301
WRF10230	96.88	IRR19690930	1		1 60404592001
WRF10240	85	IRR19620531	1		1 60404593301
WSF10240	100	0.979 0.5841		0	1 00404333301
WRF10220	1080	IRR19550103	1		1 60404594002
WRF10210	2000	MUN19630218	1		1 60404595001
WRF10190	80.21	IRR19570319	1		1 60404596001
WRC10040	25	IRR19760621	1		60404597301
WSC10040	35	0.979 0.5841		0	00404337301
WRC10030	10	IND19700126	1		60404598301
WSC10030	5	0.979 0.5841		0	004042501
WRC10010	47	IRR19530731	1		60404599001
WSC10010	7	0.979 0.5841		0	199665-9400
S0	40.42	47			
WRF10170	62.5	IRR19660630	1		1 60404600001
WRD10090	0	REC19461121	1		60404601301
WSD10090	135	0.979 0.5841		0	00404001301
WRD10080	0	REC19600211	1		60404602301
WSD10080	1414	0.4012 0.856		0	30404002301
WRD10070	0	REC19730312	1		60404603301
WSELWOOD	116	0.979 0.5841		0	00+0+005301
WRD10060	7.03	IRR19670630	1		60404604301
WSD10060	28	0.979 0.5841		0	30-10-100-1301
WRD10030	0	REC19741209	1		60404605301 4605
WSD10030	36	0.979 0.5841		0	4003
WRD10040	0	REC19741209	1		60404605302 4605
WSD10040	114	0.979 0.5841		0	4003
WRD10020	0	REC19740812	1		60404606301
WSD10020	294	0.979 0.5841		0	001010000
WRD10010	0	REC19740812	1		60404607301
WSD10010	330	0.979 0.5841		0	00.00,001
WRE10070	18.2	IRR19520630	1		60404608301
WSE10070	20	0.979 0.5841		0	
WRE10060	15	IND19680318	1		60404609001 4609

WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			
WR 10020	0	REC19470922	1		•	60404621301	
WS 10020	160	0.979 0.5841		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.5841		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.5841		0	_		
WRF10100	0	REC19861125	1	_	1	10405112301	
WSF10100	277	0.979 0.5841		0		40405467334	
WRA10280	0	IND19880121	1	_		10405167301	
WSPONDH1	477	0.979 0.5841		0		4040-040	
WRB10300	0	IRR19890112	1			10405212301	

cyp03\_pit129-Baseline WSB10300 0.09 0.979 0.5841 WRB10260 IRR19890810 WSB10260 0.979 0.5841 IFD10110 CONST19891214 1025.6 IF5272 \*\* WRD10110 MUN19891214 WSLKGILM WRD10110 REC19891214 WSLKGILM WRF10090 REC19900710 WSF10090 0.979 0.5841 WRA10260 IND19950522 WSPONDH4 173.7 0.979 0.5841 WRE10080 REC19950801 WSE10080 0.979 0.5841 WRE10090 IRR19980320 WSE10090 55.6 0.979 0.5841 WRE10090 REC19980320 WSE10090 0.979 0.5841 55.6 \*\* This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet WRF10005 OTHER99999999 WS CADDO 125000 \*\* This water right is for Louisiana's diversion from Caddo Lake for each year WRF10005 MUN99999999 WS CADDO 165000 \*\* \*\* Storage-Area Tables \*\* **SVLKMONT SALKMONT SVBOBSAN** SABOBSAN \*\* **N2NHOCV2** 

**SAJOHNSN** 

					сур	שא_p1T12	a-gazeti	.ne				
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**												
** Carollo a	dd add	ditional	SVSA cur	ve for	Pit 129.							
**SVPIT129	(	0 94	4 161	. 25	1 35	9 479	105	4 1410				5355
**SAPIT129	(	0 1	2 16	2	0 2	3 2!	5 3	3 39	9 50	62	. 72	98
**												

cyn02 ni+120\_Racoline

\*\* Drought Indices

\*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

\*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

\*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

\*\* Therefore, this DI record is only included as a place holder.

\*\*

DI 1 1 CADDO IS 4 0 125000 125001 865000 IP 100 100 100 100

\*\* Streamflow And Evaporation Records

\*\* ED

```
Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
    Updated 6/18/2015 KA
Т3
**
**
**
    General Comments
**
   JD
      51
            1948
                      1
                             -1
                                     -1
                                              0
                                                     5
                                                             0
                                                                     0
                                                                             3
                                                                                     0
                                                                                            0
                                                                                                    0
JO
      -1
RO
**
FΥ
     1.0 241800
                   1000
                            100
                                                        FYLOTP
**FY
       1.0
             48500
                     1000
                              100
                                       10
                                                             BOB
**FY
            10000
         1
                     1000
                              100
                                       10
                                              10405850307
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850301
**FY
            10000
         1
                     1000
                              100
                                       10
                                              10405850306
**FY
        1
            10000
                     1000
                              100
                                       10
                                              10405850304
**FY
            10000
        1
                     1000
                              100
                                       10
                                              10405850303
**FY
         1
             10000
                     1000
                              100
                                       10
                                              10405850305
**FY
            10000
                     1000
                              100
                                       10
                                              10405850302
**
**
    Monthly Water Use Factors
**
UC
    5813
             60
                     60
                             60
                                     60
                                            76
                                                    76
UC
              76
                     76
                             76
                                     60
                                             60
                                                    60
UC
     MUN
          0.077
                  0.070
                          0.075
                                  0.076
                                          0.084
                                                  0.091
UC
          0.100
                  0.100
                          0.089
                                  0.085
                                          0.076
                                                 0.078
UC
          0.068
     IND
                  0.063
                          0.070
                                  0.080
                                          0.081
                                                 0.077
UC
          0.109
                  0.109
                          0.104
                                          0.072
                                  0.084
                                                 0.076
UC
     IRR
          0.000
                  0.001
                          0.004
                                  0.013
                                          0.051
                                                 0.162
UC
          0.200
                  0.241
                          0.142
                                  0.097
                                          0.053
                                                 0.038
UC
     MIN
          0.079
                  0.080
                          0.084
                                  0.080
                                          0.081
                                                  0.077
UC
          0.080
                  0.084
                          0.088
                                  0.090
                                          0.090
                                                 0.087
UC
     REC
          0.083
                  0.083
                          0.083
                                  0.083
                                          0.083
                                                 0.083
UC
          0.083
                  0.083
                          0.083
                                  0.083
                                          0.083
                                                 0.083
UC OTHER
          0.083
                  0.083
                          0.083
                                  0.083
                                          0.083
                                                 0.083
```

```
cyp03 pit129-FYLOTP
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                     1.0
UC MONTH
              31
                   28.25
                              31
                                              31
                                      30
                                                      30
UC
              31
                      31
                              30
                                      31
                                              30
                                                      31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                    NONE
                                       7
CPPPDISC TCUSBC
                                                    NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                     513
**
**TXU app 5850, 6/24/05, kb
                                       7
CP585008 A10120
                                                    NONE
                                       7
                                                     513
CP585037 A10120
                                                    NONE
CP585009 A10120
                                                    NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                       513
**CP585007 A10000
                                         7
                                                      NONE
**CP585006 A10000
                                         7
                                                      NONE
CP585031 PPDISC
                                       7
                                                     513
CP585007 PPDISC
                                       7
                                                    NONE
                                       7
                                                    NONE
CP585006 PPDISC
                                       7
CP585036 585034
                                                     513
CP585034 585033
                                       7
                                                     513
CP585033 585032
                                       7
                                                     513
                                       7
                                                     513
CP585035 585032
CP585032 585005
                                       7
                                                     513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                         7
                                                      NONE
                                         7
**CP585004 A10000
                                                      NONE
**CP585003 A10000
                                         7
                                                      NONE
**CP585002 A10000
                                         7
                                                      NONE
**CP585001 A10000
                                         7
                                                      NONE
```

7

NONE

CP585005 PPDISC

```
cyp03_pit129-FYLOTP
CP585004 TCUSBC
                                       7
                                                   NONE
CP585003 TCUSBC
                                       7
                                                   NONE
CP585002 TCUSBC
                                       7
                                                   NONE
CP585001 TCUSBC
                                       7
                                                   NONE
CP585011 A10070
                                       7
                                                   NONE
CP585012 A10010
                                                   NONE
CP585013 A10010
                                       7
                                                   NONE
** add control points for A5814
CP581431 581432
                                                 QAD413
CP581432 A10260
                                       7
                                                  QAD413
CP581433 A10240
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                       7
                                                   NONE
CP581302 D10000
                                       7
                                                   NONE
CP581303 D10000
                                       7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                  B10170
CP458237 B10170
                                                  B10170
**
CPA10370 A10340
                                       7
                                                 QAD413
CPA10350 A10340
                                       7
                                                  QAD413
CPA10340 A10300
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
CPA10290 A10200
                                       7
                                                   NONE
CPA10280 A10240
                                       7
                                                  QAD413
CPA10260 A10240
                                       7
                                                  QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
                                       7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                       7
                                                    513
CPA10090 TCUSBC
                                       7
                                                    513
```

#### cyp03\_pit129-FYLOTP CPA10070 A10010 7 513 A10010 CPA10060 7 513 CPA10050 A10010 7 513 CPA10040 A10010 7 513 CPA10030 A10010 7 QAD413 CPA10020 A10010 7 NONE CPA10010 A10000 7 513 CPA10000 B10150 0 NONE CPB10320 B10310 QAD413 7 CPB10310 B10150 NONE 7 CPB10300 B10150 7 QAD413 CPB10290 B10150 7 QAD413 CPB10270 B10150 7 CPB10260 B10150 7 QAD413 CPB10250 B10150 7 QAD413 CPB10230 B10170 7 513 CPB10220 B10230 7 513 CPB10210 B10150 7 513 CPB10200 B10150 7 513 CPB10180 B10170 7 513 CPB10170 B10150 7 CPB10150 B10040 7 NONE CPB10120 B10040 513 7 CPB10110 7 513 B10040 CPB10100 B10040 7 513 CPB10090 B10040 7 513 CPB10080 B10040 7 513 CPB10070 B10040 7 CPB10050 B10040 QAD413 7 \*\*CPB10040 B10000 NONE 7 CPB10040 B10000 7 CPB10000 F10230 0 NONE CPC10050 C10010 7 QAD413 CPC10040 C10010 7 QAD413 CPC10030 C10010 7 QAD413 CPC10010 C10000

7

0

7

CPC10000 F10180

CPD10190 D10000

QAD413

QAD412

NONE

			cyp03_pit129-FYLOTP
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10130	F10080	7	NONE

```
cyp03 pit129-FYLOTP
CPF10120 F10080
                                     7
                                                  513
CPF10110 F10080
                                     7
                                                  513
CPF10100 F10080
                                     7
                                               QAD512
CPF10090 F10080
                                     7
                                               QAD413
CPF10080 F10005
                                     7
                                                  513
                                     7
                                               QAD412
CPF10030 F10020
CPF10020 F10005
                                     7
                                                  513
CPF10005 F10000
                                     7
CPF10000
            OUT
                                     0
                                                 NONE
CP 10050
          10040
                                     7
                                               QAD413
CP 10040
          10010
                                     7
                                               QAD413
CP 10020
          10010
                                     7
                                               QAD413
CP 10010
            OUT
                                     7
                                                 NONE
CPQAD412
            OUT
                                     0
CPQAD413
            OUT
                                     0
CPQAD512
            OUT
                                     0
CP 513
            OUT
                                     0
            OUT
                                     2
                                                 NONE
CPSABINE
                                          NONE
CPSULPHR
            OUT
                                     2
                                          NONE
                                                 NONE
CPA240DM
            OUT
                                     2
                                          NONE
                                                 NONE
CPB270DM
            OUT
                                     2
                                                 NONE
                                          NONE
CPB70DUM
            OUT
                                     2
                                          NONE
                                                 NONE
CPB20MUN
            OUT
                                     2
                                          NONE
                                                 NONE
            OUT
                                                 NONE
CPAVNGER
                                     2
                                          NONE
CPDNGRFD
            OUT
                                          NONE
                                                 NONE
CPHGHSPR
            OUT
                                     2
                                          NONE
                                                 NONE
            OUT
                                                 NONE
CPJEFFSN
                                          NONE
CPLVGSTN
            OUT
                                          NONE
                                                 NONE
CPORECTY
            OUT
                                          NONE
                                                 NONE
**
CPA-ZERO
                                                                   0
            OUT
                                          ZERO
                                                 ZERO
                                                           -3
**
   Water Rights and Associated Reservoir Storage Information
** Carollo add water right for modeling of pit 129
**WR585100
                0
                     IND20181231
                                   1
```

104000PT129 PT129

				cypo3_pit129-FYLOIP		
**WSPIT129	5355	5				
**						
**TXU app		<sup>7</sup> 24/05, kb				
WR585001	50	IND20041231	1		10405850001	5850
WR585002	0	IND20041231	1		10405850002	5850
S0			BACKUP			3030
WR585003	0	IND20041231	1		10405850003	5850
S0			BACKUP		20.03030003	5050
WR585004	0	IND20041231	1		10405850004	5850
S0			BACKUP		20103030004	2020
WR585005	0	IND20041231	1		10405850005	5850
S0			BACKUP		10403030003	2020
WR585006	0	IND20041231	1		10405850006	5850
S0			BACKUP		10403030000	2020
WR585007	0	IND20041231	1		10405850007	5850
SO			BACKUP		10403030007	2020
WR585008	0	IND20041231	1		10405850008	5850
S0			BACKUP		20,03030000	5650
WR585009	0	IND20041231	1		10405850009	5850
50			BACKUP			3030
WR585010	0	IND20041231	1		10405850010	5850
S0			BACKUP		_0.000000	3030
WR585011	0	IND20041231	1		10405850011	5850
SO			BACKUP			3030
WR585012	0	IND20041231	1		10405850012	5850
S0			BACKUP			
WR585013	0	IND20041231	1		10405850013	5850
S0			BACKUP			
WR585037	0	IND20041231	1		10405850307	5850
WSR58507	525.6	0.979 0.5841				
WR585031	0	IND20041231	1		10405850301	5850
WSR58501	271.4	0.979 0.5841				
WR585036	0	IND20041231	1		10405850306	5850
WSR58506	327	0.979 0.5841			-	<del>-</del>
WR585034	0	IND20041231	1		10405850304	5850
WSR58504	509.3	0.979 0.5841				
WR585033	0	IND20041231	1		10405850303	5850
WSR58503	287.3	0.979 0.5841				

				cypes_pitize-ritore		
WR585035	0	IND20041231	1		10405850305	5850
WSR58505	604.8	0.4012 0.856				
WR585032	0	IND20041231	1		10405850302	5850
WSR58502	245.1	0.979 0.5841				
**					•	
	CATION 58	314				
WR581431	0	OTHER20031028	1		10405814301	
WS HR9	356	0.979 0.5841				
WR581432	0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841				
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856				
	CATION 58					
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813003	
SO			BACKUP			
WR581302	0	581320031001	1		10405813002	
SO			BACKUP			
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK		0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	. 6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM		0.979 0.5841	0			
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH		0.979 0.5841	0			
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0	_		
WRF10080	2343	MUN19830418	1	1	10404349001	4349
WSF10080	8.29	0.979 0.5841	0			
S0	3293.45	2343	_			
WRF10080	1281	IND19830418	1	1	10404349002	4349
WSF10080	8.29	0.979 0.5841	0			
S0	3293.45	1281				

cvp03 pit129-FYLOTP

					cypu3_pit129-FYLOTP		
WRB10250	0	REC19841127	1			10404522301	
WSB10250	380	0.979 0.5841		0		20101522501	
WRF10180	202.5	IRR19841218	1		1	10404525404	
WRA10370	0	REC19750106	1		1	10404525101	
WSA10370	350	0.979 0.5841	_	0		60404558301	
WRA10350		REC19751215	4	U			
WSA10350	230	0.979 0.5841	1	•		60404559301	
**	230	0.3/9 0.5841		0			
**							
	_						
Lake	Cypress	Springs					
**							
**							
WRA10340	10500	MUN19700720	1			60404560301	4560 CYPRESS
WSLKCYPS	72800					00101300301	4500 CIFICESS
**							
WRA10340	1000	MUN19660131	1			60404560302	4FC0_C\/DDFCC
WSLKCYPS	72800		_			00404500502	4560 CYPRESS
**							
WRA10340	210	IRR19700720	1			60404560000	
WSLKCYPS	72800	111113700720	-			60404560303	4560 CYPRESS
**	, 2000						
WRA10340	3590	IND19700720	1				
WSLKCYPS	72800	IND13/00/20	1			60404560304	4560 CYPRESS
**	72000						
WRA10340	0	DEC40550434	_				
	72000	REC19660131	1			60404560305	4560 CYPRESS
WSLKCYPS **	72800						
**							
WRA10300	11.61	IRR19630831	1			60404561001	
WRA10290	24.0	IRR19630801	1			60404562002	
**							
**							
	Montice]	llo					
**							
**							
WRA10240	15300	IND19700406	1			60404563301	4563
WSLKMONT	40100		=			TACCOCHOLOG	4303
**							

WRA10240 WSLKMONT ** **	1000 40100	IND19730604	1	), <u>-</u> i	60404563302	4563	
	Bob Sand	lin					
**							
WRA10200 WSBOBSAN	10000 213350	MUN19711220	1		60404564301	4564	вов
**							
WRA10200 WSBOBSAN **	8000 213350	IND19711220	1		60404564302	4564	ВОВ
WRA10200	10900	IND19711220	1		60404564303	4564	вов
WSBOBSAN **	213350						
WRA10200	0	REC19711220	1		60404564305	4564	вов
	213350						
		M BOB SANDLIN -		AUTHORIZATION	2MEMBERCERMROR	4500	DOD LOTDDOD
WRA10200 WSBOBSAN	1930 213350	MUN19711220	1		2MEMBERSFRMBOB	4590	BOB LOTPBOB
		M BOB SANDLIN -	TND	UITHORTZATTON			
WRA10200	10000	IND19711220	1	TONIZATION	1TXU_MONTE	4590	BOB LOTPBOB
WSBOBSAN	213350	1110137111220	_		21,70_1,011.2		202 2011 202
		ORIZATION OF BOB	SANI	DLIN WATER RIGHT. NOTE THA	T THIS AUTH WAS DEEN	MED TO	NOT HAVE ACCESS TO
** BOB SA	NDLIN ST	ORAGE, INFLOWS O	NLY.				
WRA10200	19600	IND19780313	1		60404564304	4564	BOBROR
**							
** =====			====:				
WRA10120	1680	MUN19550822	1		60404565301	4565	
WSTANKSL		0.4012 0.856	_	0	4040454500	45.55	
WRA10120	550	IND19550822	1		60404565302	4565	
WSTANKSL	2700	0.4012 0.856		0	50404555303	4565	
WRA10120	0	REC19550822	1		60404565303	4565	
WSTANKSL	2700	0.4012 0.856		0	CO 40 45 CC 204		
WRA10090	21.44	IRR19591231	1	0	60404566301		
WSA10090 WRA10100	0.23 6	0.979 0.5841 IRR19561231	1	0	60404567301		
MUNTATAR	Ö	TVVT320T53T	T		TAC / QC+A+AQ		

					cyp03_pit129-FYLOTP		
WSA10100	5	0.979 0.5841		0	<u> </u>		
WRA10050	7.5	IRR19631231	1			60404568301	
WSA10050	35	0.979 0.5841		0			
WRA10070	400	MUN19380317	1			60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0			4505
WRA10070	0	REC19380317	1			60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0		00.10.1505502	4505
WRA10060	144	MUN19750120	1			60404570301	4570
WSOLDCTY	100	0.979 0.5841		0			1370
WRA10060	0	REC19750120	1			60404570302	4570
WSOLDCTY	100	0.979 0.5841		0		00.00,0002	4370
WRA10040	4	IRR19631231	1			60404571301	
WSA10040	12	0.979 0.5841		0		00.10.107.2502	
WRA10030	4.4	IRR19631231	1			60404572301	
WSA10030	10	0.979 0.5841		0		00 10 137 2301	
WRE10020	25.3	IND19850604	1			10404573301	
WSE10020	42	0.979 0.5841		0		_0.0.3,3301	
WRA10010	11	IRR19551231	1 ,			60404573001	
WRB10320	0	IRR19511231	1			60404574001	4574
WSOFF320	5.0	0.979 0.5841		0			13/4
S0	5.43	1.40					
WRB10320	1.4	IRR19511231	1			60404574301	4574
WSB10320	0.5	0.979 0.5841		0			.5, .
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0						
S0	5.43	1.40					
WRB10290	0	REC19730430	1			60404575301	
WSB10290	80	0.979 0.5841		0			
**							
**							
**							
	Reservo						
WRB10270	11000	IND19730910	1			60404576301	4576
WS WELSH	23587						
**							
	_						
WRB10270	0	REC19730910	1			60404576302	4576
WS WELSH	23587						

```
**
**
WRB10230
            124
                    IRR19500930
                                 1
                                                                   60404577301
WSB10230
             96
                  0.979 0.5841
                                      0
WRB10220
              6
                    IRR19521231
                                                                   60404578301
                  0.979 0.5841
                                      0
WSB10220
              1
WRB10210
             75
                    IRR19531231
                                                                   60404579301
                                1
WSB10210
             64
                  0.979 0.5841
                                      0
WRB10200
              2
                    IRR19581231
                                                                   60404580301
                  0.979 0.5841
                                      0
WSB10200
            0.5
WRB10180
                    REC19690922
              0
                                                                   60404581301
                                      0
WSB10180
                  0.979 0.5841
            510
**
**
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.
** Ellison Creek Reservoir
**
WRB10170
           2000
                    MUN19720508
                                 1
                                                                   60404582001
                                                                                  4582 ELLISON
WSELLISN
          24700
          21000
                                                                   60404582002
                                                                                  4582 ELLISON
WRB10170
                    IND19421130
                                 1
          24700
WSELLISN
** Fill from Cypress Creek at priority
                                                                   60404582004
                                                                                  4582 ELLISON
WRB10170
                       19421130
                                 1
WSELLISN
          24700
S0
                  26000 B10150
**
** Miscellaneous impoundments on Barnes Cr etc.
**
WR458232
                  OTHER19720508
                                                                   60404582303
                                                                                  4582 barnes
                                      0
WSBARNES
           24000 0.4012 0.856
WR458232
                  OTHER19720508
                                                                        4582BU
                                                                                  4582 barnes
WSBARNES
           24000
S0
                         458237 BACKUP
**
```

\*\*

```
cyp03_pit129-FYLOTP
WRB10120
          38.3
                  IRR19620731
                                                             60404583301
          4.79 0.979 0.5841
WSB10120
                                   0
WRB10110
          14.2
                  IRR19480930
                                                             60404584301
            60 0.979 0.5841
WSB10110
WRB10100
          0.56
                  IRR19550331
                                                             60404585301
WSB10100
            50 0.979 0.5841
                                   0
WRB10090
             1
                  IRR19641231
                                                             60404586301
WSB10090
            12
                 0.979 0.5841
                                   0
WRB10080
           150
                  IRR19561231
                                                             60404587301
WSSIMPSN
          2500 0.4012 0.856
**
**
** Wilkes Reservoir (aka Johnson Reservoir)
WRB10070
          6668
                  IND19600504 1
                                                             60404588301
                                                                           4588
NSNHOCZW
         10100
**
WRB10070
                  REC19600504
                             1
                                                             60404588302
                                                                           4588
WSJOHNSN
        10100
**
**
WRB10050
             0
                  REC19751208 1
                                                             60404589301
           240 0.979 0.5841
WSB10050
                                   0
**
**
** Lake O'the Pines
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040
        40070
                  MUN19570916 1
                                                                   1MUN
                                                                           4590 FYLOTP
WSLKOPNS 251000
                   -1
WRB10040 151800
                  IND19570916
                             1
                                                                    2IND
                                                                           4590 FYLOTP
WSLKOPNS 251000
WRF10250
             8
                  IRR19670430
                                                        1
                                                             60404591301
WSF10250
             6
                0.979 0.5841
                                  0
WRF10230 96.88
                  IRR19690930
                                                        1
                                                             60404592001
WRF10240
            85
                  IRR19620531
                              1
                                                             60404593301
```

WSF10240	100	0.979 0.5841		0				
WRF10220	1080	IRR19550103	1		1	-	60404594002	
WRF10210	2000	MUN19630218	1		1	_	60404595001	
WRF10190	80.21	IRR19570319	1		1	-	60404596001	
WRC10040	25	IRR19760621	1				60404597301	
WSC10040	35	0.979 0.5841		0				
WRC10030	10	IND19700126	1				60404598301	
WSC10030	5	0.979 0.5841		0				
WRC10010	47	IRR19530731	1				60404599001	
WSC10010	7	0.979 0.5841		0				
S0	40.42	47						
WRF10170	62.5	IRR19660630	1		1	L	60404600001	
WRD10090	0	REC19461121	1				60404601301	
WSD10090	135	0.979 0.5841		0				
WRD10080	0	REC19600211	1				60404602301	
WSD10080	1414	0.4012 0.856		0				
WRD10070	0	REC19730312	1				60404603301	
WSELWOOD	116	0.979 0.5841		0				
WRD10060	7.03	IRR19670630	1				60404604301	
WSD10060	28	0.979 0.5841		0				
WRD10030	0	REC19741209	1				60404605301	4605
WSD10030	36	0.979 0.5841		0				
WRD10040	0	REC19741209	1				60404605302	4605
WSD10040	114	0.979 0.5841		0				
WRD10020	0	REC19740812	1				60404606301	
WSD10020	294	0.979 0.5841		0				
WRD10010	0	REC19740812	1				60404607301	
WSD10010	330	0.979 0.5841		0				
WRE10070	18.2	IRR19520630	1				60404608301	
WSE10070	20	0.979 0.5841		0				
WRE10060	15	IND19680318	1				60404609001	4609
WSE10060	4.8	0.979 0.5841		0				
WRE10050	225	IND19821206	1				60404609301	4609
WSE10050	228.2	0.979 0.5841		0				
WRE10040	122	IRR19551010	1				60404610001	
WRE10010	955	IND19430701	1				60404611301	
WSHOLMES	744	0.4012 0.856		0				
WRF10160	46.58	IRR19550323	1		1	L	60404612001	

					cyp03_pit129-FYLOTP		
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		_ 1	60404614002	4614
WRF10120	10	IRR19751215	1		_ 1	60404615301	4014
WSF10120	54	0.979 0.5841		0	<del>-</del>	00.04013301	
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0	-	00-0-010301	
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0	-	00404017301	
WRF10020	42	IRR19790221	1		1	60404618301	1610
WSF10020	42	0.979 0.5841		0	1	00404019301	4618
WRF10020	51	IRR19810413	1		1	60404618302	4610
WSF10020	42	0.979 0.5841		0	1	00404016302	4618
WR 10050	0	REC19760524	1	Ū		60404619301	
WS 10050	184	0.979 0.5841	_	0		00404019301	
WR 10040	0	REC19781016	1	Ū		60404620301	
WS 10040	600	0.4012 0.856	_	0		00404020301	
WR 10020	0	REC19470922	1	Ū		60404621301	
WS 10020	160	0.979 0.5841	_	0		00404021301	
WRD10120	0	REC19860404	1	Ū		10405054301	
WSD10120	550	0.979 0.5841	_	0		10403034301	
WRC10050	0	REC19860729	1	Ū		10405080301	
WSC10050	300	0.979 0.5841	_	0		10403000301	
WRF10100	0	REC19861125	1	Ū	1	10405112301	
WSF10100	277	0.979 0.5841	_	0	-	10403112301	
WRA10280	0	IND19880121	1	·		10405167301	
WSPONDH1	477	0.979 0.5841	_	0		10403107301	
WRB10300	0	IRR19890112	1	Ū		10405212301	
WSB10300	0.09	0.979 0.5841	_	0		10403212301	
WRB10260	0	IRR19890810	1	Ū		10405251301	
WSB10260	86	0.979 0.5841	_	0		10403231301	
IFD10110	1025.6	CONST19891214	1	1	IF5272		
**			_	-	11 32/2		
WRD10110	6180	MUN19891214	1			10405272301	F272
WSLKGILM	12720		-			104032/2301	5272
WRD10110	0	REC19891214	1			10405272302	5272
WSLKGILM	12720					10-072/2302	3212
WRF10090	0	REC19900710	1		1	10405302301	
			_		-	10703302301	

UCE10000	00	0 070	0 5041	^	-71							
WSF10090	80		0.5841	0								
WRA10260	0		9950522	1				1040	5529301			
WSPONDH4	173.7		0.5841	0								
WRE10080	0		9950801	1				1040	5537301			
WSE10080	296		0.5841	0								
WRE10090	34		9980320	1				1040	5608301	5608		
WSE10090	55.6		0.5841	0								
WRE10090	0		9980320	1				1040	5608302	5608		
WSE10090	55.6		0.5841	. 0				<b>.</b> .				
	water ri	_		•	rtion of	· Caddo L	ake up t					
WRF10005	0	OTHER9	9999999	1				6040	9999301	9999		
WS CADDO								_	ī			
	water ri	_			liversion	trom Ca	ddo Lake		-			
WRF10005	40000	MUN9	9999999	1				6040	9999302	9999		
WS CADDO	165000											
**	_											
** Stoi **	rage-Area	lables										
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
NZNHOCAZ	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	35.00	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**												

\*\* Carollo add additional SVSA curve for Pit 129.

**SVPIT129	0	94	161	251	359	479	1054	1410	2079	2750	4000	
**SAPIT129	0	12	16	20	23	25	33			3759	4090	5355
**	•		10	20	23	25	33	39	50	62	72	98

\*\* Drought Indices

\*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

\*\* Therefore, this DI record is only included as a place holder.

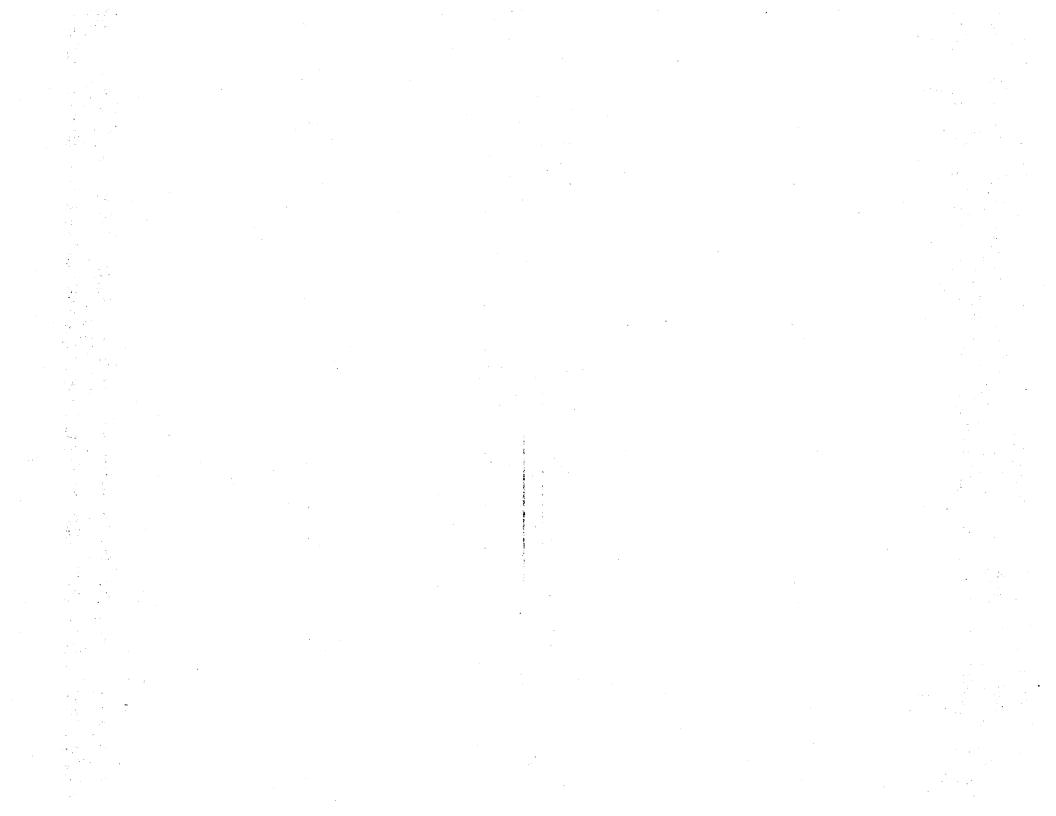
DI 1 CADDO 1 IS 4 0 125000 125001 865000 ΙP 100 100 100 100 \*\*

Streamflow And Evaporation Records \*\*

ED

* a					

# cyp03\_pit129.DIS



```
**
** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100 A10000
WP585100 1.26875
FDTCUSBC A10000
                      0
WPTCUSBC 35.3043
FDPPDISC A10000
                      0
WPPPDISC 21.8636
**
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008 A10000
WP585008 5.0368
FD585037 A10000
                      0
WP585037 0.4791
FD585009 A10000
                      0
WP585009 1.1166
FD585010 A10000
                      0
WP585010 1.2373
FD585031 A10000
                      0
WP585031 0.4284
FD585007 A10000
                      0
WP585007 0.2604
FD585006 A10000
                      0
WP585006 2.8062
FD585036 A10000
                      0
WP585036 0.4570
FD585034 A10000
                      0
WP585034 0.5905
FD585033 A10000
                      0
WP585033 2.9988
FD585035 A10000
                      0
WP585035 0.6235
FD585032 A10000
                      0
WP585032 4.2301
```

```
FD585005 A10000
                      0
WP585005 5.8348
FD585004 A10000
                      0
WP585004 0.1356
FD585003 A10000
                      0
WP585003 1.9687
FD585002 A10000
                      0
WP585002 0.1512
FD585001 A10000
                      0
WP585001 0.1708
FD585011 A10000
                      0
WP585011 2.2375
FD585012 A10000
                      0
WP585012 2.6298
FD585013 A10000
                      0
WP585013 1.0074
**
** Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431 A10000
                      0
WP581431
            .855
FD581432 A10000
                      0
WP581432
            .930
FD581433 A10000
                      0
WP581433
            .401
** ADD ADDITIONAL CPS FOR A5813
FD581301 D10000
                      0
WP581301 7.151
**
FD581302 D10000
                      0
WP581302
          0.303
**
FD581303 D10000
                      0
WP581303
         2.545
**
```

							cyp03_pit129.DIS
	DITIONAL	CPS	FOR	<b>BARNES</b>	CREEK	WATERSHED	<b>71</b> _1
FD458232	B10000		0	A10000			
WP458232	3.364						
**							
FD458237	B10000		0	A10000			
WP458237	.227						
**							
FDA10370	A10000		0				
FDA10350	A10000		0				
FDA10340	A10000		0			•	
FDA10300	A10000		0				
FDA10290	A10000		0				
FDA10280	A10000		0				
FDA10260	A10000		0				
FDA10240	A10000		0				
FDA10200	A10000		0				
FDA10120	A10000		0				
FDA10100	A10000		0				
FDA10090	A10000		0				
FDA10070	A10000		0				
FDA10060	A10000		0				
FDA10050	A10000		0				
FDA10040	A10000		0				
FDA10030	A10000		0				
FDA10020	A10000		0				
FDA10010	A10000		0				
FDB10320	B10000		0	A10000			
FDB10310	B10000		0	A10000			
FDB10300	B10000		0	A10000			
FDB10290	B10000		0	A10000			
FDB10270	B10000		0	A10000			
FDB10260	B10000		0	A10000			
FDB10250	B10000		0	A10000			
FDB10230	B10000		0	A10000			
FDB10220	B10000		0	A10000			

B10000	0	A10000
B10000	0	A10000
B10000	0	A10000
B10000	0	A10000
B10000	1	A10000
B10000	0	A10000
B10000	1	A10000
C10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
D10000	0	
	B10000 B10000 B10000 B10000 B10000 B10000 B10000 B10000 B10000 C10000 C10000 C10000 D10000	B10000 0 B10000 0 B10000 0 B10000 0 B10000 0 D10000 0 D10000 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D10000 0 D100000 0 D10000 0 D

FDE10090	E10000	0	D10000			->F
FDE10080	E10000	0	D10000			
FDE10070	E10000	0	D10000			
FDE10060	E10000	1	D10000			
FDE10050	E10000	0	D10000			
FDE10040	E10000	1	D10000			
FDE10020	E10000	0	D10000			
FDE10010	E10000	0	D10000			
FDF10250	F10000	0	B10000	C10000	E10000	
FDF10240	F10000	0	B10000	C10000	E10000	
FDF10230	F10000	1	B10000	C10000	E10000	
FDF10220	F10000	1	B10000	C10000	E10000	
FDF10210	F10000	1	B10000	C10000	E10000	
FDF10190	F10000	1	B10000	C10000	E10000	
FDF10180	F10000	1	C10000	B10000	E10000	
FDF10170	F10000	1	C10000	B10000	E10000	
FDF10160	F10000	1	E10000	B10000	C10000	
FDF10140	F10000	0	B10000	C10000	E10000	
FDF10130	F10000	3	B10000	C10000	E10000	
FDF10120	F10000	0	B10000	C10000	E10000	
FDF10110	F10000	0	B10000	C10000	E10000	e e
FDF10100	F10000	0	B10000	C10000	E10000	
FDF10090	F10000	0	B10000	C10000	E10000	
FDF10080	F10000	3	B10000	C10000	E10000	
FDF10030	F10000	0	B10000	C10000	E10000	
FDF10020	F10000	0	B10000	C10000	E10000	
FDF10005	F10000	3	B10000	C10000	E10000	
FD 10050	F10000	0	B10000	C10000	E10000	
FD 10040	F10000	0	B10000	C10000	E10000	
FD 10020	F10000	0	B10000	C10000	E10000	
FD 10010 **	F10000	0	B10000	C10000	E10000	
	ahad Daw					
water	shed Parar	neters				

WPA10370 6.8736 72.93 43.42

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100

cyp03\_pit129.DIS

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100
ED			

# cyp03\_pit129.EVA

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cyp03 pit129.EVA EVA10200 1948 0.129 0.151 0.019 0.032 0.073 0.442 0.244 0.375 0.467 0.225 -0.059 0.051 EVB10170 1948 0.015 0.061 0.138 0.068 -0.067 0.421 0.235 0.315 0.386 0.217 -0.155 0.031 EVB10070 1948 -0.016 0.162 0.053 0.070 -0.081 0.417 0.246 0.297 0.370 0.216 -0.186 0.023 EVF10005 1948 -0.037 0.069 0.204 0.076 -0.056 0.273 0.413 0.299 0.364 0.249 -0.219 0.027 EVA10340 1948 0.164 0.185 -0.004 0.076 0.075 0.447 0.252 0.401 0.493 0.243 -0.034 0.063 EVA10240 1948 0.142 0.163 0.009 0.074 0.046 0.444 0.247 0.383 0.477 0.229 -0.049 0.055 EVb10040 1948 -0.024 0.059 0.177 0.072 -0.072 0.415 0.256 0.297 0.368 0.228 -0.198 0.025 EVB10270 1948 0.075 0.104 0.066 0.069 -0.024 0.433 0.235 0.342 0.428 0.210 -0.101 0.038 EV 513 -0.050 1948 0.080 0.230 0.080 -0.040 0.410 0.290 0.300 0.360 0.270 -0.240 0.030 EVQAD412 1948 0.350 0.400 -0.240 0.100 0.280 0.490 0.320 0.480 0.100 0.650 0.250 0.080 EVOAD413 1948 0.050 0.000 0.030 0.050 -0.160 0.160 0.430 0.290 0.390 0.110 -0.080 0.010 EVOAD512 1948 0.100 0.080 0.170 0.060 0.420 0.020 0.210 0.420 0.420 0.310 -0.080 0.090 EVA10200 1949 -0.366 0.055 -0.057 -0.007 0.281 0.125 0.089 0.480 0.368 0.024 0.214 -0.027 EVB10170 1949 -0.427 -0.034 0.040 -0.007 0.191 0.080 0.007 0.462 0.352 -0.073 0.320 -0.068 EVB10070 1949 -0.427 0.033 -0.040 -0.009 0.187 0.049 -0.049 0.428 0.330 -0.094 0.326 -0.080 EVF10005 1949 -0.423 0.031 -0.034 -0.034 0.189 0.086 -0.086 0.398 0.318 -0.165 0.341 -0.080 EVA10340 1949 -0.472 0.062 -0.079 -0.043 0.172 0.326 0.142 0.542 0.395 -0.077 0.297 -0.031 EVA10240 1949 -0.469 0.057 -0.079 -0.032 0.171 0.115 0.274 0.528 0.384 -0.064 0.297 -0.040 EVB10040 0.033 -0.038 1949 -0.425 -0.018 0.187 0.062 -0.062 0.417 0.326 -0.120 0.331 -0.080

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cyp03 pit129.EVA EVB10270 1949 -0.450 0.178 0.054 0.047 -0.062 -0.011 0.152 0.493 0.364 -0.050 0.305 -0.059 EVOAD412 1949 -0.580 0.070 -0.230 -0.100 0.100 0.650 0.160 0.550 0.370 -0.120 0.260 -0.020 EVOAD413 -0.440 0.040 -0.060 0.070 0.180 -0.070 0.070 1949 0.520 0.370 0.130 0.280 -0.080 EVOAD512 1949 -0.380 0.080 0.080 -0.040 0.250 0.270 0.280 0.620 0.480 -0.100 0.330 0.010 -0.030 EV 513 1949 -0.420 0.030 -0.050 0.190 0.110 -0.110 0.380 0.310 -0.2100.350 -0.080 0.250 0.121 0.420 0.246 0.119 EVA10200 1950 0.054 0.065 0.127 0.022 0.040 -0.063 0.159 EVB10170 1950 0.004 0.045 0.157 0.019 0.013 0.261 0.116 0.476 -0.211 0.218 0.136 0.168 0.463 -0.237 EVB10070 0.153 0.003 0.250 0.106 0.207 0.127 1950 -0.003 0.047 0.027 0.157 EVF10005 0.157 0.133 0.111 1950 -0.007 0.031 0.023 0.019 0.244 0.473 -0.214 0.203 0.147 EVA10340 0.136 0.153 0.169 1950 0.048 0.035 -0.009 0.080 0.236 0.473 -0.107 0.250 0.192 0.135 0.136 EVA10240 1950 0.041 0.042 -0.001 0.063 0.236 0.464 -0.137 0.243 0.167 0.188 EVB10040 1950 -0.005 0.041 0.155 0.025 0.009 0.248 0.116 0.467 -0.229 0.205 0.121 0.153 0.112 EVB10270 0.228 0.154 0.022 0.051 0.143 0.013 0.028 0.246 0.461 -0.193 1950 0.178 -0.060 0.260 0.210 EVOAD412 1950 0.110 0.050 0.060 -0.020 0.150 0.120 0.140 0.370 0.190 EVQAD413 1950 0.010 0.100 0.140 0.040 -0.050 0.270 0.020 0.430 -0.310 0.220 0.180 0.190 EVQAD512 0.360 0.260 0.010 0.280 0.140 1950 0.020 -0.020 0.220 -0.040 0.100 0.630 0.220 -0.010 0.020 0.160 0.030 0.240 0.150 0.480 -0.200 0.200 0.100 EV 513 1950 0.020 0.140 EVA10200 1951 -0.131 -0.015 0.113 0.023 0.124 0.166 0.147 0.376 -0.046 0.160 0.033 -0.009 EVB10170 -0.208 -0.024 0.080 0.021 0.143 -0.026 0.148 0.333 -0.132 0.129 0.038 1951 -0.072

cyp03\_pit129.EVA EVB10070 1951 -0.233 -0.020 0.055 0.019 0.160 -0.042 0.136 0.307 -0.141 0.136 0.030 -0.102 EVF10005 1951 -0.243 -0.014 0.015 0.056 0.166 0.008 0.151 0.297 -0.116 0.163 0.036 -0.132 EVA10340 1951 -0.146 -0.041 0.115 0.060 0.115 0.165 0.178 0.409 -0.113 0.135 0.083 0.000 EVA10240 1951 -0.160 -0.039 0.112 0.043 0.124 0.122 0.165 0.393 -0.127 0.128 0.073 -0.011 EVB10040 1951 -0.237 -0.018 0.032 0.040 0.162 -0.024 0.141 0.303 -0.132 0.146 0.032 -0.113 EVB10270 1951 -0.190 -0.033 0.101 0.017 0.138 0.024 0.146 0.357 -0.143 0.121 0.050 -0.042 EVOAD412 1951 -0.140 -0.060 0.090 0.080 0.150 0.440 0.150 0.440 -0.160 0.150 0.130 0.020 EVOAD413 1951 -0.200 -0.040 0.180 -0.100 0.140 -0.200 0.090 0.340 -0.220 0.050 0.010 -0.010 EVQAD512 1951 -0.070 -0.030 0.160 0.130 0.030 0.110 0.280 0.470 0.010 0.150 0.090 0.050 EV 513 1951 -0.250 -0.010 -0.010 0.080 0.170 0.040 0.160 0.290 -0.100 0.180 0.040 -0.150 EVA10200 1952 -0.056 -0.105 -0.015 -0.042 0.026 0.233 0.389 0.360 0.455 0.275 -0.282 -0.151 EVB10170 1952 -0.110 -0.155 -0.059 -0.073 0.031 0.384 0.271 0.445 0.353 0.250 -0.333 -0.192 1952 -0.120 -0.159 EVB10070 -0.057 -0.066 0.037 0.386 0.267 0.434 0.339 0.243 -0.318 -0.183 EVF10005 1952 -0.126 -0.178 -0.047 -0.075 0.027 0.395 0.257 0.358 0.425 0.241 -0.264 -0.181 EVA10340 1952 -0.081 -0.163 -0.056 -0.094 0.385 0.004 0.244 0.398 0.479 0.276 -0.312 -0.227 EVA10240 1952 -0.086 -0.158 -0.059 -0.086 0.012 0.384 0.382 0.249 0.473 0.271 -0.325 -0.220 EVB10040 1952 -0.122 -0.166 -0.053 -0.069 0.033 0.389 0.263 0.346 0.431 0.243 -0.299 -0.183 EVB10270 1952 -0.100 -0.151 -0.062 -0.074 0.028 0.382 0.262 0.355 0.458 0.259 -0.343 -0.204 1952 -0.070 -0.180 EVOAD412 -0.050 -0.090 -0.010 0.390 0.170 0.390 0.500 0.300 -0.250 -0.260

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cvp03 pit129.EVA

					сур	03_p1t129	J.EVA					
EVQAD413 -0.190	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490
EVQAD512 -0.230	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310
EV 513 -0.180	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012
-0.121 EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029
-0.186 EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023
-0.199 EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021
-0.230 EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021
-0.178 EVA10240 -0.175	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020
EVB10040 -0.210	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023
EVB10270 -0.174	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023
EVQAD412 -0.200	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030
EVQAD413 -0.100	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030
EVQAD512 -0.170	1953	0.050	-0.030	-0.090	0.040	0.080	0.420	0.330	0.490	0.410	0.250	0.080
EV 513 -0.250	1953	-0.120	-0.110	-0.130	-0.090	0.030	0.320	0.080	0.450	0.390	0.240	0.020
EVA10200 -0.042	1954	-0.091	0.179	0.234	0.088	-0.142	0.499	0.487	0.627	0.383	-0.156	0.019
EVB10170 -0.076	1954	-0.117	0.204	0.245	0.084	-0.239	0.553	0.548	0.636	0.418	-0.310	-0.013
EVB10070 -0.084	1954	-0.120	0.196	0.233	0.086	-0.258	0.549	0.533	0.601	0.416	-0.281	-0.026
EVF10005 -0.063	1954	-0.114	0.217	0.243	0.119	-0.228	0.574	0.556	0.570	0.431	-0.238	-0.047

cyp03\_pit129.EVA EVA10340 1954 -0.120 0.245 0.289 0.124 -0.120 0.561 0.617 0.722 0.403 -0.308 0.042 -0.034 EVA10240 -0.123 1954 0.231 0.275 0.110 -0.150 0.550 0.596 0.708 0.399 -0.309 0.037 -0.049 EVB10040 1954 -0.118 0.204 0.237 0.098 -0.247 0.558 0.541 0.590 0.421 -0.266 -0.034 -0.077 EVB10270 1954 -0.124 0.207 0.252 0.085 -0.212 0.541 0.557 0.670 -0.314 0.402 0.015 -0.073 EVOAD412 1954 -0.160 0.260 0.300 0.180 0.000 0.520 0.650 0.750 0.330 -0.180 0.120 -0.020 EVQAD413 1954 -0.140 0.130 0.200 -0.020 -0.350 0.470 0.460 0.700 0.370 -0.420 0.040 -0.150 EVQAD512 1954 -0.060 0.310 0.350 0.140 -0.080 0.660 0.700 0.780 0.500 -0.440 -0.010 0.030 1954 -0.110 EV 513 0.230 0.250 0.140 -0.210 0.590 0.570 0.550 0.440 -0.210 -0.060 -0.050 EVA10200 1955 -0.026 0.161 -0.056 0.079 0.032 0.374 0.237 0.118 0.202 0.179 0.227 0.084 EVB10170 1955 -0.071 -0.106 0.148 0.099 0.031 0.337 0.200 0.000 0.158 0.198 0.247 0.069 EVB10070 -0.120 1955 -0.083 0.156 0.103 0.323 0.010 0.157 -0.023 0.185 0.142 0.227 0.060 EVF10005 1955 -0.093 -0.132 0.189 0.126 -0.002 0.333 0.147 -0.039 0.243 0.190 0.223 0.060 EVA10340 1955 -0.044 0.172 -0.075 0.104 0.072 0.401 0.328 0.070 0.237 0.297 0.290 0.100 EVA10240 1955 -0.049 -0.081 0.162 0.097 0.385 0.062 0.299 0.058 0.206 0.262 0.278 0.093 EVB10040 1955 -0.087 -0.124 0.168 0.111 0.327 0.006 0.153 -0.029 0.159 0.206 0.225 0.060 EVB10270 1955 -0.061 -0.094 0.146 0.091 0.237 0.043 0.352 0.256 0.027 0.158 0.203 0.078 EVQAD412 1955 -0.040 -0.070 0.230 0.100 0.050 0.450 0.370 0.110 0.250 0.360 0.270 0.120 EVOAD413 1955 -0.050 -0.080 0.050 0.030 0.050 0.290 0.190 -0.010 0.030 0.000 0.240 0.060 EVQAD512 1955 -0.020 -0.050 0.160 0.140 0.150 0.440 0.450 0.100 0.390 0.420 0.380 0.120

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cvp03 pit129.EVA EV 513 1955 -0.100 -0.140 0.210 0.140 -0.010 0.340 0.140 -0.050 0.220 0.280 0.220 0.060 EVA10200 1956 0.005 -0.102 0.143 0.095 0.120 0.288 0.389 0.460 0.414 0.191 -0.135 0.028 EVB10170 1956 -0.038 -0.180 0.095 0.067 0.055 0.234 0.378 0.385 0.343 0.130 -0.122 -0.007 EVB10070 0.053 0.317 1956 -0.043 -0.184 0.033 0.031 0.193 0.343 0.297 0.100 -0.127 -0.023 -0.053 -0.169 EVF10005 0.051 0.006 0.209 0.319 0.299 0.100 -0.129 1956 0.037 0.341 -0.033 0.182 0.575 EVA10340 -0.022 -0.130 0.226 0.162 0.366 0.512 0.225 -0.136 1956 0.553 0.036 EVA10240 1956 -0.022 -0.142 0.195 0.153 0.148 0.328 0.526 0.517 0.473 0.202 -0.136 0.028 -0.047 -0.179 EVB10040 1956 0.053 0.035 0.022 0.199 0.317 0.343 0.297 0.100 -0.127 -0.027 EVB10270 -0.028 -0.167 0.130 0.096 0.102 0.259 0.428 0.436 0.390 0.154 -0.130 1956 0.008 EVOAD412 1956 0.000 -0.060 0.270 0.230 0.290 0.390 0.640 0.680 0.610 0.260 -0.190 0.050 0.140 0.310 0.290 0.100 -0.120 EVOAD413 1956 -0.010 -0.230 0.060 0.020 0.110 0.350 0.010 0.320 EVQAD512 -0.040 -0.140 0.360 0.290 0.110 0.550 0.780 0.620 0.630 -0.080 1956 0.070 1956 -0.060 -0.160 0.050 0.300 0.100 EV 513 0.040 -0.010 0.220 0.320 0.340 -0.130 -0.040 -0.029 -0.148 -0.176 EVA10200 -0.118 -0.114 -0.141 -0.201 0.065 0.170 0.285 0.304 1957 0.007 -0.191 -0.215 -0.224 -0.431 0.251 -0.110 -0.392 -0.246 EVB10170 0.088 0.047 0.240 1957 0.014 -0.117 -0.438 -0.257 EVB10070 -0.204 -0.240 -0.234 -0.431 0.131 0.017 0.190 0.230 0.016 EVF10005 1957 -0.195 -0.246 -0.219 -0.412 0.216 0.019 0.196 0.236 -0.101 -0.488 -0.253 0.043 EVA10340 1957 -0.138 -0.122 -0.182 -0.281 0.066 0.171 0.420 0.327 -0.105 -0.231 -0.180 0.014 0.307 -0.114 -0.253 -0.193 1957 -0.152 -0.140 -0.196 -0.303 EVA10240 0.060 0.143 0.377 0.006

cyp03 pit129.EVA 1957 -0.201 -0.242 -0.229 EVB10040 -0.424 0.161 0.017 0.232 -0.111 -0.456 -0.255 0.192 0.026 EVB10270 1957 -0.179 -0.185 -0.219 -0.372 0.059 0.083 0.287 -0.122 -0.321 -0.225 0.269 0.001 EVOAD412 1957 -0.110 -0.050 -0.170 0.040 0.160 0.260 0.510 0.360 -0.160 -0.080 -0.100 -0.010 EVQAD413 -0.230 -0.220 1957 -0.280 -0.490 -0.140 0.010 0.170 0.210 -0.170 -0.280 -0.270 -0.070 EVQAD512 1957 -0.090 -0.090 -0.120 -0.500 -0.010 0.230 0.570 0.400 0.000 -0.260 -0.190 0.080 EV 513 -0.190 -0.250 1957 -0.210 -0.400 0.270 0.020 0.200 0.240 -0.090 -0.520 -0.250 0.060 EVA10200 1958 -0.005 0.001 0.064 -0.070 0.109 0.232 0.123 0.094 -0.086 0.109 -0.099 0.046 EVB10170 1958 -0.015 0.067 -0.025 -0.151 0.342 -0.039 0.132 -0.010 0.034 -0.314 -0.087 0.075 EVB10070 1958 -0.020 -0.028 0.060 -0.179 0.364 -0.093 0.109 -0.048 -0.378 0.029 -0.094 0.077 EVF10005 1958 -0.014 0.002 -0.210 0.060 0.435 -0.109 0.140 -0.006 -0.453 0.048 -0.073 0.079 EVA10340 1958 -0.009 -0.004 -0.079 0.078 0.317 0.128 0.195 0.140 -0.161 0.081 -0.063 0.043 EVA10240 1958 -0.014 0.074 -0.016 -0.089 0.307 0.092 0.168 0.094 -0.182 0.069 -0.075 0.046 EVB10040 1958 -0.018 0.060 -0.017 -0.190 -0.099 0.390 -0.033 -0.405 0.120 0.036 -0.087 0.077 EVB10270 1958 -0.019 -0.033 -0.119 0.067 0.306 0.012 0.129 0.012 -0.244 0.043 -0.092 0.060 EVOAD412 1958 -0.040 -0.010 -0.040 0.060 0.300 0.200 0.150 0.190 -0.100 0.140 -0.080 -0.030 EVQAD413 1958 -0.040 -0.120 0.060 -0.080 0.140 -0.040 0.010 -0.180 -0.140 -0.030 -0.160 0.070 EVQAD512 1958 0.050 0.120 0.070 -0.060 0.380 0.260 0.390 0.340 -0.100 0.090 0.020 0.100 EV 513 1958 -0.010 0.060 0.020 -0.230 0.480 -0.120 0.160 0.020 -0.500 0.060 -0.060 0.080 EVA10200 1959 0.046 -0.102 0.190 0.086 0.040 0.160 0.037 0.339 0.270 0.058 0.009 -0.115

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cyp03 pit129.EVA EVB10170 1959 0.043 -0.142 0.218 0.211 0.038 0.022 0.059 -0.024 0.132 -0.028 0.342 -0.233 EVB10070 1959 0.040 -0.144 0.209 0.047 -0.016 0.155 -0.044 0.346 0.203 0.056 0.007 -0.240 EVF10005 0.046 -0.129 0.228 -0.031 0.201 -0.035 0.213 1959 0.037 0.361 0.077 0.009 -0.246 EVA10340 1959 0.048 -0.128 0.241 0.106 -0.002 0.092 0.035 0.327 0.258 -0.019 0.070 -0.170 EVA10240 -0.135 0.228 0.004 0.092 0.019 0.246 1959 0.044 0.099 0.326 -0.012 0.057 -0.177 0.172 EVB10040 1959 0.042 -0.139 0.216 0.043 -0.021 -0.041 0.351 0.207 0.064 0.007 -0.242 EVB10270 1959 0.040 -0.145 0.213 0.078 -0.001 0.104 -0.014 0.330 0.222 0.012 0.033 -0.205 EVOAD412 0.210 0.120 0.080 0.070 0.300 -0.070 0.080 1959 0.030 -0.130 0.150 0.300 -0.060 -0.070 0.170 0.000 EVQAD413 1959 0.020 -0.190 0.150 0.080 0.030 0.010 0.300 -0.010 -0.220 EVQAD512 0.090 -0.090 0.340 0.100 -0.160 0.100 0.090 0.360 0.280 -0.010 0.130 1959 -0.240 0.090 EV 513 1959 0.050 -0.120 0.240 0.030 -0.040 0.230 -0.030 0.370 0.220 0.010 -0.250 EVA10200 0.316 0.052 0.121 0.021 1960 -0.024 0.001 0.173 0.249 0.182 0.222 0.242 -0.101 0.410 0.050 -0.036 -0.082 -0.009 EVB10170 0.188 0.270 0.144 0.216 1960 -0.042 0.334 -0.260 0.047 EVB10070 1960 -0.040 -0.050 0.190 0.336 0.282 0.146 0.426 0.216 -0.109 -0.032 -0.250 EVF10005 -0.034 -0.056 0.196 0.345 0.324 0.161 0.453 0.231 -0.128 0.049 -0.062 1960 -0.244 EVA10340 0.179 0.247 0.174 0.348 0.213 -0.005 0.077 0.061 1960 -0.036 -0.012 0.307 -0.189 EVA10240 -0.017 0.179 0.167 0.353 0.209 -0.019 0.072 0.053 1960 -0.040 0.309 0.241 -0.194 EVB10040 1960 -0.038 -0.052 0.192 0.339 0.297 0.151 0.436 0.221 -0.116 0.047 -0.043 -0.248 EVB10270 -0.042 -0.030 0.182 0.319 0.244 0.151 0.377 0.207 -0.054 0.059 0.024 1960 -0.224

cyp03\_pit129.EVA EVQAD412 1960 -0.070 0.020 0.160 0.250 0.210 0.240 0.260 0.190 0.030 0.120 0.120 0.030 EVQAD413 1960 -0.060 -0.030 0.170 0.310 0.150 0.100 0.340 0.170 -0.050 0.040 0.060 -0.270 EVOAD512 1960 0.020 -0.020 0.200 0.360 0.310 0.140 0.410 0.260 0.040 0.060 0.050 -0.390 EV 513 1960 -0.030 -0.060 0.200 0.350 0.350 0.170 0.470 0.240 -0.140 0.050 -0.080 -0.240 EVA10200 1961 0.063 -0.027 -0.005 0.283 0.160 -0.056 0.102 0.311 0.182 0.149 -0.204 -0.107 EVB10170 1961 -0.081 0.012 -0.042 0.407 0.259 -0.276 0.104 0.308 0.109 0.100 -0.219 -0.169 EVB10070 1961 0.014 -0.043 -0.094 0.422 0.272 -0.324 0.095 0.306 0.090 0.086 -0.224 -0.183 EVF10005 -0.041 1961 -0.019 -0.061 0.470 0.308 -0.401 0.141 0.333 -0.215 0.084 0.113 -0.181 EVA10340 1961 0.004 -0.047 0.010 0.368 0.214 -0.163 0.148 0.321 0.170 -0.214 0.157 -0.123 EVA10240 1961 0.017 -0.048 -0.016 0.363 0.213 -0.171 0.125 0.310 0.147 -0.219 0.146 -0.135 EVB10040 1961 0.002 -0.043 -0.082 0.439 0.285 -0.352 0.112 0.316 0.096 -0.221 0.088 -0.183 EVB10270 1961 0.028 -0.046 -0.066 0.373 0.227 -0.213 0.093 0.298 0.122 -0.224 0.108 -0.158 EVQAD412 0.050 -0.070 1961 0.090 0.300 0.140 -0.090 0.130 0.300 0.160 0.200 -0.240 -0.110 EVQAD413 1961 0.120 -0.200 -0.050 0.270 0.160 -0.080 -0.050 0.220 0.110 0.000 -0.250 -0.190 EVOAD512 1961 -0.110 -0.020 0.070 0.460 0.290 -0.180 0.290 0.400 0.220 0.260 -0.160 -0.070 EV 513 1961 -0.040 -0.040 -0.040 0.500 0.330 -0.450 0.170 0.130 -0.210 0.350 0.080 -0.180 EVA10200 1962 -0.079 0.021 0.138 0.072 0.300 0.126 0.340 0.449 0.060 -0.038 -0.035 0.053 EVB10170 1962 -0.114 0.028 0.199 0.071 0.390 0.069 0.398 0.504 0.003 -0.099 -0.122 0.039 EVB10070 1962 -0.120 0.039 0.215 0.074 0.380 0.096 0.413 0.509 0.022 -0.096 -0.136 0.030

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cyp03 pit129.EVA EVF10005 1962 -0.114 0.082 0.261 0.065 0.380 0.129 0.423 0.534 0.070 -0.025 -0.145 0.018 EVA10340 1962 -0.102 0.031 0.153 0.399 0.024 0.353 0.059 0.481 -0.023 -0.057 -0.017 0.051 EVA10240 1962 -0.108 0.021 0.151 0.064 0.394 0.030 0.361 0.477 -0.027 -0.082 -0.032 0.050 EVB10040 0.232 1962 -0.118 0.054 0.071 0.380 0.108 0.417 0.518 0.039 -0.070 -0.139 0.026 EVB10270 0.388 -0.023 1962 -0.116 0.012 0.163 0.047 0.072 0.381 0.483 -0.116 -0.079 0.046 EVQAD412 0.040 0.330 1962 -0.120 0.040 0.080 -0.030 0.060 0.360 0.420 -0.040 0.150 0.040 0.380 EVOAD413 1962 -0.140 -0.100 0.070 0.100 -0.010 0.380 0.430 -0.130 -0.320 -0.110 0.070 -0.050 0.070 EVOAD512 1962 0.240 0.030 0.470 -0.030 0.330 0.000 0.060 -0.110 0.560 0.070 EV 513 -0.110 0.110 0.290 0.380 0.150 0.430 0.020 -0.150 1962 0.060 0.550 0.100 0.010 EVA10200 1963 0.033 0.124 0.141 -0.002 0.177 0.316 0.132 0.440 0.351 0.409 -0.004 -0.037 EVB10170 0.179 0.289 1963 0.023 0.131 0.161 -0.081 0.283 0.294 0.419 0.437 -0.025 -0.100 EVB10070 0.017 0.127 0.168 -0.090 0.305 0.299 0.162 0.267 0.436 -0.037 1963 0.399 -0.116 0.019 0.224 -0.096 0.318 0.198 0.251 0.451 -0.039 EVF10005 1963 0.123 0.345 0.418 -0.125 0.181 -0.017 EVA10340 0.036 0.218 0.296 0.204 0.361 0.452 0.032 1963 0.140 0.506 -0.044 0.446 0.022 EVA10240 1963 0.031 0.139 0.164 -0.025 0.222 0.292 0.182 0.482 0.349 -0.055 0.188 EVB10040 1963 0.017 0.125 -0.092 0.320 0.306 0.175 0.406 0.261 0.441 -0.037 -0.119 EVB10270 1963 0.024 0.135 0.144 -0.054 0.246 0.288 0.160 0.436 0.317 0.436 -0.005 -0.081 0.190 EVOAD412 1963 0.020 0.140 0.090 0.150 0.310 0.100 0.560 0.410 0.460 0.100 -0.010 EVQAD413 1963 0.010 0.140 -0.010 -0.070 0.180 0.240 0.050 0.340 0.320 0.390 -0.030 -0.090

cyp03 pit129.EVA EVOAD512 1963 0.080 0.150 0.260 0.260 -0.080 0.300 0.430 0.580 0.380 0.480 0.020 -0.020 ΕV 513 1963 0.120 0.020 0.260 -0.100 0.370 0.330 0.220 0.430 0.240 0.460 -0.040 -0.130 EVA10200 1964 0.052 -0.017 0.001 -0.077 0.163 0.416 0.434 0.144 0.044 0.283 -0.016 0.005 EVB10170 1964 0.037 -0.031 -0.008 -0.095 0.220 0.418 0.474 0.086 0.012 0.305 0.006 -0.066 EVB10070 1964 0.030 -0.034 -0.010 -0.098 0.227 0.420 0.449 0.053 0.022 0.303 0.013 -0.103 EVF10005 1964 0.018 -0.025 0.002 -0.050 0.229 0.426 0.468 0.069 0.076 0.307 0.023 -0.126 EVA10340 1964 0.041 -0.026 -0.017 -0.052 0.190 0.417 0.567 0.173 -0.008 0.292 -0.006 0.038 EVA10240 0.042 -0.031 -0.021 -0.073 1964 0.195 0.416 0.540 0.143 -0.019 0.291 -0.005 0.018 EVB10040 0.026 -0.031 -0.006 1964 -0.081 0.227 0.422 0.456 0.059 0.041 0.305 0.017 -0.111 EVB10270 1964 0.041 -0.035 -0.020 -0.103 0.209 0.416 0.491 0.095 -0.021 0.295 -0.001 -0.029 EVQAD412 1964 0.030 -0.040 -0.070 -0.040 0.160 0.420 0.600 0.140 -0.070 0.240 0.000 0.080 EVOAD413 1964 0.070 -0.060 -0.050 -0.250 0.400 0.220 0.390 0.000 -0.150 0.290 -0.020 -0.030 EVQAD512 1964 0.050 0.010 0.050 0.060 0.190 0.420 0.680 0.370 0.110 0.350 -0.020 0.110 EV 513 1964 0.010 -0.020 0.010 -0.020 0.230 0.430 0.480 0.080 0.110 0.310 0.030 -0.140 EVA10200 1965 -0.043 -0.111 0.042 0.254 -0.106 0.254 0.446 0.438 0.139 0.274 0.032 -0.018 EVB10170 1965 -0.129 -0.015 -0.234 0.329 -0.216 0.218 0.546 0.437 0.087 0.072 0.283 -0.106 EVB10070 1965 -0.146 -0.240 -0.030 0.346 -0.212 0.206 0.552 0.426 0.070 0.296 0.096 -0.135 EVF10005 1965 -0.161 -0.246 -0.036 0.373 -0.254 0.221 0.600 0.441 0.070 0.311 0.105 -0.181 EVA10340 -0.063 -0.168 1965 0.033 0.297 -0.206 0.256 0.551 0.482 0.072 0.253 0.054 -0.034

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cyp03 pit129.EVA -0.073 -0.175 EVA10240 1965 0.023 0.300 -0.192 0.242 0.537 0.468 0.071 0.257 0.058 -0.040 EVB10040 0.070 1965 -0.151 -0.242 -0.032 0.356 -0.227 0.211 0.569 0.431 0.301 0.099 -0.152 EVB10270 -0.102 -0.204 0.001 1965 0.311 -0.186 0.220 0.526 0.443 0.071 0.270 0.073 -0.067 EVQAD412 0.250 1965 0.000 -0.040 0.060 0.290 -0.100 0.530 0.060 0.240 0.020 0.500 0.010 -0.080 EVQAD413 1965 -0.100 -0.220 -0.010 0.260 0.160 0.400 0.380 0.070 0.250 0.070 0.010 EVOAD512 1965 -0.070 -0.260 0.060 0.290 -0.390 0.340 0.640 0.090 0.240 0.060 0.540 -0.040 EV 513 -0.170 -0.250 -0.040 0.390 0.070 1965 -0.280 0.230 0.630 0.450 0.320 0.110 -0.210 EVA10200 -0.111 -0.125 0.251 0.025 0.162 0.493 0.299 0.124 0.153 1966 0.071 0.089 -0.136 0.273 EVB10170 1966 -0.164 -0.126 -0.210 0.312 0.544 0.369 0.013 0.063 0.120 0.107 -0.208 0.280 EVB10070 1966 -0.173 -0.114 -0.195 0.367 0.563 0.378 0.039 0.080 0.119 0.093 -0.221 EVF10005 1966 -0.177 -0.105 0.286 -0.235 0.449 0.579 0.428 0.076 0.092 0.144 0.103 -0.196 0.171 0.361 EVA10340 1966 -0.148 -0.190 0.262 -0.105 0.490 -0.035 0.023 0.142 0.171 -0.141 EVA10240 -0.152 -0.180 0.264 -0.096 0.185 0.499 0.350 -0.031 0.031 0.131 0.155 1966 -0.161 EVB10040 -0.175 -0.111 0.282 -0.210 0.397 0.569 0.396 0.052 0.084 0.128 0.097 1966 -0.212 EVB10270 -0.160 -0.152 0.269 -0.131 0.522 0.344 -0.013 0.048 0.116 0.122 1966 0.239 -0.199 EVQAD412 -0.160 -0.270 0.270 0.290 0.080 0.460 0.330 -0.040 0.020 0.150 0.220 1966 -0.100 0.220 EVQAD413 1966 -0.160 -0.140 0.260 -0.070 0.110 0.510 -0.080 0.040 0.040 0.060 -0.300 EVQAD512 0.180 -0.110 -0.160 0.240 -0.560 0.470 0.450 1966 -0.060 -0.020 0.190 0.210 -0.070 513 EV -0.180 -0.100 0.290 -0.260 0.500 0.590 0.100 1966 0.460 0.100 0.160 0.110 -0.180

cyp03 pit129.EVA EVA10200 1967 0.095 0.053 0.218 0.007 -0.106 0.407 0.212 0.437 0.146 0.147 0.066 -0.142 EVB10170 1967 0.094 0.044 0.266 -0.027 -0.241 0.436 0.245 0.465 0.116 0.151 0.105 -0.295 EVB10070 1967 0.087 0.276 -0.024 0.040 -0.279 0.441 0.240 0.456 0.156 0.205 0.110 -0.313 EVF10005 1967 0.089 0.046 0.303 -0.009 -0.316 0.514 0.246 0.477 0.177 0.251 0.122 -0.311 EVA10340 1967 0.113 0.064 -0.004 0.241 -0.107 0.238 0.474 0.489 0.009 0.031 0.106 -0.172 EVA10240 1967 0.107 0.057 0.240 -0.009 -0.126 0.449 0.235 0.476 0.031 0.053 0.104 -0.194 EVB10040 1967 0.087 0.042 0.286 -0.019 -0.292 0.467 0.242 0.464 0.164 0.222 0.114 -0.313 EVB10270 1967 0.097 0.047 0.246 -0.022 -0.184 0.417 0.235 0.459 0.081 0.101 0.106 -0.252 EVQAD412 1967 0.110 0.070 0.210 0.050 0.020 0.490 0.180 0.460 -0.020 0.030 0.120 -0.010 EVOAD413 1967 0.080 0.020 0.190 -0.070 -0.160 0.210 0.220 0.390 0.090 0.060 0.070 -0.320 EVQAD512 1967 0.150 0.090 0.280 -0.030 -0.130 0.320 0.590 0.590 -0.090 -0.100 0.100 -0.220 EV 513 1967 0.090 0.050 0.320 -0.340 0.000 0.250 0.560 0.490 0.190 0.280 0.130 -0.310 EVA10200 1968 -0.166 0.045 0.055 -0.026 -0.028 0.086 0.236 0.389 -0.008 0.195 -0.190 0.035 EVB10170 1968 -0.270 0.028 0.049 -0.065 -0.104 0.052 0.272 0.389 -0.173 0.120 -0.246 0.001 EVB10070 1968 -0.302 0.024 0.072 -0.092 -0.073 0.062 -0.212 0.266 0.373 0.103 -0.256 -0.010 EVF10005 1968 -0.350 -0.003 0.120 -0.122 0.015 0.275 0.104 0.389 0.113 -0.265 -0.242 -0.016 EVA10340 -0.216 1968 0.016 -0.059 0.066 -0.037 0.029 0.270 0.440 -0.065 0.207 -0.207 0.037 EVA10240 1968 -0.052 -0.220 0.024 0.049 -0.058 0.265 0.022 0.422 -0.085 0.187 -0.213 0.030 EVB10040 1968 -0.319 0.014 0.089 -0.103 -0.041 0.077 0.269 0.379 -0.223 0.107 -0.259 -0.012

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cyp03 pit129.EVA EVB10270 1968 -0.239 0.035 -0.012 -0.007 -0.101 0.263 0.025 0.393 -0.133 0.143 -0.230 0.014 EVQAD412 1968 -0.220 0.000 -0.230 0.240 0.190 -0.020 0.220 0.430 -0.020 0.290 -0.170 0.060 EVQAD413 1968 -0.150 0.110 -0.080 0.000 -0.350 -0.070 0.240 0.320 -0.120 0.070 -0.230 0.010 EVOAD512 1968 -0.180 -0.010 0.080 -0.020 -0.170 0.350 0.110 0.550 0.000 0.230 -0.210 0.050 EV 513 -0.380 -0.020 0.150 1968 -0.140 0.070 0.130 0.280 0.400 -0.260 0.120 -0.270 -0.020 EVA10200 0.416 0.476 1969 0.021 -0.003 0.041 0.068 0.106 0.511 0.274 0.067 -0.071 -0.144 EVB10170 -0.021 1969 0.003 -0.003 0.089 0.104 0.447 0.548 0.518 0.258 0.006 -0.205 -0.242 EVB10070 0.536 1969 0.008 -0.032 -0.016 0.078 0.126 0.449 0.523 0.256 0.016 -0.252 -0.238 EVF10005 1969 0.064 -0.062 -0.049 0.036 0.135 0.480 0.551 0.521 0.265 0.025 -0.306 -0.208 EVA10340 1969 0.048 -0.025 0.001 0.095 0.040 0.450 0.590 0.515 0.252 -0.013 -0.039 -0.191 EVA10240 1969 0.027 -0.021 0.005 0.102 0.054 0.440 0.576 0.519 0.250 -0.009 -0.060 -0.204 EVB10040 1969 0.028 -0.043 -0.028 0.541 0.063 0.129 0.460 0.523 0.259 0.019 -0.271 -0.227 EVB10270 0.009 1969 -0.004 -0.014 0.107 0.084 0.432 0.552 0.522 0.250 0.000 -0.129 -0.232 EVQAD412 1969 0.100 -0.070 -0.020 0.100 0.020 0.420 0.590 0.550 0.220 0.000 0.130 -0.090 EVOAD413 -0.170 0.090 0.100 0.490 0.230 -0.010 1969 0.060 0.210 0.350 0.530 -0.080 -0.330 EVOAD512 1969 0.100 0.000 0.000 0.050 -0.020 0.530 0.670 0.460 0.300 -0.050 -0.090 -0.230 EV 513 1969 0.100 -0.080 -0.070 0.010 0.140 0.500 0.560 0.520 0.270 0.030 -0.340 -0.190 EVA10200 0.221 0.332 0.193 1970 0.077 -0.044 0.113 0.040 0.291 0.345 -0.057 0.043 0.040 EVB10170 0.101 -0.153 1970 0.082 0.019 0.274 0.268 0.292 0.335 0.167 -0.235 0.059 0.017

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cyp03 pit129.EVA EVB10070 1970 0.106 -0.150 0.086 0.016 0.292 0.256 0.244 0.331 0.184 -0.246 0.046 -0.003 EVF10005 1970 0.115 -0.144 0.107 0.037 0.322 0.271 0.217 0.398 0.163 -0.273 0.055 -0.007 EVA10340 1970 0.072 -0.091 0.107 0.062 0.259 0.303 0.437 0.078 -0.171 0.405 0.112 0.068 EVA10240 1970 0.075 -0.098 0.099 0.049 0.260 0.289 0.409 0.375 0.102 -0.174 0.098 0.055 EVB10040 1970 0.109 -0.148 0.094 0.024 0.303 0.261 0.234 0.355 -0.256 0.177 0.049 -0.005 EVB10270 1970 0.087 -0.126 0.085 0.025 0.263 0.268 0.342 0.328 0.149 -0.198 0.071 0.030 EVOAD412 1970 0.030 0.060 0.160 0.110 0.300 0.290 0.510 0.450 0.010 -0.050 0.140 0.070 EVQAD413 1970 0.080 -0.170 0.020 -0.050 0.200 0.210 0.330 0.120 0.250 -0.160 0.020 0.010 EVQAD512 1970 0.100 -0.210 0.090 0.080 0.210 0.390 0.520 0.520 0.020 -0.280 0.160 0.140 EV 513 1970 0.120 -0.140 0.120 0.050 0.340 0.280 0.200 0.440 0.150 -0.290 0.060 -0.010 EVA10200 1971 0.101 0.000 0.229 0.214 0.110 0.489 0.020 0.199 0.260 0.171 0.004 -0.278 EVB10170 1971 0.126 -0.030 0.227 0.240 0.157 0.492 -0.022 0.145 0.226 0.081 -0.026 -0.285 EVB10070 1971 0.123 -0.043 0.216 0.233 0.163 0.480 -0.022 0.224 0.127 0.100 -0.030 -0.261 EVF10005 1971 0.139 -0.041 0.231 0.243 0.186 0.474 0.047 0.129 0.209 0.112 -0.030 -0.236 EVA10340 1971 0.130 0.010 0.283 0.278 0.149 0.526 0.044 0.187 0.209 0.093 0.026 -0.388 EVA10240 1971 0.123 0.000 0.268 0.267 0.145 0.519 0.015 0.174 0.215 0.096 0.019 -0.374 EVB10040 1971 0.129 -0.043 0.221 0.237 0.171 0.478 0.003 0.127 0.219 0.104 -0.030 -0.252 EVB10270 1971 0.117 -0.021 0.238 0.247 0.145 0.503 -0.029 0.152 0.225 0.092 -0.005 -0.330 EVQAD412 1971 0.100 0.020 0.320 0.310 0.130 0.540 0.100 0.170 0.180 0.220 0.120 -0.510

cyp03 pit129.EVA 0.270 0.060 -0.030 EVOAD413 1971 0.070 -0.050 0.170 0.200 0.090 0.500 -0.240 0.120 -0.340 0.550 0.140 0.280 0.210 -0.060 -0.030 0.060 0.330 0.300 0.190 EVQAD512 1971 0.200 -0.340 0.470 0.090 0.200 0.120 -0.030 0.150 -0.040 0.240 0.250 0.200 0.130 EV 513 1971 -0.220 -0.140 -0.176 0.202 0.299 0.114 0.210 0.246 0.440 EVA10200 1972 -0.038 0.171 0.206 -0.066 0.274 0.158 0.268 0.446 0.057 -0.245 -0.225 0.207 0.225 EVB10170 1972 -0.156 0.211 -0.136 0.053 -0.257 -0.240 0.210 0.207 0.276 0.138 0.240 0.446 EVB10070 1972 -0.182 0.187 -0.147 -0.259 -0.228 EVF10005 0.216 0.183 0.191 0.291 0.108 0.240 0.455 0.069 1972 -0.230 -0.143 -0.228 -0.155 0.379 0.271 0.067 EVA10340 1972 -0.078 0.208 0.254 0.265 0.213 0.452 -0.082 0.207 0.059 -0.235 -0.173 0.241 0.258 0.268 0.355 0.449 EVA10240 1972 -0.082 0.206 -0.094 0.240 -0.257 -0.236 0.281 0.127 0.449 0.059 0.185 0.201 EVB10040 1972 -0.199 0.212 -0.145 -0.244 -0.210 0.266 0.186 0.301 0.445 0.050 EVB10270 0.205 0.218 0.241 1972 -0.111 -0.120 0.250 0.460 0.460 0.040 -0.260 -0.110 0.270 0.260 EVQAD412 1972 0.010 0.180 0.240 -0.030 -0.250 -0.280 0.230 0.230 0.240 0.420 0.000 EVOAD413 1972 -0.030 0.190 0.200 0.260 -0.160 -0.160 -0.100 0.140 0.250 0.340 0.300 0.300 0.210 0.430 0.460 EVOAD512 1972 -0.140 -0.070 0.080 -0.260 -0.220 0.460 1972 -0.260 0.220 0.180 0.180 0.300 0.090 0.240 EV 513 -0.140 -0.130 -0.054 -0.005 -0.084 0.218 0.039 0.216 0.433 EVA10200 1973 -0.062 0.045 -0.047 0.015 -0.260 -0.248 -0.001 -0.081 0.332 -0.074 0.159 0.460 0.062 -0.061 EVB10170 1973 -0.129 0.016 -0.074 0.117 0.459 -0.251 -0.235 -0.014 -0.081 -0.036 0.349 0.069 EVB10070 1973 -0.140 0.007 0.380 -0.065 0.094 0.484 -0.232 -0.189 0.019 0.094 -0.038 0.041 EVF10005 1973 -0.152 0.009

cyp03\_pit129.EVA EVA10340 1973 -0.097 0.051 -0.051 -0.090 0.275 -0.056 0.282 0.470 -0.274 -0.153 0.078 0.023 EVA10240 1973 -0.101 0.047 -0.069 -0.100 0.278 -0.060 0.258 -0.274 -0.171 0.460 0.053 0.018 EVB10040 1973 -0.144 0.078 -0.066 -0.008 0.360 -0.071 0.109 0.468 -0.244 -0.218 -0.002 0.007 EVB10270 1973 -0.114 0.048 -0.091 -0.100 0.300 -0.070 0.201 -0.271 0.450 -0.221 0.009 0.012 EVQAD412 1973 -0.070 0.030 -0.050 -0.110 0.200 -0.020 0.340 0.450 -0.270 0.130 0.090 -0.020 EVQAD413 1973 -0.100 -0.010 -0.220 -0.280 0.250 -0.100 0.190 0.380 -0.310 -0.380 -0.120 0.000 EVQAD512 1973 -0.100 0.090 0.040 -0.020 0.330 -0.070 0.360 0.540 -0.280 -0.3100.160 0.100 EV 513 1973 -0.160 0.110 -0.010 0.090 0.400 -0.060 0.080 0.500 -0.220 -0.160 0.040 0.010 EVA10200 1974 -0.139 0.227 0.142 0.143 0.128 0.137 0.370 0.091 -0.208 0.076 -0.124 0.024 EVB10170 1974 -0.233 0.159 0.265 0.207 0.134 0.070 0.387 -0.008 -0.119 -0.331 0.005 0.061 EVB10070 1974 -0.263 0.150 0.266 0.197 0.136 0.057 0.356 -0.017 -0.343 0.000 -0.121 0.066 EVF10005 1974 -0.279 0.150 0.281 0.187 0.151 0.139 0.365 -0.019 -0.341 -0.096 -0.006 0.087 EVA10340 1974 -0.152 0.178 0.260 0.185 0.163 0.180 0.490 0.022 -0.330 0.020 -0.103 0.027 EVA10240 1974 -0.169 0.172 0.256 0.187 0.137 0.156 0.462 0.016 -0.336 0.018 -0.113 0.026 EVB10040 1974 -0.269 0.150 0.271 0.193 0.087 0.141 -0.017 -0.343 0.359 -0.002 -0.112 0.074 EVB10270 1974 -0.206 0.255 0.162 0.196 0.141 0.068 0.410 0.001 -0.340 0.012 -0.126 0.037 EVQAD412 1974 -0.130 0.170 0.230 0.090 0.240 0.220 0.520 -0.410 0.040 0.030 -0.110 -0.050 EVOAD413 1974 -0.210 0.150 0.220 0.230 0.090 -0.200 0.330 -0.010 -0.350 0.020 -0.200 0.000 EVOAD512 1974 -0.080 0.220 0.310 0.280 0.350 0.140 0.610 0.040 -0.210 0.020 -0.040 0.110

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cyp03 pit129.EVA EV 513 1974 -0.290 0.150 0.290 0.370 -0.340 -0.010 0.180 0.160 0.190 -0.020 -0.080 0.100 EVA10200 1975 0.074 0.033 0.073 -0.021 0.303 0.120 0.171 0.357 0.316 0.286 -0.003 -0.022 EVB10170 1975 0.068 -0.051 0.080 0.009 0.110 0.354 0.342 0.299 0.218 -0.001 0.103 -0.037 EVB10070 0.009 0.094 0.346 1975 0.054 -0.073 0.070 0.097 0.343 0.303 0.194 -0.023 -0.041 EVF10005 1975 0.039 -0.077 0.070 0.087 0.034 0.079 0.373 0.359 0.319 0.173 -0.021 -0.022 EVA10340 1975 0.087 0.077 0.133 0.001 0.130 0.379 0.357 0.300 0.304 0.070 0.056 -0.020 EVA10240 1975 0.084 0.037 0.073 0.131 -0.006 0.126 0.364 0.351 0.296 0.291 0.052 -0.030 0.349 EVB10040 1975 0.049 -0.075 0.070 0.093 0.018 0.089 0.356 0.309 0.187 -0.023 -0.034 EVB10270 1975 0.076 -0.014 0.072 0.119 -0.008 0.117 0.346 0.340 0.293 0.253 0.016 -0.042 0.350 EVQAD412 0.170 0.010 0.180 -0.050 0.100 0.370 0.300 0.380 0.090 1975 0.060 -0.030 0.070 -0.070 0.140 0.260 0.290 0.250 0.260 -0.030 EVOAD413 1975 0.100 -0.060 0.130 -0.100 0.100 0.490 0.380 0.320 0.300 0.150 EVOAD512 0.050 0.170 0.090 0.190 1975 0.140 0.040 0.030 -0.080 0.070 0.080 0.050 0.070 0.390 0.370 0.330 0.160 -0.020 EV 513 1975 -0.010 EVA10200 1976 0.091 0.098 -0.118 0.059 -0.031 0.132 0.197 0.429 0.044 0.011 0.042 -0.045 0.385 -0.054 0.071 EVB10170 1976 0.018 0.087 -0.194 0.098 -0.040 -0.034 0.160 -0.030 -0.132 EVB10070 0.079 -0.217 -0.040 -0.054 0.141 0.364 -0.051 -0.018 0.060 1976 -0.006 0.127 -0.147 EVF10005 0.098 -0.207 -0.040 -0.045 0.110 0.337 -0.032 0.012 0.066 1976 -0.021 0.129 -0.143 0.095 0.201 EVA10340 1976 0.119 0.137 -0.127 0.001 -0.044 0.445 -0.043 -0.060 0.106 -0.049 0.070 0.198 -0.049 -0.061 0.095 EVA10240 1976 0.102 0.122 -0.148 0.023 -0.043 0.438 -0.066

cyp03 pit129.EVA EVB10040 1976 -0.011 0.086 -0.213 0.127 -0.040 -0.051 0.130 0.354 -0.044 -0.007 0.062 -0.145 EVB10270 1976 0.057 0.095 0.071 -0.042 -0.184 0.008 0.183 0.414 -0.057 -0.052 0.076 -0.106 EVQAD412 1976 0.220 0.180 -0.130 -0.050 -0.050 0.260 0.220 0.490 -0.020 -0.090 0.110 0.040 EVQAD413 0.040 1976 0.020 -0.250 0.120 -0.040 -0.080 0.240 0.450 -0.110 -0.110 0.040 -0.160 EVQAD512 1976 0.110 0.170 -0.010 -0.070 0.060 -0.040 0.200 0.440 -0.040 -0.030 0.160 -0.050 EV 513 1976 -0.030 0.110 -0.200 0.130 -0.040 -0.040 0.090 0.320 -0.020 0.030 0.070 -0.140 EVA10200 1977 -0.077 0.055 0.033 0.174 0.250 0.284 0.350 0.250 0.258 0.286 -0.167 0.093 EVB10170 1977 -0.109 0.061 0.009 0.293 0.338 0.232 0.360 0.167 0.188 0.273 -0.176 0.066 EVB10070 1977 -0.114 0.066 0.009 0.323 0.340 0.233 0.333 0.141 0.273 -0.174 0.173 0.053 EVF10005 1977 -0.105 0.087 0.040 0.346 0.346 0.231 0.331 0.104 0.183 0.277 -0.147 0.057 EVA10340 1977 -0.101 0.060 0.032 0.175 0.241 0.317 0.444 0.223 0.258 0.284 -0.164 0.124 EVA10240 1977 -0.106 0.020 0.055 0.193 0.318 0.241 0.424 0.217 0.281 -0.173 0.241 0.111 EVB10040 1977 -0.111 0.074 0.020 0.331 0.233 0.342 0.333 0.128 0.177 0.275 -0.164 0.055 EVB10270 1977 -0.113 0.052 0.003 0.245 0.326 0.238 0.382 0.196 0.205 0.276 -0.184 0.082 EVQAD412 1977 -0.120 0.060 0.040 0.050 0.270 0.270 0.470 0.240 0.310 0.300 -0.160 0.170 EVQAD413 1977 -0.140 0.000 -0.090 0.250 0.320 0.240 0.340 0.260 0.140 0.260 -0.260 0.040 EVOAD512 1977 -0.050 0.080 0.090 0.200 0.360 0.210 0.530 0.240 0.300 0.280 -0.120 0.150 EV 513 1977 -0.100 0.100 0.060 0.360 0.350 0.230 0.330 0.080 0.190 0.280 -0.130 0.060 EVA10200 1978 -0.137 -0.018 0.058 0.214 0.095 0.430 0.487 0.488 0.299 0.330 -0.371 -0.078

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cyp03 pit129.EVA 1978 -0.242 -0.015 0.058 0.275 0.135 0.494 0.456 0.216 0.281 -0.414 EVB10170 0.446 -0.146 EVB10070 -0.263 -0.004 0.059 0.276 0.137 0.453 0.481 0.207 0.264 -0.422 1978 0.447 -0.167 EVF10005 -0.273 0.084 0.297 0.139 0.463 0.456 0.197 0.255 -0.359 1978 0.011 0.431 -0.169 0.115 0.430 0.553 0.269 0.359 -0.355 EVA10340 1978 -0.168 -0.049 0.059 0.278 0.501 -0.078 EVA10240 0.051 0.431 0.549 0.346 -0.385 1978 -0.182 -0.045 0.271 0.118 0.497 0.263 -0.094 EVB10040 0.137 0.472 0.203 0.261 -0.400 1978 -0.267 0.001 0.068 0.284 0.457 0.441 -0.167 -0.216 -0.031 EVB10270 1978 0.046 0.265 0.126 0.437 0.526 0.480 0.240 0.310 -0.426 -0.127 -0.110 -0.080 0.440 -0.360 EVOAD412 1978 0.030 0.260 0.080 0.420 0.640 0.570 0.350 -0.050 EVQAD413 -0.230 -0.050 -0.020 0.210 0.130 0.420 0.560 0.500 0.240 0.290 -0.620 1978 -0.160 0.220 0.130 0.140 0.430 0.490 0.450 0.350 -0.190 EVOAD512 1978 -0.150 -0.040 0.330 -0.020 0.250 0.100 0.140 0.470 0.440 0.420 0.190 -0.320 EV 513 1978 -0.280 0.020 0.310 -0.170 0.283 0.022 0.140 0.141 -0.007 -0.142 -0.081 0.012 -0.046 0.267 EVA10200 1979 0.043 -0.061 EVB10170 0.003 0.261 -0.053 0.286 0.022 0.128 -0.014 1979 -0.341 -0.140 -0.054 0.046 -0.099 EVB10070 1979 -0.392 -0.147 -0.061 0.045 0.025 0.239 -0.0780.302 0.014 0.123 -0.046 -0.100 0.146 -0.061 EVF10005 1979 -0.446 -0.137 -0.024 0.091 0.065 0.258 -0.042 0.350 0.005 -0.100 0.023 0.089 -0.062 0.323 0.066 0.250 0.069 0.140 0.068 EVA10340 1979 -0.166 -0.099 -0.097 0.301 0.031 0.245 0.063 0.129 0.050 EVA10240 1979 -0.190 -0.109 0.000 0.070 -0.058 -0.098 EVB10040 1979 -0.411 -0.143 0.062 0.040 0.246 -0.065 0.319 0.011 0.131 -0.051 -0.048 -0.100 0.043 0.117 0.011 EVB10270 -0.264 -0.131 -0.044 0.040 -0.034 0.265 -0.034 0.253 1979 -0.099

cyp03 pit129.EVA 1979 EVQAD412 0.000 -0.060 0.100 0.120 -0.130 0.300 0.130 0.200 0.140 0.100 0.080 -0.100 EVQAD413 1979 -0.180 -0.220 -0.180 -0.100 -0.100 0.180 -0.190 0.150 0.040 0.050 0.000 -0.100 EVOAD512 1979 -0.200 -0.080 0.070 0.160 -0.020 0.470 0.190 0.320 0.030 0.240 0.160 -0.090 EV 513 1979 -0.480 -0.130 0.000 0.120 0.090 -0.020 0.270 0.380 0.000 0.160 -0.070 -0.100 EVA10200 1980 -0.074 0.115 0.112 0.100 0.034 0.282 0.582 0.589 0.167 0.115 0.003 0.076 EVB10170 1980 -0.077 0.160 0.067 0.111 0.062 0.300 0.654 0.597 0.111 0.152 -0.005 0.084 EVB10070 1980 -0.074 0.162 0.044 0.090 0.034 0.299 0.657 0.590 0.128 0.149 -0.013 0.090 EVF10005 1980 -0.047 0.192 0.035 0.078 0.330 0.013 0.659 0.584 0.174 0.197 -0.017 0.102 EVA10340 1980 -0.091 0.138 0.155 0.148 0.087 0.293 0.669 0.636 0.081 0.166 0.033 0.074 EVA10240 1980 -0.097 0.147 0.123 0.139 0.079 0.283 0.668 0.631 0.070 0.027 0.156 0.074 EVB10040 1980 -0.064 0.173 0.041 0.086 0.027 0.310 0.657 0.588 0.153 0.158 -0.015 0.094 EVB10270 1980 -0.096 0.143 0.089 0.121 0.279 0.067 0.661 0.614 0.143 0.071 0.010 0.076 EVQAD412 1980 -0.140 0.120 0.170 0.120 0.220 0.000 0.720 0.690 0.020 0.150 0.080 0.070 EVQAD413 -0.160 1980 0.070 0.070 0.130 0.100 0.200 0.650 0.610 -0.090 0.070 0.000 0.050 EVQAD512 1980 -0.010 0.230 0.190 0.230 0.230 0.420 0.620 0.610 0.200 0.240 0.020 0.080 EV 513 1980 -0.030 0.210 0.030 0.070 0.000 0.350 0.660 0.580 0.190 0.240 -0.020 0.110 EVA10200 1981 0.120 0.027 0.116 0.197 -0.223 0.246 0.247 0.337 0.317 -0.166 0.080 0.168 EVB10170 1981 0.099 -0.018 0.078 0.229 -0.308 0.127 0.256 0.271 -0.329 0.236 0.054 0.180 EVB10070 1981 0.094 -0.034 0.070 0.224 -0.314 0.117 0.245 0.243 0.217 -0.322 0.034 0.173

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cyp03 pit129.EVA EVF10005 1981 0.085 -0.025 0.076 0.215 -0.281 0.107 0.291 0.253 0.201 -0.266 0.019 0.171 EVA10340 1981 0.124 0.054 0.123 0.237 -0.239 0.198 0.332 0.307 -0.256 0.143 0.385 0.202 -0.278 EVA10240 1981 0.121 0.037 0.113 0.236 -0.260 0.190 0.304 0.357 0.296 0.129 0.197 0.221 -0.302 EVB10040 1981 0.091 -0.031 0.072 0.113 0.262 0.247 0.211 -0.302 0.029 0.173 EVB10270 1981 0.000 0.259 0.265 -0.321 0.090 0.111 0.090 0.234 -0.299 0.159 0.300 0.187 0.230 -0.170 0.320 0.380 -0.120 EVQAD412 1981 0.160 0.110 0.170 0.370 0.460 0.240 0.210 EVOAD413 1981 0.120 -0.060 0.050 0.250 -0.420 0.150 0.100 0.210 0.270 -0.500 0.080 0.180 0.250 -0.200 EVOAD512 1981 0.100 0.090 0.130 0.120 0.440 0.460 0.290 -0.280 0.120 0.220 EV 513 1981 0.080 -0.020 0.080 0.210 -0.260 0.100 0.320 0.260 0.190 -0.230 0.010 0.170 EVA10200 1982 -0.033 -0.018 0.158 0.057 0.071 0.068 0.311 0.341 0.368 0.032 -0.335 -0.348 EVB10170 0.001 -0.003 0.368 -0.062 -0.393 1982 -0.076 -0.050 0.148 -0.050 0.371 0.343 -0.448 EVB10070 -0.084 -0.057 0.143 -0.020 -0.011 -0.044 0.369 0.330 -0.077 -0.408 1982 0.369 -0.491 -0.026 0.008 -0.011 0.388 EVF10005 0.336 -0.073 -0.378 1982 -0.069 -0.047 0.141 0.394 -0.466 EVA10340 0.090 0.103 -0.007 0.358 0.362 0.390 -0.004 -0.334 1982 -0.034 -0.017 0.162 -0.330 0.083 0.377 -0.018 -0.356 EVA10240 1982 -0.047 -0.027 0.159 0.073 -0.019 0.354 0.354 -0.369 -0.022 EVB10040 1982 -0.079 -0.053 0.143 -0.004 -0.032 0.376 0.378 0.332 -0.075 -0.397 -0.482 EVB10270 1982 -0.070 -0.045 0.153 0.032 0.031 -0.045 0.354 0.352 0.353 -0.047 -0.391 -0.435 EVOAD412 1982 -0.010 0.000 0.170 0.170 0.280 0.080 0.320 0.290 0.410 0.030 -0.330 -0.360 -0.090 -0.150 EVOAD413 1982 -0.130 0.150 0.000 -0.070 0.310 0.290 0.310 -0.090 -0.500 -0.570

cyp03\_pit129.EVA EVQAD512 1982 0.010 0.020 0.170 0.030 -0.030 0.100 0.420 0.480 0.440 0.040 -0.220 -0.080 EV 513 1982 -0.060 -0.040 0.140 -0.030 0.020 0.010 0.400 0.410 0.340 -0.070 -0.360 -0.450 EVA10200 1983 0.067 -0.032 0.121 0.186 -0.057 0.143 0.294 0.345 0.375 0.158 -0.077 -0.145 EVB10170 1983 0.066 -0.166 0.114 0.248 -0.103 0.037 0.328 0.285 0.146 -0.131 0.342 -0.237 EVB10070 0.056 -0.196 1983 0.117 0.246 -0.113 0.036 0.325 0.277 0.333 0.146 -0.156 -0.266 EVF10005 0.065 -0.223 1983 0.119 0.279 -0.129 0.051 0.383 0.254 0.155 -0.165 0.331 -0.275 EVA10340 1983 0.093 -0.039 0.105 0.264 -0.076 0.081 0.386 0.312 0.377 0.132 -0.036 -0.150 EVA10240 1983 0.083 -0.057 0.106 0.251 -0.078 0.072 0.360 0.313 0.370 0.131 -0.054 -0.169 EVB10040 1983 -0.206 0.059 0.117 -0.119 0.258 0.346 0.041 0.269 0.333 0.149 -0.159 -0.269 EVB10270 1983 0.067 -0.112 0.110 0.236 -0.088 0.049 0.321 0.305 0.135 0.354 -0.099 -0.211 EVQAD412 1983 0.080 0.110 0.100 0.240 -0.050 0.160 0.420 0.360 0.090 0.410 0.040 -0.120 EVQAD413 1983 0.030 -0.110 0.110 0.140 -0.060 -0.010 0.140 0.350 0.120 0.340 -0.130 -0.240 EVOAD512 0.160 -0.090 1983 0.100 0.360 -0.090 0.050 0.490 0.260 0.180 0.380 -0.010 -0.070 EV 513 1983 0.070 -0.240 0.120 0.300 -0.140 0.060 0.420 0.240 0.330 0.160 -0.170 -0.280 EVA10200 -0.005 -0.045 1984 -0.010 0.207 0.062 0.397 0.223 0.327 0.193 -0.424 -0.068 -0.034 EVB10170 -0.022 -0.170 1984 -0.056 0.281 0.374 0.111 0.253 0.280 0.145 -0.660 -0.163 -0.049 EVB10070 1984 -0.020 -0.197 -0.048 0.285 0.115 0.373 0.238 0.262 0.125 -0.707 -0.196 -0.060 EVF10005 -0.014 -0.193 1984 0.006 0.331 0.173 0.377 0.294 0.165 -0.684 -0.205 0.292 -0.048 EVA10340 1984 -0.027 -0.026 -0.019 0.289 0.131 0.327 0.395 0.372 0.224 -0.484 -0.011 -0.023

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cyp03 pit129.EVA EVA10240 1984 -0.028 -0.055 -0.037 0.294 0.276 0.112 0.391 0.345 0.195 -0.531 -0.040 -0.035 EVB10040 0.258 1984 -0.018 -0.195 -0.029 0.136 0.375 -0.199 0.302 0.273 0.140 -0.699 -0.056 EVB10270 -0.027 1984 -0.123 -0.064 0.263 0.091 0.381 0.247 0.295 0.147 -0.622 -0.110 -0.051 EVQAD412 1984 -0.040 0.130 0.040 0.270 0.120 0.430 0.320 0.430 0.230 -0.410 0.140 -0.050 EVOAD413 1984 -0.040 -0.210 -0.220 0.140 -0.070 0.360 0.060 0.170 0.000 -0.780 -0.170 -0.100 EVOAD512 -0.010 -0.030 0.010 0.240 1984 0.380 0.380 0.510 0.460 0.380 -0.300 -0.010 0.070 EV 513 -0.670 -0.210 1984 -0.010 -0.190 0.040 0.210 0.380 0.330 0.360 0.310 0.190 -0.040 -0.113 -0.221 EVA10200 0.016 -0.059 1985 0.049 0.053 0.126 0.297 0.264 0.532 0.288 -0.031 0.222 -0.317 -0.337 EVB10170 -0.030 -0.100 1985 0.041 0.085 0.307 0.234 0.562 0.236 -0.067 EVB10070 1985 -0.043 -0.109 0.045 0.086 0.222 0.315 0.214 0.556 0.230 -0.345 -0.347 -0.060 EVF10005 1985 -0.047 -0.128 0.085 0.119 0.258 0.373 0.205 0.571 0.242 -0.391 -0.343 -0.048 0.018 -0.093 EVA10340 1985 0.053 0.091 0.204 0.314 0.310 0.592 0.279 -0.222 -0.245 -0.066 0.008 -0.092 0.268 -0.230 -0.260 EVA10240 1985 0.041 0.080 0.194 0.298 0.296 0.581 -0.067 EVB10040 -0.045 -0.116 0.060 0.235 0.336 0.211 0.561 0.234 -0.362 -0.345 1985 0.098 -0.056 EVB10270 -0.014 -0.093 0.028 0.194 0.260 0.245 -0.267 -0.303 1985 0.070 0.284 0.564 -0.069 EVOAD412 0.050 -0.110 0.050 0.110 0.300 0.370 0.320 -0.110 -0.100 1985 0.060 0.600 -0.040 EVQAD413 -0.030 -0.050 -0.080 0.110 1985 -0.020 0.130 0.240 0.510 0.190 -0.200 -0.360 -0.100 EVQAD512 1985 0.040 -0.080 0.120 0.180 0.350 0.410 0.330 0.640 0.300 -0.290 -0.310 -0.090 0.280 EV 513 1985 -0.050 -0.140 0.110 0.140 0.410 0.200 0.580 0.250 -0.420 -0.340 -0.040

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cyp03 pit129.EVA EVA10200 1986 0.172 0.043 0.230 -0.076 0.012 0.055 0.403 0.130 -0.025 -0.234 0.429 -0.096 EVB10170 0.194 1986 0.058 0.280 -0.115 -0.054 -0.132 0.480 0.370 -0.015 -0.138 -0.364 -0.208 EVB10070 1986 0.190 0.063 0.285 -0.098 -0.056 -0.195 0.479 0.351 -0.028 -0.156 -0.393 -0.223 EVF10005 1986 0.184 0.061 0.325 -0.056 -0.071 -0.259 0.504 0.332 0.020 -0.177 -0.391 -0.227 EVA10340 1986 0.195 0.023 0.282 -0.109 -0.014 0.025 0.486 0.446 0.122 -0.097 -0.218 -0.123 EVA10240 1986 0.195 0.030 0.271 -0.115 0.002 -0.014 0.477 0.436 -0.102 -0.247 0.087 -0.138 EVB10040 1986 0.188 0.063 0.300 -0.083 -0.061 -0.218 0.488 0.344 -0.011 -0.164 -0.393 -0.225 EVB10270 1986 0.195 0.263 -0.124 -0.029 0.047 -0.065 0.469 0.013 -0.119 0.403 -0.317 -0.177 EVOAD412 1986 0.180 -0.020 0.260 -0.050 0.090 0.090 0.460 0.530 0.290 -0.080 -0.070 -0.020 EVQAD413 1986 0.210 0.070 -0.230 0.160 -0.010 0.010 0.400 0.410 -0.180 -0.090 -0.400 -0.210 EVQAD512 1986 0.210 0.030 0.360 -0.140 -0.120 0.100 0.560 0.420 0.140 -0.080 -0.210 -0.150 EV 513 1986 0.180 0.060 0.350 -0.030 -0.300 -0.080 0.520 0.320 0.050 -0.190 -0.390 -0.230 EVA10200 1987 0.030 -0.120 0.244 0.312 0.034 0.120 0.231 0.442 0.181 0.112 -0.357 -0.220 EVB10170 1987 0.027 -0.283 0.362 0.393 0.045 0.228 0.066 0.434 0.133 0.065 -0.538 -0.352 EVB10070 1987 0.026 -0.316 0.389 0.390 0.074 0.038 0.213 0.417 0.127 0.053 -0.591 -0.377 EVF10005 1987 0.047 -0.337 0.408 0.402 0.065 0.229 0.008 0.076 -0.572 0.413 0.129 -0.367 EVA10340 0.038 -0.134 1987 0.237 0.402 0.015 0.029 0.289 0.482 0.115 -0.305 0.138 -0.240 EVA10240 1987 0.030 -0.158 0.256 0.395 0.027 0.037 0.471 0.271 0.134 0.097 -0.359 -0.266 EVB10040 1987 0.034 -0.324 0.396 0.394 0.071 0.027 0.219 0.415 0.127 0.061 -0.584 -0.373

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cyp03 pit129.EVA EVB10270 1987 0.020 -0.225 0.312 0.388 0.052 0.237 0.130 0.068 -0.475 0.049 0.447 -0.322 EVOAD412 1987 0.030 0.030 0.090 -0.010 0.310 0.380 -0.040 0.490 0.110 0.120 -0.120 -0.150 -0.250 EVOAD413 1987 -0.040 0.330 0.350 0.100 0.130 0.160 0.430 0.120 -0.020 -0.650 -0.410 1987 EVOAD512 0.090 -0.170 0.280 0.460 0.010 0.030 0.370 0.540 0.190 0.210 -0.200 -0.190 EV 513 1987 -0.350 0.420 0.060 -0.010 0.240 0.130 0.090 0.060 0.410 0.410 -0.560 -0.360 EVA10200 1988 0.035 0.044 0.191 0.328 0.446 0.157 0.305 -0.009 -0.335 0.147 0.233 -0.085 EVB10170 1988 0.197 0.029 0.031 0.247 0.424 0.445 0.240 0.203 0.312 -0.075 -0.353 -0.172 0.252 0.323 EVB10070 1988 0.199 0.020 0.027 0.249 0.433 0.446 0.166 -0.087 -0.352 -0.190 0.306 0.339 -0.083 -0.277 EVF10005 1988 0.218 0.020 0.029 0.268 0.449 0.455 0.193 -0.190 0.407 0.191 0.305 0.274 EVA10340 1988 0.181 0.047 0.028 0.243 0.457 -0.055 -0.314 -0.094 EVA10240 1988 0.177 0.041 0.025 0.238 0.407 0.453 0.184 0.269 0.278 -0.064 -0.342 -0.111 -0.085 EVB10040 0.206 0.027 0.439 0.449 0.271 0.176 0.329 -0.325 1988 0.020 0.256 -0.190 0.032 0.026 0.413 0.447 0.195 0.211 0.293 -0.076 -0.376 EVB10270 1988 0.181 0.236 -0.148EVOAD412 1988 0.130 0.030 -0.010 0.220 0.400 0.480 0.070 0.270 0.230 -0.090 -0.330 -0.030 0.380 EVQAD413 1988 0.140 0.020 0.020 0.190 0.420 0.080 0.080 0.270 -0.100 -0.590 -0.190 -0.150 EVQAD512 1988 0.250 0.100 0.080 0.290 0.410 0.450 0.350 0.540 0.300 0.030 -0.070 EV 513 0.230 0.020 0.460 0.460 0.340 0.210 0.350 -0.080 -0.230 1988 0.030 0.280 -0.190 EVA10200 1989 -0.064 -0.007 -0.002 0.230 -0.092 0.053 0.048 0.274 0.284 0.217 0.139 0.109 EVB10170 0.175 1989 -0.137 -0.096 -0.119 0.303 -0.087 -0.250 0.057 0.233 0.274 0.167 0.087

cyp03\_pit129.EVA EVB10070 1989 -0.163 -0.110 -0.153 0.309 -0.064 -0.325 0.042 0.216 0.273 0.167 0.154 0.070 EVF10005 -0.186 -0.104 1989 -0.163 0.346 -0.031 -0.371 0.084 0.249 0.169 0.283 0.145 0.058 EVA10340 1989 -0.076 -0.002 0.010 0.305 -0.135 0.052 0.094 0.313 0.267 0.212 0.213 0.136 EVA10240 1989 -0.086 -0.020 -0.015 0.295 -0.131 0.001 0.070 0.286 0.264 0.204 0.205 0.127 EVB10040 -0.171 -0.108 1989 -0.157 0.322 -0.052 -0.342 0.057 0.228 0.277 0.167 0.151 0.066 EVB10270 -0.113 -0.065 1989 -0.076 -0.113 -0.135 0.287 0.042 0.240 0.264 0.185 0.184 0.105 EVOAD412 1989 -0.060 0.120 0.110 0.290 -0.150 0.340 0.030 0.340 0.230 0.240 0.250 0.160 EVQAD413 1989 -0.090 -0.130 -0.120 0.190 -0.170 -0.180 -0.090 0.110 0.240 0.160 0.180 0.110 EVOAD512 1989 -0.030 -0.030 0.050 0.370 -0.150 0.040 0.290 0.430 0.320 0.230 0.220 0.160 EV 513 1989 -0.200 -0.100 -0.170 0.370 -0.010 -0.400 0.110 0.270 0.290 0.170 0.140 0.050 EVA10200 1990 -0.218 0.016 -0.122 0.090 -0.104 0.334 0.170 0.371 0.109 -0.042 -0.175 -0.100 EVB10170 1990 -0.383 -0.015 -0.146 0.156 -0.137 0.326 0.187 0.355 0.059 -0.146 -0.206 -0.123 EVB10070 1990 -0.393 -0.018 -0.129 0.159 -0.144 0.323 0.173 0.337 0.056 -0.165 -0.227 -0.121 EVF10005 1990 -0.409 0.018 -0.068 0.196 -0.123 0.183 0.346 0.321 0.065 -0.125 -0.229 -0.084 EVA10340 1990 -0.311 0.041 -0.167 0.140 -0.097 0.346 0.210 0.051 -0.049 0.383 -0.154 -0.109 EVA10240 1990 -0.318 0.023 -0.176 0.131 -0.111 0.335 0.198 0.377 0.048 -0.080 -0.168 -0.121 EVB10040 1990 -0.399 -0.005 -0.107 0.172 -0.137 0.177 0.331 0.331 -0.150 -0.227 0.059 -0.108 EVB10270 1990 -0.347 -0.010 -0.177 0.130 -0.135 0.320 0.183 0.365 -0.135 -0.194 0.049 -0.136 EVQAD412 1990 -0.180 0.100 -0.190 0.070 -0.080 0.340 0.160 0.360 0.000 0.000 -0.160 -0.120

cvp03 pit129.EVA EVOAD413 1990 -0.340 -0.130 -0.320 0.040 -0.210 0.250 0.140 0.390 0.030 -0.290 -0.220 -0.240 0.120 EVQAD512 1990 -0.410 0.080 -0.100 0.260 -0.040 0.410 0.330 0.440 0.070 -0.070 -0.030 EV 513 1990 -0.420 0.040 -0.030 0.220 -0.110 0.360 0.190 0.070 -0.100 -0.230 0.310 -0.060 EVA10200 1991 0.002 -0.017 0.162 -0.276 0.264 -0.009 0.294 0.228 0.193 -0.010 -0.083 0.009 EVB10170 1991 -0.067 -0.042 0.159 -0.465 0.001 0.174 0.278 0.114 -0.070 -0.122 0.129 -0.189 EVB10070 1991 -0.077 -0.053 0.146 -0.540 -0.033 0.154 0.250 0.099 -0.059 -0.147 0.100 -0.219 -0.552 0.133 EVF10005 1991 -0.061 -0.051 0.155 -0.043 0.262 0.100 0.118 0.020 -0.124 -0.256 0.200 -0.215 0.058 0.359 0.186 EVA10340 -0.032 -0.007 1991 0.009 -0.014 0.271 0.238 -0.015 EVA10240 1991 -0.009 -0.023 0.187 -0.270 0.040 0.259 0.334 0.214 0.165 -0.057 -0.038 -0.034 0.147 0.254 EVB10040 1991 -0.071 -0.053 0.149 -0.544 -0.037 0.100 0.106 -0.031 -0.139 -0.232 -0.391 0.011 0.217 EVB10270 1991 -0.048 -0.038 0.165 0.290 0.160 0.127 -0.089 -0.098 -0.108 -0.020 0.200 -0.090 -0.010 0.400 0.350 0.230 0.010 0.070 EVQAD412 1991 0.100 0.310 0.260 EVOAD413 1991 -0.130 -0.060 0.120 -0.500 0.000 0.220 0.210 0.100 0.040 -0.310 -0.220 -0.100 0.270 EVOAD512 1991 0.010 0.040 -0.0300.230 0.210 0.510 0.300 0.250 0.050 0.080 -0.190 0.270 0.070 0.130 -0.110 EV 513 1991 -0.050 -0.050 0.160 -0.560 -0.050 0.120 0.100 -0.280 EVA10200 1992 0.048 0.020 0.124 0.114 0.069 0.043 0.098 0.375 0.026 0.182 -0.178 -0.072 -0.075 -0.011 0.107 0.051 -0.050 0.242 EVB10170 1992 0.154 0.346 -0.061 0.048 -0.207 -0.130 1992 -0.099 0.093 0.037 -0.064 0.267 -0.079 0.018 -0.227 EVB10070 -0.017 0.152 0.337 -0.147 EVF10005 1992 -0.124 -0.013 0.116 0.188 0.033 -0.031 0.367 0.333 -0.018 -0.012 -0.211

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-0.143

cyp03 pit129.EVA EVA10340 1992 0.045 0.021 0.170 0.176 0.106 0.015 0.146 0.378 0.031 0.173 -0.139 -0.072 EVA10240 0.030 1992 0.013 0.149 0.161 0.095 -0.009 0.136 0.372 0.155 -0.160 -0.006 -0.087 EVB10040 1992 -0.108 -0.015 0.101 0.165 0.035 -0.052 0.303 0.335 -0.057 0.007 -0.221 -0.145 EVB10270 1992 -0.022 0.114 -0.003 0.144 0.069 -0.047 0.160 0.357 -0.063 0.101 -0.198 -0.116 EVOAD412 1992 0.210 0.050 0.190 0.160 0.150 0.030 -0.060 0.400 0.050 0.310 -0.130 -0.050 EVQAD413 1992 -0.020 -0.030 0.020 0.040 -0.170 0.050 -0.050 0.350 -0.270 0.110 -0.280 -0.160 EVQAD512 1992 -0.040 0.030 0.260 0.270 0.120 0.130 0.410 0.390 0.210 0.130 -0.030 -0.010 EV 513 1992 -0.140 -0.010 0.130 0.210 0.030 -0.010 0.430 0.330 0.020 -0.030 -0.200 -0.140 EVA10200 1993 0.003 0.036 0.042 0.037 0.163 0.046 0.594 0.387 -0.157 0.253 -0.054 0.059 EVB10170 1993 -0.046 -0.035 -0.009 0.031 0.062 -0.082 0.360 0.646 0.225 -0.265 -0.074 0.027 EVB10070 1993 -0.064 -0.024 -0.041 0.029 0.039 -0.157 0.629 0.312 0.213 -0.269 -0.103 0.015 EVF10005 1993 -0.043 -0.004 0.003 0.066 -0.257 0.070 0.654 0.342 0.236 -0.184 -0.101 0.055 EVA10340 1993 0.037 0.065 0.071 0.074 0.139 0.142 0.750 0.520 0.267 -0.176 0.020 0.114 EVA10240 1993 0.014 0.040 0.047 0.057 0.114 0.724 0.113 0.472 0.250 -0.215 -0.004 0.087 EVB10040 1993 -0.057 -0.028 -0.014 0.042 -0.193 0.050 0.638 0.221 -0.239 0.323 -0.103 0.030 EVB10270 -0.031 -0.013 1993 0.003 0.029 0.067 0.026 0.669 0.224 -0.274 -0.051 0.387 0.038 EVQAD412 1993 0.090 0.210 0.120 0.110 0.140 0.320 0.850 0.550 -0.120 0.250 0.050 0.190 EVQAD413 1993 -0.130 -0.160 -0.110 -0.090 -0.060 0.160 0.550 0.220 0.140 -0.540 -0.110 -0.110 EVQAD512 1993 0.110 0.050 0.150 0.130 0.300 0.100 0.790 0.750 0.380 -0.030 0.120 0.180

cyp03 pit129.EVA 513 EV 1993 -0.030 0.020 0.020 0.090 -0.320 0.090 0.670 0.360 0.250 -0.130 -0.100 0.080 EVA10200 -0.051 -0.029 0.150 0.016 0.318 0.123 1994 0.110 0.325 0.376 -0.172 0.003 -0.104 EVB10170 -0.122 -0.127 1994 0.097 0.168 -0.090 0.251 0.119 0.249 0.378 -0.453 0.006 -0.239 EVB10070 1994 -0.147 -0.153 0.093 0.160 -0.112 0.230 0.099 0.218 0.373 -0.483 0.011 -0.267 -0.142 EVF10005 1994 -0.131 -0.169 0.116 0.160 0.242 0.136 0.188 0.377 -0.506 0.078 -0.269 0.171 0.383 -0.279 EVA10340 1994 -0.019 -0.026 0.152 0.018 0.347 0.192 0.335 0.077 -0.108 EVA10240 1994 -0.046 -0.043 0.154 0.150 0.006 0.323 0.163 0.322 0.379 -0.303 0.051 -0.133 EVB10040 -0.123 -0.141 -0.159 0.101 0.160 0.234 0.112 0.375 -0.491 0.035 1994 0.207 -0.267 0.375 EVB10270 1994 -0.100 -0.088 0.116 0.155 -0.039 0.274 0.119 0.284 -0.380 0.006 -0.195 EVOAD412 1994 0.040 0.070 0.280 0.060 0.170 0.420 0.180 0.380 0.360 -0.030 0.180 0.030 -0.200 0.020 -0.020 0.190 -0.020 0.310 0.360 -0.410 -0.200 EVOAD413 1994 -0.100 0.160 -0.260 0.360 EVOAD512 1994 0.070 -0.030 0.150 0.260 -0.070 0.400 0.370 0.430 -0.400 0.110 -0.110 0.250 0.130 -0.520 EV 513 1994 -0.120 -0.180 0.160 -0.160 0.160 0.170 0.380 0.120 -0.270 0.281 EVA10200 0.055 0.033 0.294 0.278 0.425 0.102 0.099 1995 0.150 0.130 -0.034 -0.051 -0.103 0.283 0.068 0.033 0.289 0.062 0.261 0.141 EVB10170 1995 0.209 0.086 0.397 -0.135 0.243 0.129 EVB10070 0.216 0.096 0.057 -0.127 0.048 0.289 0.273 0.390 0.056 1995 -0.175 EVF10005 1995 0.243 0.117 0.059 -0.111 0.104 0.326 0.277 0.396 0.077 0.259 0.148 -0.215 EVA10340 0.054 0.140 0.337 0.333 0.191 1995 0.183 0.009 0.057 0.289 0.444 0.063 -0.040 0.279 EVA10240 1995 0.180 0.055 0.126 -0.019 0.043 0.324 0.434 0.054 0.312 0.175 -0.056

cyp03\_pit129.EVA EVB10040 1995 0.226 0.104 0.057 -0.121 0.068 0.302 0.275 0.392 0.064 0.249 0.136 -0.190 EVB10270 1995 0.187 0.066 0.092 -0.076 0.023 0.269 0.299 0.410 0.047 0.273 0.146 -0.096 EVOAD412 1995 0.130 0.010 0.230 0.090 0.130 0.290 0.340 0.500 0.000 0.360 0.210 -0.020 EVQAD413 1995 0.130 0.030 0.050 -0.180 -0.130 0.170 0.260 0.370 -0.010 0.190 0.070 -0.050 EVQAD512 1995 0.250 0.090 0.120 0.080 0.050 0.340 0.410 0.440 0.180 0.260 0.420 0.030 EV 513 1995 0.260 0.060 0.130 -0.100 0.140 0.350 0.280 0.400 0.090 0.270 0.160 -0.240 EVA10200 1996 0.052 0.219 0.124 0.132 0.132 0.096 -0.031 0.064 0.098 0.001 -0.105 -0.007 EVB10170 1996 0.050 0.205 0.134 0.138 0.220 0.011 0.016 -0.035 -0.147 0.023 -0.165 -0.024 EVB10070 1996 0.040 0.190 0.123 0.130 0.231 -0.015 0.001 -0.041 -0.196 0.013 -0.179 -0.024 EVF10005 1996 0.040 0.202 0.146 0.142 0.031 0.304 0.062 -0.022 0.036 -0.204 -0.217 -0.015 EVA10340 1996 0.067 0.167 0.296 0.182 0.222 0.122 0.002 0.025 -0.115 -0.017 0.089 -0.022 EVA10240 1996 0.060 0.275 0.151 0.169 0.203 0.084 -0.002 -0.010 -0.046 0.070 -0.118 -0.025 EVB10040 1996 0.040 0.194 0.131 0.134 0.002 0.257 0.023 -0.034 -0.204 0.021 -0.188 -0.021 EVB10270 0.051 1996 0.230 0.129 0.146 0.188 0.020 -0.022 -0.032 -0.108 0.034 -0.137 -0.028 EVOAD412 1996 0.040 0.390 0.140 0.210 0.190 0.150 -0.130 0.030 0.000 0.140 -0.050 -0.030 EVQAD413 1996 0.040 0.050 0.150 0.090 0.000 -0.160 -0.100 -0.190 -0.060 -0.130 -0.100 -0.050 EVQAD512 1996 0.310 0.130 0.280 0.220 0.350 0.330 0.300 0.040 0.130 -0.160 0.140 0.000 EV 513 1996 0.040 0.160 0.210 0.150 0.350 0.060 0.100 -0.010 -0.230 0.050 -0.220 -0.010 EVA10200 1997 0.012 -0.110 -0.120 0.120 0.085 0.156 0.334 0.207 0.333 -0.089 -0.117 -0.112

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cyp03 pit129.EVA EVB10170 1997 -0.054 -0.203 0.083 -0.263 0.161 0.077 0.344 0.140 0.277 -0.217 -0.143 -0.203 EVB10070 1997 -0.067 -0.210 0.062 -0.310 0.159 0.069 0.320 0.126 0.266 -0.247 -0.161 -0.217 EVF10005 1997 -0.069 -0.204 0.092 -0.298 0.190 0.094 0.332 0.135 0.293 -0.237 -0.142 -0.201 EVA10340 1997 0.009 -0.144 0.182 -0.057 0.152 0.130 0.433 0.191 0.360 -0.115 -0.068 -0.119 EVA10240 1997 -0.002 -0.156 0.153 -0.104 0.142 0.113 0.409 0.177 0.338 -0.143 -0.090 -0.140 EVB10040 1997 -0.067 -0.208 0.073 -0.306 0.170 0.078 0.324 0.129 0.276 -0.243 -0.154 -0.211 EVB10270 -0.032 -0.184 1997 0.099 -0.206 0.138 0.083 0.363 0.150 0.293 -0.195 -0.130 -0.183 EVOAD412 1997 0.080 -0.060 0.240 0.100 0.070 0.170 0.470 0.210 0.440 -0.080 -0.030 -0.040 -0.030 -0.280 -0.230 EVOAD413 1997 -0.060 -0.350 0.060 -0.010 0.280 0.100 0.180 -0.220 -0.270 0.290 EVOAD512 0.400 0.000 1997 0.000 -0.170 0.280 0.040 0.180 0.530 0.250 0.010 -0.090 EV 513 1997 -0.070 -0.200 0.110 -0.290 0.210 0.110 0.340 0.140 0.310 -0.230 -0.130 -0.190 EVA10200 1998 -0.119 -0.101 0.198 0.222 0.178 0.467 0.471 0.321 -0.072 -0.058 -0.056 0.008 0.198 EVB10170 1998 -0.187 -0.160 0.282 0.230 0.479 0.529 0.261 -0.281 -0.212 -0.161 -0.053 EVB10070 1998 -0.179 -0.178 0.188 0.276 0.222 0.476 0.515 0.242 -0.324 -0.200 -0.169 -0.073 0.270 EVF10005 0.503 0.561 0.284 -0.309 -0.188 -0.194 1998 -0.118 -0.148 0.146 0.285 -0.096 0.379 -0.097 -0.181 -0.079 EVA10340 1998 -0.137 -0.079 0.185 0.289 0.292 0.514 0.619 0.003 -0.140 -0.183 -0.083 EVA10240 1998 -0.158 -0.105 0.195 0.283 0.266 0.500 0.588 0.344 -0.004 EVB10040 1998 -0.157 -0.167 0.173 0.279 0.239 0.486 0.532 0.257 -0.319 -0.196 -0.178 -0.081 EVB10270 1998 -0.191 -0.150 0.208 0.277 0.227 0.478 0.536 0.280 -0.232 -0.197 -0.115 -0.027

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EVQAD412 0.040	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
EVQAD413 0.000	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
EVQAD512 0.010	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
EV 513 -0.110	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210

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INE10000	1958	100760	46191	48988	122422	258968	29587	35359	4028	10719	12323	8184	15019
INF10000	1958	406688	163390	220487	839203	1006168	162859	168828	33292	53686	50017	51627	69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7 <b>0</b> 95	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100

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INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

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IN 513	1983	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1983	7064	30373	49796	12528	7755	4048	0	0	0	573	0	2457
INB10000	1983	26776	89984	93444	35613	31814	10536	6516	0	0	573	0	5349
INC10000	1983	25337	55472	34266	19830	22571	6757	8766	962	0	0	806	10916
IND10000	1983	13857	48749	47837	16999	17207	3710	2039	400	0	0	581	4534
INE10000	1983	29468	79834	75246	32176	25616	11473	4658	431	0	0	583	22561
INF10000	1983	120472	332692	299709	129389	118139	42481	29446	2057	0	847	2051	57336
INQAD412	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1983	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1983	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1984	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1984	3287	10858	12612	4737	0	0	0	0	0	35115	15074	28047
INB10000	1984	12186	31370	39305	18416	0	0	0	0	0	42445	28974	49544
INC10000	1984	9421	21788	31020	17651	3112	270	57	94	0	11474	19204	27152
IND10000	1984	4219	13284	19818	10133	1348	180	0	0	0	632	3515	7321
INE10000	1984	8510	33051	37829	21116	4444	1260	250	0	0	6385	10791	18082
INF10000	1984	44474	127307	159712	84443	11157	2259	453	139	0	89051	87081	139961
INQAD412	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1984	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1984	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1985	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1985	8613	60107	32881	27370	46746	6476	0	0	0	5558	8448	52840
INB10000	1985	22945	98798	76257	75521	94076	13122	4052	0	0	9893	21956	92542
INC10000	1985	19961	27238	36499	30315	36279	6501	1574	238	0	1046	9702	46966
IND10000	1985	8501	21354	32035	26580	39114	3671	358	0	0	728	9331	39581
INE10000	1985	19212	24535	54980	44182	55250	12252	904	70	0	1673	18435	75263
INF10000	1985	91731	222351	247699	221535	274086	47069	9643	454	0	18625	73972	317156
INQAD412	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1985	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1985	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1986	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1986	4625	63607	5058	26658	20923	37037	0	0	414	473	2742	11230
INB10000	1986	16430	98505	6300	40940	48501	50634	0	0	414	473	10545	47419
INC10000	1986	8905	31640	9794	19353	25309	32120	14580	223	430	1804	14799	55621
IND10000	1986	6480	36293	6131	10883	14253	10286	316	0	0	240	3798	22875

cyp03 pit129.FLO INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 

cyp03 pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 

cyp03\_pit129.FLO

						-7							
INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	35 <b>0</b> 9	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100

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IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	0	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	ø	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	ø	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100
									100	100	100	100	100

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## cyp03\_wPit129

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## cyp03\_pit129-Base

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cyp03\_pit129-Base

```
T1 Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
    Updated 6/18/2015 KA
Т3
**
**
**
    General Comments
**
JD
      51
            1948
                        1
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                         0
                                                                                 3
                                                                                         0
                                                                                                 0
                                                                                                          0
JO
      -1
RO
**
**FY
             10000
         1
                       1000
                                100
                                         10
                                                104000PT129
**FY
       1.0
            241800
                       1000
                                100
                                                             FYLOTP
**FY
       1.0
             48500
                      1000
                                100
                                         10
                                                                 BOB
**FY
             10000
                      1000
         1
                                100
                                         10
                                                10405850307
**FY
             10000
         1
                       1000
                                100
                                         10
                                                10405850301
**FY
         1
             10000
                      1000
                                100
                                         10
                                                10405850306
**FY
             10000
         1
                      1000
                                100
                                         10
                                                10405850304
**FY
         1
             10000
                      1000
                                100
                                         10
                                                10405850303
**FY
             10000
         1
                      1000
                                100
                                         10
                                                10405850305
**FY
         1
             10000
                      1000
                                100
                                         10
                                                10405850302
**
    Monthly Water Use Factors
**
UC
    5813
                      60
              60
                               60
                                       60
                                               76
                                                       76
UC
              76
                      76
                              76
                                       60
                                               60
                                                       60
UC
     MUN
                   0.070
           0.077
                           0.075
                                    0.076
                                            0.084
                                                    0.091
UC
           0.100
                   0.100
                           0.089
                                    0.085
                                            0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                    0.080
                                            0.081
                                                    0.077
UC
           0.109
                   0.109
                            0.104
                                    0.084
                                            0.072
                                                    0.076
UC
     IRR
           0.000
                   0.001
                            0.004
                                    0.013
                                            0.051
                                                    0.162
UC
           0.200
                   0.241
                            0.142
                                    0.097
                                            0.053
                                                    0.038
UC
     MIN
           0.079
                   0.080
                           0.084
                                    0.080
                                            0.081
                                                    0.077
UC
           0.080
                   0.084
                           0.088
                                    0.090
                                            0.090
                                                    0.087
UC
     REC
           0.083
                           0.083
                   0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
```

```
cyp03 pit129-Base
UC OTHER
                                            0.083
           0.083
                   0.083
                           0.083
                                   0.083
                                                   0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                            0.083
                                                    0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                              2.0
                                                      1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                      1.0
UC MONTH
              31
                   28.25
                              31
                                              31
                                                       30
                                      30
                                                       31
UC
              31
                      31
                              30
                                      31
                                               30
**
   Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                       7
                                                     NONE
                                       7
CPPPDISC TCUSBC
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                       7
                                                     NONE
CP585037 A10120
                                       7
                                                      513
                                       7
                                                     NONE
CP585009 A10120
CP585010 A10120
                                                     NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                          7
                                                        513
**CP585007 A10000
                                         7
                                                       NONE
**CP585006 A10000
                                          7
                                                       NONE
CP585031 PPDISC
                                       7
                                                      513
CP585007 PPDISC
                                       7
                                                     NONE
CP585006 PPDISC
                                       7
                                                     NONE
CP585036 585034
                                       7
                                                      513
CP585034 585033
                                       7
                                                      513
                                       7
                                                      513
CP585033 585032
                                        7
                                                      513
CP585035 585032
                                                      513
CP585032 585005
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                          7
                                                       NONE
**CP585004 A10000
                                          7
                                                       NONE
                                          7
**CP585003 A10000
                                                       NONE
**CP585002 A10000
                                          7
                                                       NONE
```

NONE

\*\*CP585001 A10000

```
cyp03_pit129-Base
CP585005 PPDISC
                                       7
                                                    NONE
CP585004 TCUSBC
                                       7
                                                    NONE
CP585003 TCUSBC
                                       7
                                                   NONE
CP585002 TCUSBC
                                       7
                                                   NONE
CP585001 TCUSBC
                                       7
                                                   NONE
CP585011 A10070
                                       7
                                                   NONE
CP585012 A10010
                                       7
                                                   NONE
CP585013 A10010
                                       7
                                                   NONE
** add control points for A5814
CP581431 581432
                                       7
                                                 QAD413
CP581432 A10260
                                       7
                                                 QAD413
CP581433 A10240
                                       7
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                       7
                                                   NONE
CP581302 D10000
                                       7
                                                   NONE
CP581303 D10000
                                       7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                 B10170
CP458237 B10170
                                       7
                                                 B10170
**
CPA10370 A10340
                                       7
                                                 OAD413
CPA10350 A10340
                                       7
                                                 QAD413
CPA10340 A10300
                                       7
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                       7
                                                   NONE
**
CPA10290 A10200
                                       7
                                                   NONE
CPA10280 A10240
                                       7
                                                 QAD413
CPA10260 A10240
                                       7
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                        7
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                       7
                                                    513
CPA10100 TCUSBC
                                       7
                                                    513
```

			cyp03_pit129-Base
CPA10090	TCUSBC	7	513
CPA10070	A10010	7	<b>51</b> 3
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	<b>51</b> 3
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	. 7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB1004	0 B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

			cyp03_pit129-Base
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

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CPF10130	F10080	• •	7	,	NONE		
CPF10120	F10080		7		513		
CPF10110	F10080		7		513		
CPF10100	F10080		7		QAD512		
CPF10090	F10080		7		QAD413		
CPF10080	F10005		7		513		
CPF10030	F10020		7		QAD412		
CPF10020	F10005		7		513		
CPF10005	F10000		7				
CPF10000	OUT		0		NONE		
CP 10050	10040		7		QAD413		
CP 10040	10010		7		QAD413		
CP 10020	10010		7		QAD413		
CP 10010	OUT		7		NONE		
CPQAD412	OUT		0				
CPQAD413	OUT		0				
CPQAD512	OUT		0				
CP 513	OUT		0				
CPSABINE	OUT		2	NONE	NONE		
CPSULPHR	OUT		2	NONE	NONE		
CPA240DM	OUT		2	NONE	NONE		
CPB270DM	OUT		2	NONE	NONE		
CPB70DUM	OUT		2	NONE	NONE		
CPB20MUN	OUT		2	NONE	NONE		
CPAVNGER	OUT		2	NONE	NONE		
CPDNGRFD	OUT		2	NONE	NONE		
CPHGHSPR	OUT		2	NONE	NONE		
CPJEFFSN	OUT		2	NONE	NONE		
CPLVGSTN	OUT		2	NONE	NONE		
CPORECTY	OUT		2	NONE	NONE		
**							
	======	<b></b>	:======:				=====
CPA-ZERO ** =====	OUT		2	ZERO	ZERO	-3	0
**	======		:===== <b>==</b> :	======	=======	======	=====
** II. I	p: 1.						

<sup>\*\*</sup> Water Rights and Associated Reservoir Storage Information

<sup>\*\*</sup> Carollo add water right for modeling of pit 129

					cyp03_pit129-Base	e	
WR585100	482	MONTH20181231	1	1	1.0	104000PT129	PT129
WSPIT129	5355						
WRB10040	0	IND20181231	1			JrFill	4590
WSLKOPNS 2 **	251000						
**TXU app 5	5850 <b>,</b> 6,	/24/05, kb					
WR585001	50	IND20041231	1			10405850001	5850
WR585002	0	IND20041231	1			10405850001	5850
S0			BACK	ŰΡ		10403030002	2020
WR585003	0	IND20041231	1			10405850003	5850
S0			BACK	ŰΡ		10405050005	2020
WR585004	0	IND20041231	1			10405850004	5850
SO			BACK	ŰΡ		10403030004	مدەد
WR585005	0	IND20041231	1			10405850005	5850
S0			BACK	UP.		10403030003	2020
WR585006	0	IND20041231	1			10405850006	5850
50			BACK	UP		10103030000	2020
WR585007	0	IND20041231	1			10405850007	5850
S0			BACK	.UP		20.03030007	2020
WR585008	0	IND20041231	1			10405850008	5850
50			BACK	.UP			3030
WR585009	0	IND20041231	1			10405850009	5850
SO .			BACK	.UP		_0.03030003	5050
WR585010	0	IND20041231	1			10405850010	5850
SO .			BACK	.UP			3030
WR585011	0	IND20041231	1			10405850011	5850
SO			BACK	UP			3030
WR585012	0	IND20041231	1			10405850012	5850
S0			BACK	.UP			3030
WR585013	0	IND20041231	1			10405850013	5850
SO			BACK	.UP			3030
WR585037	0	IND20041231	1			10405850307	5850
WSR58507	525.6	0.979 0.5841					3030
WR585031	0	IND20041231	1			10405850301	5850
	271.4	0.979 0.5841					2000
WR585036	0	IND20041231	1			10405850306	5850
WSR58506	327	0.979 0.5841					
NR585034	0	IND20041231	1			10405850304	5850

				, <u> </u>		
WSR58504	509.3	0.979 0.5841				
WR585033	0	IND20041231	1		10405850303	5850
WSR58503	287.3	0.979 0.5841				
WR585035	0	IND20041231	1		10405850305	5850
WSR58505	604.8	0.4012 0.856				
WR585032	0	IND20041231	1		10405850302	5850
WSR58502	245.1	0.979 0.5841				
**						
** APPLIC		314				
WR581431	0	OTHER20031028	1		10405814301	
WS HR9	356	0.979 0.5841				
WR581432	. 0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841				
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856				
** APPLIC	ATION 58	813				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813003	
S0			BACKUP			
WR581302	0	581320031001	1		10405813002	
S0			BACKUP			
WRD10130	. 0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM	130	0.979 0.5841	0			
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH	5	0.979 0.5841	0			
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0			
WRF10080	2343	MUN19830418	1		1 10404349001	4349
WSF10080	8.29	0.979 0.5841	0			
S0	3293.45	2343				

					cyp03_pit129-Base		
WRF10080	1281	IND19830418	1		1	10404349002	4349
WSF10080	8.29	0.979 0.5841		0	-	10404343002	4349
SO	3293.45	1281					
WRB10250	0	REC19841127	1			10404522301	
WSB10250	380	0.979 0.5841		0		10404322301	
WRF10180	202.5	IRR19841218	1		1	10404525101	
WRA10370	0	REC19750106	1		_	60404558301	
WSA10370	350	0.979 0.5841		0		00 104550501	
WRA10350	0	REC19751215	1			60404559301	
WSA10350	230	0.979 0.5841		0		00101333301	
**							
**							
	Cypress	Springs					
**							
**							
WRA10340	10500	MUN19700720	1			60404560301	4560 CYPRESS
WSLKCYPS	72800						.500 01111255
**							
WRA10340	1000	MUN19660131	1			60404560302	4560 CYPRESS
WSLKCYPS **	72800						
WRA10340	210	IRR19700720	1			60404560303	4560 CYPRESS
WSLKCYPS **	72800						
WRA10340	3590	IND19700720	1			60404560304	4560 CYPRESS
WSLKCYPS **	72800						
	•						
WRA10340 WSLKCYPS	72000	REC19660131	1			60404560305	4560 CYPRESS
**	72800						
**							
WRA10300	11.61	TDD10630034	_				
WRA10300	24.0	IRR19630831	1			60404561001	
**	24.0	IRR19630801	1			60404562002	
**							
** Lake	Monticel	10					
Luke		.10					

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				cypos_picizs base			
WRA10240 WSLKMONT **	15300 40100	IND19700406	1		60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1		60404563302	4563	
**							
** ** lake	Dah Cand	7					
** Lake	Bob Sand	11n					
WRA10200 WSBOBSAN **	10000 213350	MUN19711220	1		60404564301	4564	вов
WRA10200 WSBOBSAN	8000 213350	IND19711220	1		60404564302	4564	ВОВ
** WRA10200 WSBOBSAN **	10900 213350	IND19711220	1		60404564303	4564	ВОВ
WRA10200	0	REC19711220	1		60404564305	4564	вов
WSBOBSAN ** LOTP W		M BOB SANDLIN -	MUNT	AUTHORTZATTON			
WRA10200	1930	MUN19711220	1		2MEMBERSFRMBOB	4590	BOB LOTPBOB
WSBOBSAN							
		M BOB SANDLIN -		UTHORIZATION	1TVII MONTE	4590	BOB LOTPBOB
WRA10200 WSBOBSAN	10000 213350	IND19711220	1		1TXU_MONTE	4590	BOB LUTPBOB
		ORIZATION OF BOB	SAND	LIN WATER RIGHT. NOTE THAT	THIS AUTH WAS DEER	MED TO N	OT HAVE ACCESS TO
** BOB SA	NDLIN ST	ORAGE, INFLOWS C	NLY.				
WRA10200	19600	IND19780313	1		60404564304	4564	BOBROR
** **				=======================================			
WRA10120	1680	MUN19550822	1		60404565301	4565	
WSTANKSL		0.4012 0.856	-	0		<del></del>	
WRA10120	550	IND19550822	1		60404565302	4565	
WSTANKSL		0.4012 0.856		0			
WRA10120	0	REC19550822	1		60404565303	4565	
WSTANKSL	2700	0.4012 0.856		0			

					cyp03_pit129-Base		
WRA10090	21.44	IRR19591231	1		<del></del> -	566301	
WSA10090	0.23	0.979 0.5841		0	00404	200201	
WRA10100	6	IRR19561231	1		60404	567301	
WSA10100	5	0.979 0.5841		0	00-70-1	.507.501	
WRA10050	7.5	IRR19631231	1		60404	568301	
WSA10050	35	0.979 0.5841		0	33.10.1	300301	
WRA10070	400	MUN19380317	1		60404	569301	4569
WSNEWCTY	1176	0.4012 0.856		0	30.0.	303301	4303
WRA10070	0	REC19380317	1		60404	569302	4569
WSNEWCTY	1176	0.4012 0.856		0	33.3.	303302	4303
WRA10060	144	MUN19750120	1		60404	570301	4570
WSOLDCTY	100	0.979 0.5841		0		.,	1370
WRA10060	0	REC19750120	1		60404	570302	4570
WSOLDCTY	100	0.979 0.5841		0			.3,0
WRA10040	4	IRR19631231	1		60404	571301	
WSA10040	12	0.979 0.5841		0			
WRA10030	4.4	IRR19631231	1		60404	572301	
WSA10030	10	0.979 0.5841		0			
WRE10020	25.3	IND19850604	1		10404	573301	
WSE10020	42	0.979 0.5841		0			
WRA10010	11	IRR19551231	1		60404	573001	
WRB10320	0	IRR19511231	1		60404	574001	4574
WSOFF320	5.0	0.979 0.5841		0			
SO	5.43	1.40					
WRB10320	1.4	IRR19511231	1		60404	574301	4574
WSB10320	0.5	0.979 0.5841		0			
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0						
SO	5.43	1.40					
WRB10290	0	REC19730430	1		60404	575301	
WSB10290	80	0.979 0.5841		0			
**							
**							
**	_						
	Reservo						
WRB10270	11000	IND19730910	1		60404	576301	4576
WS WELSH	23587						

\*\*

**				
WRB10270 0 WS WELSH 23587 **	REC19730910	1	60404576302	4576
**				
**				
WRB10230 124	IRR19500930	1	60404577301	
WSB10230 96	0.979 0.5841	0		
WRB10220 6	IRR19521231	1	60404578301	
WSB10220 1	0.979 0.5841	0		
WRB10210 75	IRR19531231	1	60404579301	
WSB10210 64	0.979 0.5841	0		
WRB10200 2	IRR19581231	1	60404580301	
WSB10200 0.5	0.979 0.5841	0		
WRB10180 0	REC19690922	1	60404581301	
WSB10180 510	0.979 0.5841	0		
**				
**				
			50 which is on Cypress Crk, downstream of	
		upply t	o Ellison Crk Reservoir using the SO Reco	rd.
** Ellison Creek	Reservoir			
**				
WRB10170 2000	MUN19720508	1	60404582001	4582 ELLISON
WSELLISN 24700				
	TND10421120	4	C0404E02002	AFOR FLLTCON
WRB10170 21000 WSELLISN 24700	IND19421130	1	60404582002	4582 ELLISON
	mass Charle at ma			
	ress Creek at pr	-	C0404F02004	AFOR FLITCON
WRB10170 WSELLISN 24700	19421130	1	60404582004	4582 ELLISON
WSELLISN 24700 SO	36000 D101F0			
<b>30</b> **	26000 B10150			
	impoundments on	Pannac	Cn ata	
**	Tilipoundillents on	Darnes	Cir etc.	
WR458232 0	OTHER19720508		60404582303	4582 barnes
WSBARNES 24000	0.4012 0.856	0		4Joz Dai iles
WR458232 0	OTHER19720508	· ·	4582BU	4582 barnes
WSBARNES 24000	OTTICKED/20308		438280	4302 Dai 1163
1130AMILS 24000				

```
SO
                       458237 BACKUP
**
**
WRB10120
          38.3
                  IRR19620731
                                                             60404583301
WSB10120
          4.79 0.979 0.5841
WRB10110
          14.2
                  IRR19480930
                                                             60404584301
WSB10110
            60
               0.979 0.5841
WRB10100
          0.56
                  IRR19550331
                                                             60404585301
WSB10100
               0.979 0.5841
            50
WRB10090
             1
                  IRR19641231
                                                             60404586301
WSB10090
            12 0.979 0.5841
WRB10080
           150
                  IRR19561231
                                                             60404587301
          2500 0.4012 0.856
WSSIMPSN
                                  0
**
**
   Wilkes Reservoir (aka Johnson Reservoir)
WRB10070
          6668
                  IND19600504 1
                                                             60404588301
                                                                          4588
NSJOHNSN
         10100
WRB10070
                  REC19600504 1
                                                             60404588302
                                                                          4588
NSUHOCSM
         10100
**
**
WRB10050
             0
                  REC19751208 1
                                                             60404589301
WSB10050
           240 0.979 0.5841
**
** Lake O'the Pines
** REDUCE LOTP DEMAND FOR PORTION OF WATER AUTHORIZED TO BE TAKEN AT BOB SANDLIN
WRB10040 40070
                  MUN19570916
                                                                   1MUN
                                                                          4590 FYLOTP
WSLKOPNS 251000
                   -1
WRB10040 151800
                  IND19570916 1
                                                                   2IND
                                                                          4590 FYLOTP
WSLKOPNS 251000
WRF10250
             8
                  IRR19670430 1
                                                       1
                                                             60404591301
```

WSF10250	6	0.979 0.5841		0			
WRF10230	96.88	IRR19690930	1		1	60404592001	
WRF10240	85	IRR19620531	1		1	60404593301	
WSF10240	100	0.979 0.5841		0			
WRF10220	1080	IRR19550103	1		1	60404594002	
WRF10210	2000	MUN19630218	1		1	60404595001	
WRF10190	80.21	IRR19570319	1		1	60404596001	
WRC10040	25	IRR19760621	1			60404597301	
WSC10040	35	0.979 0.5841		0			
WRC10030	10	IND19700126	1			60404598301	
WSC10030	5	0.979 0.5841		0			
WRC10010	47	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.5841		0			
S0	40.42	47					
WRF10170	62.5	IRR19660630	1		1	60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.5841		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.4012 0.856		0			•
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.5841		0			
WRD10060	7.03	IRR19670630	1			60404604301	
WSD10060	28	0.979 0.5841		0			
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	

110540040					->F <u>-</u> F		
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.5841		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.5841		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.5841		0			
WRF10100	0	REC19861125	1		1	10405112301	
WSF10100	277	0.979 0.5841		0			
WRA10280	0	IND19880121	1			10405167301	
WSPONDH1	477	0.979 0.5841		0			
WRB10300	0	IRR19890112	1			10405212301	
WSB10300	0.09	0.979 0.5841		0			
WRB10260	0	IRR19890810	1			10405251301	
WSB10260	86	0.979 0.5841		0			
IFD10110 **	1025.6	CONST19891214	1	1	IF5272		
WRD10110	6180	MUN19891214	1			10405272301	5272
WSLKGILM	12720					, <b></b>	J / L

WRD10110	. 0	REC1	9891214	1				1040	5272302	5272		
WSLKGILM	12720											
WRF10090	0		9900710	1			1	1040	5302301			
WSF10090	80		0.5841	0								
WRA10260	0		9950522	1				1040	5529301			
WSPONDH4	173.7		0.5841	0								
WRE10080	0		9950801	1				1040	5537301			
WSE10080	296		0.5841	. 0								
WRE10090	34		9980320	1				1040	5608301	5608		
WSE10090	55.6		0.5841	0								
WRE10090	0		9980320	1				1040	5608302	5608		
WSE10090	55.6		0.5841	0								
** This	water ri	ght is t	o fill T	Texas' po	rtion of	Caddo L	ake up t	o elevat	ion 168.	5 feet		
WRF10005	0	OTHER9	9999999	1				6040	9999301	9999		
WS CADDO	125000											
** This	water ri	ght is f	or Louis	siana's d	iversion	from Ca	ddo Lake	for eac	h year			
WRF10005	40000	MUN9	9999999	1				6040	9999302	9999		
WS CADDO	165000											
**												
** Stor	rage-Area	Tables										
**												
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
NZNHOCVZ	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930

••••					cyp0:	3_pit129	-Base					
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
** Carollo add	addi	tional	SVSA cur	ve for P	it 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129 **	0	12	16	20	23	25	33	39	50	62	72	98

<sup>\*\*</sup> Drought Indices

DI 1 1 CADDO IS 4 0 125000 125001 865000 IP 100 100 100 100

\*\* Streamflow And Evaporation Records

\*\* ED

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

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T1 T2 T3 ** **	Full Updat	ss Water Authorize ed 6/18/2 al Commen	d Divers 1015 KA	lity Mod ions, No	eling		.c129-8ase_r	-S1200-FY	LOIP				
** JD	===== 51	======= 1948	:======= 1	======	======	======	=						
**		1946 =======	1	-1 	-1	0	5	0	0	3	0	0	0
JO RO **	-1				======	======	=						
**F	Υ	1 10000	1000	100	10	10.	4000PT129						
FY	1.0	241800	1000	100		10		LOTP					
**F		0 48500	1000	100	10		• •	BOB					
**F		1 10000	1000	100			405850307	505					
**F		1 10000	1000	100			405850301						
**F		1 10000	1000	100	10		405850306						
**F	-	1 10000	1000	100			405850304						
**F		1 10000	1000	100	10		405850303						
**F		1 10000	1000	100	10		405850305						
**F	Υ	1 10000	1000	100	10		405850302						
**		_											
**	Month	ly Water	Use Fact	ors									
UC	5813	60	60	<b>CO</b>	60	7.0							
UC	3013	76	76	60 76	60 60	76	76						
UC	MUN	0.077	0.070	0.075	0.076	60	60						
UC	11014	0.100	0.100	0.089	0.085	0.084	0.091						
UC	IND	0.068	0.063	0.079	0.089	0.076 0.081	0.078 0.077						
UC	2.12	0.109	0.109	0.104	0.084	0.072	0.077 0.076						
UC	IRR	0.000	0.001	0.104	0.013	0.072	0.076 0.162						
UC	•	0.200	0.241	0.142	0.013	0.053	0.162						
UC													

```
cyp03 pit129-Base FS1200-FYLOTP
                                            0.090
UC
           0.080
                   0.084
                           0.088
                                    0.090
                                                    0.087
UC
     REC
           0.083
                   0.083
                           0.083
                                            0.083
                                                    0.083
                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC OTHER
           0.083
                   0.083
                           0.083
                                            0.083
                                                    0.083
                                    0.083
UC
           0.083
                   0.083
                           0.083
                                    0.083
                                            0.083
                                                    0.083
UC CONST
                                      2.0
                                              2.0
                                                      1.0
             2.0
                     2.0
                              2.0
UC
             1.0
                     1.0
                              1.0
                                              1.0
                                                      1.0
                                      1.0
UC MONTH
              31
                   28.25
                                                       30
                               31
                                       30
                                               31
                                                       31
UC
              31
                      31
                               30
                                       31
                                               30
**
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                     NONE
CPPPDISC TCUSBC
                                                     NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                        7
                                                       513
**
**TXU app 5850, 6/24/05, kb
                                        7
CP585008 A10120
                                                     NONE
CP585037 A10120
                                        7
                                                      513
                                        7
                                                     NONE
CP585009 A10120
                                        7
                                                     NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                          7
                                                        513
**CP585007 A10000
                                          7
                                                        NONE
**CP585006 A10000
                                          7
                                                       NONE
                                                      513
CP585031 PPDISC
                                        7
                                        7
                                                      NONE
CP585007 PPDISC
                                        7
CP585006 PPDISC
                                                      NONE
CP585036 585034
                                        7
                                                       513
CP585034 585033.
                                        7
                                                      513
                                        7
CP585033 585032
                                                       513
CP585035 585032
                                        7
                                                       513
CP585032 585005
                                        7
                                                      513
```

Cyp03_p1t129-Base_FS1200-FYLOTP	
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses	;
7 NONE	
**CP585004 A10000 7 NONE	
**CP585003 A10000 7 NONE	
**CP585002 A10000 7 NONE	
**CP585001 A10000 7 NONE	
CP585005 PPDISC 7 NONE	
CP585004 TCUSBC 7 NONE	
CP585003 TCUSBC 7 NONE	
CP585002 TCUSBC 7 NONE	
CP585001 TCUSBC 7 NONE	
CP585011 A10070 7 NONE	
CP585012 A10010 7 NONE	
CP585013 A10010 7 NONE	
** add control points for A5814	
CP581431 581432 7 QAD413	
CP581432 A10260 7 QAD413	
CP581433 A10240 7 QAD413	
** add control points for A5813	
CP581301 D10000 7 NONE	
CP581302 D10000 7 NONE	
CP581303 D10000 7 NONE	
** additional CPs for C4582, for Barnes Creek watershed	
CP458232 B10170 7 B10170	
CP458237 B10170 7 B10170	
**	
CPA10370 A10340 7 QAD413	
CPA10350 A10340 7 QAD413	
CPA10340 A10300 7	
**CPA10300 A10000 7 NONE	
CPA10300 A10200 7 NONE	
** NONE	
CPA10290 A10200 7 NONE	
CPA10280 A10240 7 QAD413	
CPA10260 A10240 7 QAD413	
, Aunato	

```
cyp03 pit129-Base FS1200-FYLOTP
**CPA10240 A10000
CPA10240 A10200
                                       7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                       513
**CPA10100 A10000
                                         7
                                                       513
**CPA10090 A10000
                                         7
                                                       513
CPA10120 TCUSBC
                                       7
                                                     513
CPA10100 TCUSBC
                                       7
                                                     513
CPA10090 TCUSBC
                                       7
                                                     513
CPA10070 A10010
                                       7
                                                     513
CPA10060 A10010
                                       7
                                                     513
CPA10050 A10010
                                       7
                                                     513
CPA10040 A10010
                                       7
                                                     513
CPA10030 A10010
                                       7
                                                  QAD413
CPA10020 A10010
                                       7
                                                    NONE
                                       7
CPA10010 A10000
                                                     513
CPA10000
                                                    NONE
         B10150
                                       0
CPB10320 B10310
                                       7
                                                  QAD413
                                       7
CPB10310
         B10150
                                                    NONE
CPB10300 B10150
                                                  QAD413
                                       7
                                       7
                                                  QAD413
CPB10290 B10150
CPB10270 B10150
                                       7
CPB10260 B10150
                                       7
                                                  QAD413
CPB10250 B10150
                                                  QAD413
                                       7
CPB10230 B10170
                                       7
                                                     513
CPB10220
                                       7
                                                     513
         B10230
CPB10210 B10150
                                       7
                                                     513
                                       7
                                                     513
CPB10200 B10150
CPB10180 B10170
                                       7
                                                     513
CPB10170 B10150
                                       7
                                                    NONE
CPB10150
         B10040
                                       7
CPB10120 B10040
                                       7
                                                     513
CPB10110
                                       7
          B10040
                                                     513
```

7

513

CPB10100 B10040

```
cyp03_pit129-Base_FS1200-FYLOTP
CPB10090
          B10040
                                       7
                                                      513
CPB10080
          B10040
                                       7
                                                     513
CPB10070
          B10040
                                       7
CPB10050 B10040
                                       7
                                                  QAD413
**CPB10040 B10000
                                         7
                                                      NONE
CPB10040
          B10000
                                       7
CPB10000 F10230
                                       0
                                                    NONE
CPC10050
          C10010
                                       7
                                                  QAD413
CPC10040
          C10010
                                       7
                                                  QAD413
CPC10030 C10010
                                       7
                                                  QAD413
CPC10010 C10000
                                       7
                                                  QAD413
CPC10000
         F10180
                                       0
                                                    NONE
CPD10190
          D10000
                                       7
                                                  QAD412
CPD10180
          D10000
                                       7
                                                  QAD412
CPD10170
          D10160
                                       7
                                                  QAD412
CPD10160
          D10150
                                       7
                                                     513
CPD10150
          D10130
                                       7
                                                     513
CPD10140
          D10130
                                       7
                                                  QAD412
CPD10130
          D10000
                                       7
                                                  QAD412
CPD10120
          D10000
                                       7
                                                  QAD412
CPD10110
          D10000
                                       7
                                                  QAD412
CPD10090
          D10000
                                       7
                                                  QAD412
CPD10080
          D10000
                                       7
                                                  QAD412
CPD10070
         D10000
                                       7
                                                  QAD413
CPD10060
         D10000
                                       7
                                                  QAD413
CPD10050
         D10000
                                       7
                                                    NONE
CPD10040
          D10000
                                       7
                                                  QAD413
CPD10030
          D10000
                                       7
                                                  QAD413
CPD10020
          D10000
                                       7
                                                  QAD413
CPD10010
         D10000
                                       7
                                                  QAD413
CPD10000
          E10060
                                       0
                                                    NONE
CPE10090
          E10080
                                       7
                                                     513
CPE10080
          E10060
                                       7
                                                     513
CPE10070
          E10060
                                       7
                                                     513
CPE10060
          E10040
                                       7
                                                  QAD412
```

*				chha2_b1	.C129-Da:	96_L2T500-L1F	•
CPE10050	E10040	• •	7		QAD412		
CPE10040	E10000	<b>-</b>	7		NONE		
CPE10020	E10010	- -	7		513		
CPE10010	E10000	-	7		QAD412		
CPE10000	F10160	(	0		NONE		
CPF10250	F10230	- -	7		QAD512		
CPF10240	F10230	<del>-</del>	7		<b>51</b> 3		
CPF10230	F10220	•	7		NONE		
CPF10220	F10210	·	7		NONE		
CPF10210	F10190	• ·	7		NONE		
CPF10190	F10130	-	7		NONE		
CPF10180	F10170	•	7		NONE		
CPF10170	F10130	-	7		NONE		
CPF10160	F10130	-	7		NONE		
CPF10140	F10130	•	7		NONE		
CPF10130	F10080	-	7		NONE		
CPF10120	F10080	•	7		513		
CPF10110	F10080	•	7		513		
CPF10100	F10080	•	7		QAD512		
CPF10090	F10080	•	7		QAD413		
CPF10080	F10005	•	7		513		
CPF10030	F10020	•	7		QAD412		
CPF10020	F10005	•	7		513		
CPF10005	F10000	•	7				
CPF10000	OUT	(	0		NONE		
CP 10050	10040	•	7		QAD413		
CP 10040	10010	-	7		QAD413		
CP 10020	10010	•	7		QAD413		
CP 10010	OUT	•	7		NONE		
CPQAD412	OUT	(	0				
CPQAD413	OUT	(	0				
CPQAD512	OUT	(	0				
CP 513	OUT	(	0				
CPSABINE	OUT	:	2	NONE	NONE		
CPSULPHR	OUT	;	2	NONE	NONE		

```
cyp03_pit129-Base_FS1200-FYLOTP
CPA240DM
           OUT
                                  2
                                       NONE
                                              NONE
           OUT
CPB270DM
                                  2
                                       NONE
                                              NONE
CPB70DUM
           OUT
                                  2
                                       NONE
                                              NONE
CPB20MUN
           OUT
                                  2
                                       NONE
                                              NONE
CPAVNGER
           OUT
                                  2
                                       NONE
                                              NONE
CPDNGRFD
           OUT
                                  2
                                       NONE
                                              NONE
CPHGHSPR
           OUT
                                  2
                                       NONE
                                              NONE
CPJEFFSN
           OUT
                                       NONE
                                              NONE
CPLVGSTN
           OUT
                                       NONE
                                              NONE
CPORECTY
           OUT
                                       NONE
                                              NONE
**
CPA-ZERO
           OUT
                                       ZERO
                                              ZERO
**
**
   Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
WR585100
           156 XMONTH20181231
                              1 1
                                       1.0
                                                             104000PT129
                                                                         PT129
WSPIT129
          5355
FS 1 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           1
                                                              1
                                                                     1
FS
   2 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           2
                                                              2
                                                                     1
  3 1 A10000
FS
                  0.0
                               1200
                         1.0
                                             1
                                                           3
                                                                     1
FS 4 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                                     1
FS 5 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           5
                                                       0
FS
   6 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           6
                                                                     1
FS
  7 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           7
                                                              7
                                                                     1
FS
   8 1 A10000
                  0.0
                         1.0
                                1200
                                             1
                                                       0
                                                           8
                                                                     1
FS 9 1 A10000
                  0.0
                         1.0
                               1200
                                             1
                                                           9
                                                              9
FS 10 1 A10000
                  0.0
                               1200
                         1.0
                                             1
                                                          10
                                                             10
FS 11 1 A10000
                  0.0
                         1.0
                                1200
                                             1
                                                          11
                                                             11
FS 12 1 A10000
                  0.0
                         1.0
                                1200
                                             1
                                                          12 12
                                                                     1
WRB10040
                  IND20181231
                               1
                                                                 JrFill
                                                                          4590
WSLKOPNS 251000
```

**TXU app	5850, 6/	′24/05, kb			
WR585001	50	IND20041231	1	10405850001	5850
WR585002	0	IND20041231	1	10405850002	5850
S0			BACKUP		
WR585003	0	IND20041231	1	10405850003	5850
SO			BACKUP		
WR585004	0	IND20041231	1	10405850004	5850
SO			BACKUP		
WR585005	0	IND20041231	1	10405850005	5850
SO			BACKUP		
WR585006	0	IND20041231	1	10405850006	5850
SO			BACKUP	,	
WR585007	0	IND20041231	1	10405850007	5850
S0			BACKUP		
WR585008	0	IND20041231	1	10405850008	5850
S0			BACKUP		
WR585009	0	IND20041231	1	10405850009	5850
SO			BACKUP		
WR585010	0	IND20041231	1	10405850010	5850
S0			BACKUP		
WR585011	0	IND20041231	1	10405850011	5850
S0	•		BACKUP		
WR585012	0	IND20041231	1	10405850012	5850
S0			BACKUP		
WR585013	0	IND20041231	1	10405850013	5850
SO			BACKUP		
WR585037	0	IND20041231	1	10405850307	5850
WSR58507	525.6	0.979 0.5841			
WR585031	0	IND20041231	1	10405850301	5850
WSR58501	271.4	0.979 0.5841			
WR585036	9	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841			
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841			
WR585033	0	IND20041231	1	10405850303	5850

				-) P P - C - P - D G - C - C - C - C - C - C - C - C - C -		
WSR58503	287.3	0.979 0.5841		_		
WR585035	0	IND20041231	1	1040	5850305 5850	
WSR58505	604.8	0.4012 0.856			2030303 3030	
WR585032	0	IND20041231	1	1040	5850302 5850	
WSR58502	245.1	0.979 0.5841		2010.	2030302 3030	
** '						
** APPLICA	TION 58	314				
WR581431	0	OTHER20031028	1	1040	5814301	
WS HR9	356	0.979 0.5841			702.002	
WR581432	0	OTHER20031028	1	1040	5814302	
WS HR21	263	0.979 0.5841		10.0	7011502	
WR581433	0	OTHER20031028	1	1040	5814303	
WS HR10	1495	0.4012 0.856			701 1505	
** APPLICA	TION 58	13				
WR581301	685	581320031001	1	1040	5813001	
WR581303	0	581320031001	1		5813003	
S0			BACKUP	20 /03	7015005	
WR581302	0	581320031001	1	1040	5813002	
SO			BACKUP	2010.	7013002	
WRD10130	0	REC19830222	1	10404	4334301 4334	
WSWHTOAK	6.7	0.979 0.5841	0	20.0	133 1301 4334	
WRD10160	0	REC19830222	1	10404	4334302 4334	
WSBASSLK	3.4	0.979 0.5841	0	55.0	,551,502 4554	
WRD10140	0	REC19830222	1	10404	4334303 4334	
WSDOGWOD	6	0.979 0.5841	0	23.0	1551505 4554	
WRD10180	0	REC19830222	1	10404	4334304 4334	
WSLKAUTM	130	0.979 0.5841	0		.551501 1554	
WRD10170	0	REC19830222	1	10404	4334305 4334	
WSCATFSH	5	0.979 0.5841	0	20.0	155 1565 4554	
WRD10150	0	REC19830222	1	10404	4334306 4334	
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1	10404	4334307 4334	
WSLKWALL	5	0.979 0.5841	0			
WRF10080	2343	MUN19830418	1	1 10404	4349001 4349	
WSF10080	8.29	0.979 0.5841	0			

S0	3293.45	2343					
WRF10080	1281	IND19830418	1		1	10404349002	4349
WSF10080	8.29	0.979 0.5841		0			
SO	3293.45	1281					
WRB10250	0	REC19841127	1			10404522301	
WSB10250	380	0.979 0.5841		0			
WRF10180	202.5	IRR19841218	1		1	10404525101	
WRA10370	0	REC19750106	1			60404558301	
WSA10370	350	0.979 0.5841		0			
WRA10350	0	REC19751215	1			60404559301	
WSA10350	230	0.979 0.5841		0			
**		•					
**							
	Cypress	Springs					
**							
**							
WRA10340	10500	MUN19700720	1			60404560301	4560 CYPRESS
WSLKCYPS	72800						
**							
WRA10340	1000	MUN19660131	1			60404560302	4560 CYPRESS
WSLKCYPS	72800						
**	24.0	TDD40700730	_			60404560202	4560 6\/DD566
WRA10340	210	IRR19700720	1			60404560303	4560 CYPRESS
WSLKCYPS **	72800						
	2500	TND10700730	1			C0404EC0204	AFCO CVDDECC
WRA10340 WSLKCYPS	3590 72800	IND19700720	1			60404560304	4560 CYPRESS
WSLKCYPS **	72800						
WRA10340	0	REC19660131	1			60404560305	4560 CYPRESS
WSLKCYPS	72800		1			00404300303	4300 CIPNESS
**	72000						
**							
WRA10300	11.61	IRR19630831	1			60404561001	
WRA10290	24.0	IRR19630801	1			60404562002	
**	20	I.I.I.I.J.0.J.000I	_			55-5-502002	

**		cyp03_	_pit129-Base_FS	1200-FYLOTP		
** Lake Montic	ello					
**						
**						
WRA10240 1530		1		60404563301	4563	
WSLKMONT 4010	0				.505	
**						
WRA10240 100		1		60404563302	4563	
WSLKMONT 4010	0					
**						
**						
** Lake Bob Sa	ndlin					
**	HALLII					
WRA10200 1000	0 MUN19711220	1		60404564301	4564	DOD
WSBOBSAN 21335	-	-		00404504501	4564	BOB
**						
WRA10200 800	0 IND19711220	1		60404564302	4564	ВОВ
WSBOBSAN 21335	0				.50,	
**						
WRA10200 1090		1		60404564303	4564	ВОВ
WSBOBSAN 21335	0					
	0 REC19711220	1				
WSBOBSAN 21335		1		60404564305	4564	BOB
	ROM BOB SANDLIN -	MUNT AUTHORIZA	TTON			
WRA10200 193	0 MUN19711220	1	TON	2MEMBERSFRMBOB	4590	DOD LOTDDOD
WSBOBSAN 21335		_		ZHENDEKSKKIDOD	4390	BOB LOTPBOB
** LOTP WATER F	ROM BOB SANDLIN -	IND AUTHORIZAT	ION			
WRA10200 1000	0 IND19711220	1		1TXU MONTE	4590	BOB LOTPBOB
WSBOBSAN 21335				_		
** REMAINING AU	THORIZATION OF BOB	SANDLIN WATER	RIGHT. NOTE TH	AT THIS AUTH WAS DEEN	MED TO NOT	HAVE ACCESS TO
** BOR SANDLIN	STORAGE, INFLOWS (	NLY.				
WRA10200 1960 **	0 IND19780313	1		60404564304	4564 BC	BROR

** ====================================	=====		:===	
WRA10120 1680 MUN19550822	1		60404565301	4565
WSTANKSL 2700 0.4012 0.856		0		
WRA10120 550 IND19550822	1		60404565302	4565
WSTANKSL 2700 0.4012 0.856		0		
WRA10120 0 REC19550822	1		60404565303	4565
WSTANKSL 2700 0.4012 0.856		0		
WRA10090 21.44 IRR19591231	1		60404566301	
WSA10090 0.23 0.979 0.5841		0		
WRA10100 6 IRR19561231	1		60404567301	
WSA10100 5 0.979 0.5841		0		
WRA10050 7.5 IRR19631231	1		60404568301	
WSA10050 35 0.979 0.5841		0		
WRA10070 400 MUN19380317	1		60404569301	4569
WSNEWCTY 1176 0.4012 0.856		0		
WRA10070 0 REC19380317	1		60404569302	4569
WSNEWCTY 1176 0.4012 0.856		0		
WRA10060 144 MUN19750120	1		60404570301	4570
WSOLDCTY 100 0.979 0.5841		0		
WRA10060 0 REC19750120	1		60404570302	4570
WSOLDCTY 100 0.979 0.5841		0		
WRA10040 4 IRR19631231	1		60404571301	
WSA10040 12 0.979 0.5841		0		
WRA10030 4.4 IRR19631231	1		60404572301	
WSA10030 10 0.979 0.5841		0		
WRE10020 25.3 IND19850604	1		10404573301	
WSE10020 42 0.979 0.5841	_	0		
WRA10010 11 IRR19551231	1		60404573001	
WRB10320 0 IRR19511231	1	_	60404574001	4574
WSOFF320 5.0 0.979 0.5841		0		
SO 5.43 1.40			60404574304	
WRB10320 1.4 IRR19511231	1		60404574301	4574
WSB10320 0.5 0.979 0.5841		0		
WSOFF320 5.0 0.979 0.5841		0		
OR 5.0				

				cyp03_pit129-Base_FS1200-FYLOTP
S0	5.43	1.40		
WRB10290	0	REC19730430	1	60404575301
WSB10290	80	0.979 0.5841		0
**				
**				
**				
** Welsh	Reservo	ir		
WRB10270	11000	IND19730910	1	60404574004
WS WELSH	23587	1101070010	1	60404576301 4576
**	23307			
**				
WRB10270	0	DEC10720010	_	
WS WELSH	0	REC19730910	1	60404576302 4576
**	23587			
**				
**				
WRB10230	124	IRR19500930	1	60404577301
WSB10230	96	0.979 0.5841		0
WRB10220	6	IRR19521231	1	60404578301
WSB10220	1	0.979 0.5841		0
WRB10210	75	IRR19531231	1	60404579301
WSB10210	64	0.979 0.5841		0
WRB10200	2	IRR19581231	1	60404580301
WSB10200	0.5	0.979 0.5841		0
WRB10180	0	REC19690922	1	60404581301
WSB10180	510	0.979 0.5841	_	0
**				
**				
** Cypres	s Crk d	iversion noint (	CD R10	150 which is on Cypress Crk, downstream of Ellison Reservoir,
** is use	ed to sur	nnlement water s	unnly	to Ellison Crk Reservoir using the SO Record.
** Fllisc	n Creek	Reservoir	иррту	to Lilison Crk Reservoir using the SU Record.
**	Cr CCR	Wedel And		
WRB10170	2000	MUN19720508	1	<b>CO.10.130.00</b>
WSELLISN	24700	1.101AT3 / 503A9	1	60404582001 4582 ELLISON
**	27700			

				cypos_prcizs	D036_131200 1	LOIF		
WRB10170 WSELLISN	21000 24700	IND19421130	1		_	60404582002	4582	ELLISON
		ress Creek at pr	iority					
WRB10170	ттош сур	19421130	1011ty			60404582004	4592	ELLISON
WSELLISN	24700	17421130	_			00404382004	4302	LLLIJON
SO	24700	26000 B10150						
**		20000 010130						
** Misce	llaneous	impoundments on	Barnes	Cr etc.				
**		impoundments on	Dai nes	ci ccc.				
WR458232	0	OTHER19720508				60404582303	4582	barnes
WSBARNES	24000	0.4012 0.856	0					
WR458232	. 0	OTHER19720508				4582BU	4582	barnes
WSBARNES	24000							
S0		458237	BACKUP					
**								
**								
WRB10120	38.3	IRR19620731	1			60404583301		
WSB10120	4.79	0.979 0.5841	0					
WRB10110	14.2	IRR19480930	1			60404584301		
WSB10110	60	0.979 0.5841	0					
WRB10100	0.56	IRR19550331	1			60404585301		
WSB10100	50	0.979 0.5841	0					
WRB10090	1	IRR19641231	1			60404586301		
WSB10090	12	0.979 0.5841	0					
WRB10080	150	IRR19561231	1			60404587301		
WSSIMPSN	2500	0.4012 0.856	0					
**								
**								
**	_		_					
		oir (aka Johnson		oir)		60404500304	4500	
WRB10070	6668	IND19600504	1			60404588301	4588	
WSJOHNSN **	10100							
WRB10070	0	REC19600504	1			60404500707	4500	
WSJOHNSN	10100	KEC13000204	1			60404588302	4588	
MODIFICEM	TOTOD							

**		Cyp03_p1t129-Base_FS1200-FYLOTP							
**									
WRB10050	0	REC19751208							
WSB10050	240		1	•			60404589301		
**	240	0.979 0.5841		0					
**									
** lake (	O'the Pi	nos							
		es :====================================							
			====			======	=======================================		
WRB10040	40070	MUN19570916	10	WATER	AUTHORIZED TO BE TA	AKEN AT	BOB SANDLIN		
WSLKOPNS	251000	-1	1				1MUN	4590	FYLOTP
WRB10040	151800	IND19570916	1						
WSLKOPNS	251000	TINDTACKED	1				2IND	4590	FYLOTP
		=======================================							
**			====	=====		======	==========		
WRF10250	8	IRR19670430	1			1	60404501301		
WSF10250	6	0.979 0.5841	_	0		1	60404591301		
WRF10230	96.88	IRR19690930	1	Ū		1	60404592001		
WRF10240	85	IRR19620531	1			1	60404593301		
WSF10240	100	0.979 0.5841	_	0		Τ.	00404595501		
WRF10220	1080	IRR19550103	1	•		1	60404594002		
WRF10210	2000	MUN19630218	1			1	60404595001		
WRF10190	80.21	IRR19570319	1			1	60404596001		
WRC10040	25	IRR19760621	1			1	60404597301		
WSC10040	35	0.979 0.5841		0			00404337301		
WRC10030	10	IND19700126	1	-			60404598301		
WSC10030	5	0.979 0.5841		0			00404536501		
WRC10010	47	IRR19530731	1	_			60404599001		
WSC10010	7	0.979 0.5841		0			00404555001		
S0	40.42	47							
WRF10170	62.5	IRR19660630	1			1	60404600001		
WRD10090	0	REC19461121	1			-	60404601301		
WSD10090	135	0.979 0.5841		0			00.04001301		
WRD10080	0	REC19600211	1				60404602301		
WSD10080	1414	0.4012 0.856		0					

					c/pcs_prex_s sases_c_		
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.5841		0			
WRD10060	7.03	IRR19670630	1			60404604301	
WSD10060	28	0.979 0.5841		0			
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	<b>1</b> 5	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0	_		
WRF10020	42	IRR19790221	1	_	1	60404618301	4618
WSF10020	42	0.979 0.5841	_	0	_		4000
WRF10020	51	IRR19810413	1	_	1	60404618302	4618
WSF10020	42	0.979 0.5841		0			

				cy	/p03_pit129-Base_FS120	0-FYLOTP	
WR 10050	0	REC19760524	1		_	60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.5841		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.5841		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.5841		0			
WRF10100	0	REC19861125	1		1	10405112301	
WSF10100	277	0.979 0.5841		0			
WRA10280	0	IND19880121	1			10405167301	
WSPONDH1	477	0.979 0.5841		0			
WRB10300	0	IRR19890112	1			10405212301	
WSB10300	0.09	0.979 0.5841		0			
WRB10260	0	IRR19890810	1			10405251301	
WSB10260	86	0.979 0.5841		0			
IFD10110	1025.6	CONST19891214	1	1	IF5272		
**							
WRD10110	6180	MUN19891214	1			10405272301	5272
WSLKGILM	12720						32,2
WRD10110	0	REC19891214	1			10405272302	5272
WSLKGILM	12720					, _ , _ , ,	3272
WRF10090	0	REC19900710	1		1	10405302301	
WSF10090	80	0.979 0.5841		0			
WRA10260	0	IND19950522	1			10405529301	
WSPONDH4	173.7	0.979 0.5841		0			
WRE10080	0	REC19950801	1			10405537301	
WSE10080	296	0.979 0.5841		0			
WRE10090	34	IRR19980320	1			10405608301	5608
WSE10090	55.6	0.979 0.5841		0			2000
WRE10090	0	REC19980320	1			10405608302	5608
WSE10090	55.6	0.979 0.5841		0			
** This	water ri	ght is to fill Tex	kas'	nort	ion of Caddo Lako un d	o olovation 160	F C+

<sup>\*\*</sup> This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet

WRF10005	0	OTHER99	999999	1				6040	9999301	9999		
	L25000											
				iana's d	iversion	from Ca	ddo Lake		-			
WRF10005	40000	MUN99	999999	1				6040	9999302	9999		
	165000											
**	_											
** Storag	ge-Area	lables										
	•	4000	2222		0500	4.4000	22522	20000	40000		70000	07000
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN **	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
	^	450	700	4.400	2400	2000	5700	7000	0600	12600	45000	40000
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250	26000	40000	44500
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
		4141	C) (C A		D'4 400							
** Carollo							4054	4440	2070	3750	4000	F3FF
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129	0	12	16	20	23	25	33	39	50	62	72	98
**												

<sup>\*\*</sup> Drought Indices

<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

cyp03\_pit129-Base\_FS1200-FYLOTP \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation. \*\* Therefore, this DI record is only included as a place holder. \*\* DI 1 CADDO IS 0 125000 125001 865000 4 ΙP 100 100 100 100 \*\* Streamflow And Evaporation Records \*\*

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# $cyp03\_pit129\text{-}FYLOTP$

	•		
		•	
,			

```
T1 Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
    Updated 6/18/2015 KA
T3
**
**
    General Comments
**
JD
      51
            1948
                               -1
                                       -1
                                                0
                                                        5
                                                                0
                                                                        0
                                                                                3
                                                                                        0
                                                                                                0
                                                                                                         0
JO
      -1
RO
**
**FY
         1
             10000
                      1000
                               100
                                                104000PT129
                                        10
FΥ
     1.0 241800
                    1000
                             100
                                                           FYLOTP
**FY
       1.0
             48500
                      1000
                               100
                                        10
                                                                BOB
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850307
**FY
             10000
         1
                      1000
                               100
                                        10
                                                10405850301
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850306
**FY
         1
             10000
                      1000
                               100
                                        10
                                               10405850304
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850303
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850305
**FY
         1
             10000
                      1000
                               100
                                        10
                                                10405850302
**
    Monthly Water Use Factors
**
UC
    5813
                      60
              60
                              60
                                       60
                                               76
                                                       76
UC
              76
                      76
                              76
                                       60
                                               60
                                                       60
UC
     MUN
                   0.070
           0.077
                           0.075
                                   0.076
                                           0.084
                                                    0.091
UC
           0.100
                   0.100
                           0.089
                                   0.085
                                           0.076
                                                    0.078
UC
     IND
           0.068
                   0.063
                           0.070
                                   0.080
                                           0.081
                                                   0.077
UC
           0.109
                           0.104
                   0.109
                                   0.084
                                           0.072
                                                   0.076
UC
     IRR
           0.000
                           0.004
                   0.001
                                   0.013
                                           0.051
                                                    0.162
UC
           0.200
                   0.241
                           0.142
                                   0.097
                                           0.053
                                                    0.038
UC
           0.079
     MIN
                   0.080
                           0.084
                                   0.080
                                           0.081
                                                    0.077
UC
           0.080
                   0.084
                           0.088
                                   0.090
                                           0.090
                                                    0.087
UC
           0.083
     REC
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC
           0.083
                   0.083
                           0.083
                                           0.083
                                   0.083
                                                   0.083
```

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cyp03 pit129-Base-FYLOTP
UC OTHER
          0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                     1.0
UC MONTH
              31
                   28.25
                              31
                                      30
                                              31
                                                      30
UC
              31
                      31
                              30
                                      31
                                              30
                                                      31
**
  Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                       7
                                                    NONE
                                       7
CPPPDISC TCUSBC
                                                    NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                     513
**
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                       7
                                                     NONE
                                       7
CP585037 A10120
                                                     513
                                       7
CP585009 A10120
                                                     NONE
CP585010 A10120
                                                    NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                       513
**CP585007 A10000
                                         7
                                                      NONE
**CP585006 A10000
                                         7
                                                      NONE
CP585031 PPDISC
                                       7
                                                     513
CP585007 PPDISC
                                       7
                                                     NONE
CP585006 PPDISC
                                                     NONE
CP585036 585034
                                                     513
                                       7
CP585034 585033
                                                     513
                                                     513
CP585033 585032
                                       7
CP585035 585032
                                                     513
CP585032 585005
                                       7
                                                     513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                         7
                                                      NONE
**CP585004 A10000
                                         7
                                                      NONE
**CP585003 A10000
                                         7
                                                      NONE
**CP585002 A10000
                                         7
                                                      NONE
```

NONE

\*\*CP585001 A10000

```
cyp03_pit129-Base-FYLOTP
CP585005 PPDISC
                                                   NONE
CP585004 TCUSBC
                                       7
                                                   NONE
CP585003 TCUSBC
                                       7
                                                   NONE
CP585002 TCUSBC
                                       7
                                                   NONE
CP585001 TCUSBC
                                       7
                                                   NONE
CP585011 A10070
                                       7
                                                   NONE
CP585012 A10010
                                       7
                                                   NONE
CP585013 A10010
                                                   NONE
** add control points for A5814
CP581431 581432
                                       7
                                                 QAD413
CP581432 A10260
                                       7
                                                 QAD413
CP581433 A10240
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                       7
                                                   NONE
CP581302 D10000
                                       7
                                                   NONE
CP581303 D10000
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                                 B10170
CP458237 B10170
                                                 B10170
**
CPA10370 A10340
                                      7
                                                 0AD413
CPA10350 A10340
                                      7
                                                 QAD413
CPA10340 A10300
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
**
CPA10290 A10200
                                      7
                                                   NONE
CPA10280 A10240
                                      7
                                                 QAD413
CPA10260 A10240
                                      7
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
                                      7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                         7
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                                    513
```

#### cyp03\_pit129-Base-FYLOTP 7 CPA10090 TCUSBC 513 CPA10070 A10010 7 513 CPA10060 A10010 7 513 7 513 CPA10050 A10010 CPA10040 A10010 7 513 CPA10030 A10010 7 QAD413 CPA10020 7 NONE A10010 513 CPA10010 A10000 7 CPA10000 B10150 0 NONE CPB10320 7 QAD413 B10310 7 NONE CPB10310 B10150 CPB10300 7 QAD413 B10150 7 QAD413 CPB10290 B10150 CPB10270 B10150 7 CPB10260 QAD413 B10150 7 CPB10250 B10150 7 QAD413 7 CPB10230 B10170 513 CPB10220 B10230 7 513 CPB10210 B10150 7 513 CPB10200 B10150 7 513 7 513 CPB10180 B10170 CPB10170 7 B10150 CPB10150 B10040 7 NONE 7 513 CPB10120 B10040 CPB10110 B10040 7 513 CPB10100 B10040 7 513 CPB10090 7 513 B10040 513 CPB10080 B10040 7 7 CPB10070 B10040 7 QAD413 CPB10050 B10040 \*\*CPB10040 B10000 NONE 7 CPB10040 B10000 7 CPB10000 F10230 0 NONE CPC10050 C10010 7 QAD413 CPC10040 C10010 7 QAD413 CPC10030 C10010 7 QAD413

QAD413

NONE

0

CPC10010 C10000

CPC10000 F10180

#### cyp03\_pit129-Base-FYLOTP CPD10190 D10000 7 QAD412 CPD10180 D10000 7 QAD412 CPD10170 D10160 7 QAD412 CPD10160 D10150 7 513 CPD10150 D10130 7 513 CPD10140 D10130 7 QAD412 CPD10130 D10000 7 QAD412 CPD10120 D10000 7 QAD412 CPD10110 D10000 QAD412

7 CPD10090 D10000 7 QAD412 CPD10080 D10000 7 QAD412 CPD10070 D10000 7 QAD413 CPD10060 D10000 7 QAD413 CPD10050 D10000 7 NONE CPD10040 D10000 7 QAD413 CPD10030 D10000 7 QAD413 CPD10020 D10000 7 QAD413 D10000 7

CPD10010 QAD413 CPD10000 E10060 0 NONE CPE10090 E10080 7 513 CPE10080 E10060 7 513 CPE10070 E10060 7 513 CPE10060 E10040 7 QAD412 CPE10050 E10040 7 QAD412 CPE10040 E10000 7 NONE CPE10020 E10010 7 513 CPE10010 E10000 7 QAD412

0

7

NONE

513

QAD512

CPF10240 F10230 7 CPF10230 F10220 7 NONE CPF10220 F10210 7 NONE CPF10210 F10190 7 NONE CPF10190 F10130 7 NONE CPF10180 F10170 7 NONE

CPE10000 F10160

CPF10250 F10230

CPF10170 F10130 7 NONE CPF10160 F10130 7 NONE CPF10140 F10130 NONE

			сур03 р	it129-Base	-FYLOTP	
CPF10130	F10080	7	, <u>−</u> ,	NONE		
CPF10120	F10080	7		513		
CPF10110	F10080	7		513		
CPF10100	F10080	7		QAD512		
CPF10090	F10080	7		QAD413		
CPF10080	F10005	7		513		
CPF10030	F10020	7		QAD412		
CPF10020	F10005	7		513		
CPF10005	F10000	7				
CPF10000	OUT	0		NONE		
CP 10050	10040	7		QAD413		
CP 10040	10010	7		QAD413		
CP 10020	10010	7		QAD413		
CP 10010	OUT	7		NONE		
CPQAD412	OUT	0				
CPQAD413	OUT	0				
CPQAD512	OUT	0				
CP 513	OUT	0				
CPSABINE	OUT	2	NONE	NONE		
CPSULPHR	OUT	2	NONE	NONE		
CPA240DM	OUT	2	NONE	NONE		
CPB270DM	OUT	2	NONE	NONE		
CPB70DUM	OUT	2	NONE	NONE		
CPB20MUN	OUT	2	NONE	NONE		
CPAVNGER	OUT	2	NONE	NONE		
CPDNGRFD	OUT	2	NONE	NONE		
CPHGHSPR	OUT	2	NONE	NONE		
CPJEFFSN	OUT	2	NONE	NONE		
CPLVGSTN	OUT	2	NONE	NONE		
CPORECTY	OUT	. 2	NONE	NONE		
**						
** =====	=======		======	=======	=======	====
CPA-ZERO	OUT	2	ZERO	ZERO	-3	0
	======		======	=======	======	====
**						

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<sup>\*\*</sup> Water Rights and Associated Reservoir Storage Information

<sup>\*\*</sup> Carollo add water right for modeling of pit 129  $\,$ 

					cyp03_pit129-Base-FYLOTP		
WR585100	482	IND20181231	1	1	1.0	104000PT129	PT129
WSPIT129	5355						. ,
WRB10040	0	IND20181231	1			JrFill	4590
WSLKOPNS	251000					511211	4330
**							
**TXU app	5850, 6,	/24/05, kb					
WR585001	50	IND20041231	1			10405850001	5850
WR585002	0	IND20041231	1			10405850002	5850
SO			BACK	(UP		20103030002	2020
WR585003	0	IND20041231	1			10405850003	5850
S0			BACK	(UP		10403030003	2020
WR585004	0	IND20041231	1			10405850004	5850
SO			BACK	(UP		20103030004	3030
WR585005	0	IND20041231	1			10405850005	5850
SO			BACK	(UP		10403030003	2020
WR585006	0	IND20041231	1			10405850006	5850
SO			BACk	(UP		10103030000	2020
WR585007	0	IND20041231	1			10405850007	5850
S0			BACK	(UP		20103030007	3030
WR585008	0	IND20041231	1			10405850008	5850
S0			BACK	(UP		_0.05050000	3030
WR585009	0	IND20041231	1			10405850009	5850
S0			BACK	(UP			3030
WR585010	0	IND20041231	1			10405850010	5850
SO			BACK	(UP			3030
WR585011	0	IND20041231	1			10405850011	5850
S0			BACK	(UP			
WR585012	0	IND20041231	1			10405850012	5850
S0			BACK	(UP			
WR585013	0	IND20041231	1			10405850013	5850
S0			BACK	(UP			
WR585037	0	IND20041231	1			10405850307	5850
WSR58507	525.6	0.979 0.5841					
WR585031	0	IND20041231	1			10405850301	5850
WSR58501	271.4	0.979 0.5841					<del>-</del>
WR585036	0	IND20041231	1			10405850306	5850
WSR58506	327	0.979 0.5841					
WR585034	0	IND20041231	1			10405850304	5850

				/ <u> </u>		
WSR58504	509.3	0.979 0.5841				
WR585033	0	IND20041231	1		10405850303	5850
WSR58503	287.3	0.979 0.5841				
WR585035	0	IND20041231	1		10405850305	5850
	604.8	0.4012 0.856				
WR585032	0	IND20041231	1		10405850302	5850
WSR58502	245.1	0.979 0.5841				
**						
** APPLICAT		14				
WR581431	0	OTHER20031028	1		10405814301	
WS HR9	356	0.979 0.5841				
WR581432	0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841				
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856				
** APPLICAT	ION 58	13				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813003	
S0			BACKUP			
WR581302	0	581320031001	1		10405813002	
S0			BACKUP			
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM	130	0.979 0.5841	0			
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH	5	0.979 0.5841	0			
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0			
WRF10080	2343	MUN19830418	1		1 10404349001	4349
WSF10080	8.29	0.979 0.5841	0			
SO 32	93.45	2343				

					cyp03_pit129-Base-FYLOTP		
WRF10080	1281	IND19830418	1			10404240002	42.40
WSF10080	8.29		_	0	1	10404349002	4349
SO	3293.45	1281		Ü			
WRB10250	0	REC19841127	1			40404	
WSB10250	380		_	0		10404522301	
WRF10180	202.5		1	0	_		
WRA10370	0		1		1	10404525101	
WSA10370	350		1	_		60404558301	
WRA10370	9			0			
WSA10350			1			60404559301	
** M2VT6220	230	0.979 0.5841		0			
**							
	C	<b>.</b>					
** Lake	Cypress	Springs					
**							
WRA10340	10500	MUN19700720	1			60404560301	4560 CYPRESS
WSLKCYPS	72800						
**							
WRA10340	1000	MUN19660131	1			60404560302	4560 CYPRESS
WSLKCYPS	72800						TO CIT NEEDS
**							
WRA10340	210	IRR19700720	1			60404560303	4560 CYPRESS
WSLKCYPS	72800					00.0.00000	4300 CH KESS
**							
WRA10340	3590	IND19700720	1			60404560304	4560 CYPRESS
WSLKCYPS	72800					00-0-00004	4500 CTPRESS
**							
WRA10340	0	REC19660131	1			60404560305	AFCO CYDDECC
WSLKCYPS	72800		_			00404500505	4560 CYPRESS
**							
**							
WRA10300	11.61	IRR19630831	1			CO404EC4004	
WRA10290	24.0	IRR19630801	1			60404561001	
**	2710	TW/T2020001	Т			60404562002	
**							
** lake	Montice]	110					
- with		-10					

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WRA10240 WSLKMONT **	15300 40100	IND19700406	1	cypes_pitiz9-base	60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1		60404563302	4563	
** **							
** Lake	Bob Sand]	lin					
**							
WRA10200	10000	MUN19711220	1		60404564301	4564	BOB
WSBOBSAN **	213350						
WRA10200	8000	IND19711220	1		60404564302	4564	вов
WSBOBSAN	213350						
** WRA10200	10900	IND19711220	1		60404564303	4564	ВОВ
WSBOBSAN		11013/11220	_		00-0-30-303	7507	DOD
**							
WRA10200	0	REC19711220	1		60404564305	4564	ВОВ
WSBOBSAN ** LOTP W		1 BOB SANDLIN - 1	ΜΙΙΝΤ Δ	UTHORTZATTON			
WRA10200	1930	MUN19711220	1	0 111011227112011	2MEMBERSFRMBOB	4590	BOB LOTPBOB
WSBOBSAN							
		1 BOB SANDLIN -		THORIZATION	47/41 40475	4500	DOD LOTDDOD
WRA10200 WSBOBSAN	10000	IND19711220	1		1TXU_MONTE	4590	BOB LOTPBOB
		ORIZATION OF BOB	SANDL	IN WATER RIGHT. NOTE	THAT THIS AUTH WAS DEE	MED TO N	NOT HAVE ACCESS TO
		DRAGE, INFLOWS O					
WRA10200	19600	IND19780313	1		60404564304	4564	BOBROR
** **							
WRA10120	1680	MUN19550822	 1		60404565301	4565	
WSTANKSL		0.4012 0.856		0 .			
WRA10120	550	IND19550822	1		60404565302	4565	
WSTANKSL		0.4012 0.856		0			
WRA10120 WSTANKSL	0 2700	REC19550822	1	٥	60404565303	4565	
MOTANKOL	2/00	0.4012 0.856		0			

					cyp03_pit129-Base-FYLOTP		
WRA10090	21.44	IRR19591231	1		eypes_prezzs base i reoff	60404566301	
WSA10090	0.23	0.979 0.5841		0		1004040001	
WRA10100	6	IRR19561231	1			60404567301	
WSA10100	5	0.979 0.5841		0		00404307301	
WRA10050	7.5	IRR19631231	1			60404568301	
WSA10050	35	0.979 0.5841		0		00+0+300301	
WRA10070	400	MUN19380317	1			60404569301	4569
WSNEWCTY	1176	0.4012 0.856		0		00101303301	4505
WRA10070	0	REC19380317	1			60404569302	4569
WSNEWCTY	1176	0.4012 0.856		0		30.0.303302	4505
WRA10060	144	MUN19750120	1			60404570301	4570
WSOLDCTY	100	0.979 0.5841		0		00.0.0,0001	1370
WRA10060	0	REC19750120	1			60404570302	4570
WSOLDCTY	100	0.979 0.5841		0		00.0.370302	4370
WRA10040	4	IRR19631231	1			60404571301	
WSA10040	12	0.979 0.5841		0		00.0.57.1301	
WRA10030	4.4	IRR19631231	1			60404572301	
WSA10030	10	0.979 0.5841		0		00.0.0,2502	
WRE10020	25.3	IND19850604	1			10404573301	
WSE10020	42	0.979 0.5841		0			
WRA10010	11	IRR19551231	1			60404573001	
WRB10320	0	IRR19511231	1			60404574001	4574
WSOFF320	5.0	0.979 0.5841		0			.57 .
SO	5.43	1.40					
WRB10320	1.4	IRR19511231	1			60404574301	4574
WSB10320	0.5	0.979 0.5841		0			
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0						
S0	5.43	1.40					
WRB10290	0	REC19730430	1			60404575301	
WSB10290	80	0.979 0.5841		0			
**							
**							
**							
	Reservo	ir					
WRB10270	11000	IND19730910	1			60404576301	4576
WS WELSH	23587						

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0 23587	REC19730910	1	60404576302 4576	
124	IRR19500930	1	60404577301	
96	0.979 0.5841		0	
6	IRR19521231	1	60404578301	
1	0.979 0.5841		0	
75	IRR19531231	1	60404579301	
64	0.979 0.5841		0	
. 2	IRR19581231	1	60404580301	
0.5	0.979 0.5841		0	
0	REC19690922	1	60404581301	
510	0.979 0.5841		0	
				oir,
		upply	to Ellison Crk Reservoir using the SO Record.	
on Creek	Docomunic			
	Kezervotr			
	Kezervotr			
2000	MUN19720508	1	60404582001 4582 ELLISON	
		1	60404582001 4582 ELLISON	
2000 24700	MUN19720508	1		
2000 24700 21000		1	60404582001 4582 ELLISON 60404582002 4582 ELLISON	
2000 24700 21000 24700	MUN19720508 IND19421130	1	60404582002 4582 ELLISON	
2000 24700 21000 24700	MUN19720508 IND19421130 ress Creek at pr	1	60404582002 4582 ELLISON	
2000 24700 21000 24700 from Cyp	MUN19720508 IND19421130	1	60404582002 4582 ELLISON	
2000 24700 21000 24700	MUN19720508 IND19421130 ress Creek at pr 19421130	1 iorit	60404582002 4582 ELLISON	
2000 24700 21000 24700 from Cyp	MUN19720508 IND19421130 ress Creek at pr	1 iorit	60404582002 4582 ELLISON	
2000 24700 21000 24700 from Cyp 24700	MUN19720508  IND19421130  ress Creek at pr: 19421130  26000 B10150	1 iorit 1	60404582002 4582 ELLISON 60404582004 4582 ELLISON	
2000 24700 21000 24700 from Cyp 24700	MUN19720508 IND19421130 ress Creek at pr 19421130	1 iorit 1	60404582002 4582 ELLISON 60404582004 4582 ELLISON	
2000 24700 21000 24700 from Cyp 24700	MUN19720508  IND19421130  ress Creek at pr: 19421130  26000 B10150	1 iorit 1	60404582002 4582 ELLISON 60404582004 4582 ELLISON	
2000 24700 21000 24700 from Cyp 24700 llaneous	MUN19720508  IND19421130  ress Creek at pr: 19421130  26000 B10150  impoundments on	1 iorit 1	60404582002 4582 ELLISON 60404582004 4582 ELLISON s Cr etc.	
2000 24700 21000 24700 from Cyp 24700 llaneous	MUN19720508  IND19421130  ress Creek at pr: 19421130  26000 B10150  impoundments on  OTHER19720508	1 iorit 1	60404582002 4582 ELLISON 60404582004 4582 ELLISON s Cr etc. 60404582303 4582 barnes	
	23587  124 96 6 1 75 64 2 0.5 0 510  ss Crk ded to su	23587  124 IRR19500930 96 0.979 0.5841 6 IRR19521231 1 0.979 0.5841 75 IRR19531231 64 0.979 0.5841 2 IRR19581231 0.5 0.979 0.5841 0 REC19690922 510 0.979 0.5841 ss Crk diversion point, ced to supplement water se	23587  124	124

60					chhas_birisa-gase-EAFOIb			
S0 **		458237	BAC	KUP				
**								
WRB10120	38.3	IRR19620731	1			60404583301		
WSB10120	4.79	0.979 0.5841		0		00101505501		
WRB10110	14.2	IRR19480930	1			60404584301		
WSB10110	60	0.979 0.5841		0		1954964961		
WRB10100	0.56	IRR19550331	1	_		60404585301		
WSB10100	50	0.979 0.5841	_	0		00404363301		
WRB10090	1	IRR19641231	1	•		60404506304		
WSB10090	12	0.979 0.5841	_	0		60404586301		
WRB10080	150	IRR19561231	1	Ū		C0404507304		
WSSIMPSN	2500	0.4012 0.856	-	0		60404587301		
**		0.050		v				
**								
**								
** Wilke	Reserv	oir (aka Johnson	. Doc					
WRB10070	6668	IND19600504		ervoi	ir)			
WSJOHNSN	10100	111013000304	1			60404588301	4588	
**	10100							
WRB10070	0	DEC10000004						
WSJOHNSN	0 10100	REC19600504	1			60404588302	4588	
**	10100							
**								
	•	DE040774000						
WRB10050	0	REC19751208	1			60404589301		
WSB10050 **	240	0.979 0.5841		0				
**								
	O'the Pi							
						=========	=	
** REDUCE	LOTP DE	MAND FOR PORTION	l OF	WATER	AUTHORIZED TO BE TAKEN A	T BOB SANDLIN		
WRB10040	40070	MUN19570916	1			1MUN	4590	FYLOTP
WSLKOPNS	251000	-1				- ·		
WRB10040	151800	IND19570916	1			2IND	4590	FYLOTP
WSLKOPNS	251000							
** ======	======	==============	====	=====	=======================================	==========	=	
**								
WRF10250	8	IRR19670430	1		1	60404591301		

					<i></i>	—'				
WSF10250	6	0.979 0.5841		0						
WRF10230	96.88	IRR19690930	1					1	60404592001	
WRF10240	85	IRR19620531	1					1	60404593301	
WSF10240	100	0.979 0.5841		0						
WRF10220	1080	IRR19550103	1					1	60404594002	
WRF10210	2000	MUN19630218	1					1	60404595001	
WRF10190	80.21	IRR19570319	1					1	60404596001	
WRC10040	25	IRR19760621	1						60404597301	
WSC10040	35	0.979 0.5841		0						
WRC10030	10	IND19700126	1						60404598301	
WSC10030	5	0.979 0.5841		0						
WRC10010	47	IRR19530731	1						60404599001	
WSC10010	7	0.979 0.5841		0						
SO	40.42	47								
WRF10170	62.5	IRR19660630	1					1	60404600001	
WRD10090	0	REC19461121	1						60404601301	
WSD10090	135	0.979 0.5841		0						
WRD10080	0	REC19600211	1						60404602301	
WSD10080	1414	0.4012 0.856		0						
WRD10070	0	REC19730312	1						60404603301	
WSELWOOD	116	0.979 0.5841		0						
WRD10060	7.03	IRR19670630	1						60404604301	
WSD10060	28	0.979 0.5841		0						
WRD10030	0	REC19741209	1						60404605301	4605
WSD10030	. 36	0.979 0.5841		0						
WRD10040	0	REC19741209	1						60404605302	4605
WSD10040	114	0.979 0.5841		0						
WRD10020	0	REC19740812	1						60404606301	
WSD10020	294	0.979 0.5841		0						
WRD10010	0	REC19740812	1						60404607301	
WSD10010	330	0.979 0.5841		0						
WRE10070	18.2	IRR19520630	1						60404608301	
WSE10070	20	0.979 0.5841		0						
WRE10060	15	IND19680318	1						60404609001	4609
WSE10060	4.8	0.979 0.5841		0						
WRE10050	225	IND19821206	1						60404609301	4609
WSE10050	228.2	0.979 0.5841		0						
WRE10040	122	IRR19551010	1						60404610001	

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WRE100		IND19430701	1			60404611301	
WSHOLM				0			
WRF101		IRR19550323	1		1	60404612001	
WRF101		MIN19690224	1		1	60404613001	
WRF101		MUN19470418	1		1	60404614001	4614
WRF101		MUN19561127	1		1	60404614002	4614
WRF101		IRR19751215	1		1	60404615301	
WSF101		0.979 0.5841		0			
WRF101		REC19690811	1		1	60404616301	
WSSHAD		0.4012 0.856		0			
WRF100	_	REC19720207	1		1	60404617301	
WSLIND		0.979 0.5841		0			
WRF100		IRR19790221	1		1	60404618301	4618
WSF100		0.979 0.5841		0			
WRF100		IRR19810413	1		1	60404618302	4618
WSF100		0.979 0.5841		0			
WR 100		REC19760524	1			60404619301	
WS 100		0.979 0.5841		0			
WR 100	_	REC19781016	1			60404620301	
WS 100		0.4012 0.856		0			
WR 100		REC19470922	1			60404621301	
WS 100		0.979 0.5841		0			
WRD101		REC19860404	1			10405054301	
WSD101		0.979 0.5841		0			
WRC100		REC19860729	1			10405080301	
WSC100		0.979 0.5841		0			
WRF101		REC19861125	1		1	10405112301	
WSF101		0.979 0.5841		0			
WRA102		IND19880121	1			10405167301	
WSPOND		0.979 0.5841		0			
WRB103	-	IRR19890112	1			10405212301	
WSB103		0.979 0.5841		0			
WRB102		IRR19890810	1			10405251301	
WSB102		0.979 0.5841		0			
IFD101 **	10 1025.6	CONST19891214	1	1	IF5272		
WRD101	10 6180	MUN19891214	1			10405272301	5272
WSLKGI	LM 12720						J2, L

WRD10110	0	REC19	9891214	1				1040	5272302	5272		
WSLKGILM	12720											
WRF10090	0		9900710	1			1	1040	5302301			
WSF10090	80		0.5841	0								
WRA10260	0		9950522	1				1040	5529301			
WSPONDH4	173.7		0.5841	0								
WRE10080	0	REC19	9950801	1				1040	5537301			
WSE10080	296	0.979	0.5841	0								
WRE10090	34	IRR1	9980320	1				1040	5608301	5608		
WSE10090	55.6	0.979	0.5841	0								
WRE10090	0	REC1	9980320	1				1040	5608302	5608		
WSE10090	55.6	0.979	0.5841	0								
	water ri	ght is t	o fill T	exas' po	rtion of	Caddo L	ake up t	o elevat	ion 168.	5 feet		
WRF10005	0	OTHER9	9999999	1				6040	99993 <b>01</b>	9999		
WS CADDO	125000											
** This	water ri	ght is f	or Louis	iana's d	iversion	from Ca	ddo Lake	for eac	h year			
WRF10005	40000	MUN9	9999999	1				6040	9999302	9999		
WS CADDO	165000											
**												
** Stor	age-Area	Tables										
**												
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
NZNHOCVZ	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
NZNHOLAZ	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930

					cyp03_pi	t129-Bas	e-FYLOTF	)				
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM **	0	285	430	570	720	895	1100	1350	1630			
** Carollo add	add	itional	SVSA cur	ve for F	it 129.							
SVPIT129	0	94	161	251	359	479	1054	1410	2079	3759	4090	5355
SAPIT129 **	0	12	16	20	23	25	33	39	50	62	72	98

<sup>\*\*</sup> Drought Indices

DI 1 1 CADDO IS 4 0 125000 125001 865000 IP 100 100 100 100

Streamflow And Evaporation Records

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<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.

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** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100 A10000
WP585100 1.26875
FDTCUSBC A10000
                      0
WPTCUSBC 35.3043
FDPPDISC A10000
                      0
WPPPDISC 21.8636
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008 A10000
                      0
WP585008 5.0368
FD585037 A10000
                      0
WP585037 0.4791
FD585009 A10000
                      0
WP585009 1.1166
FD585010 A10000
                      0
WP585010 1.2373
FD585031 A10000
                      0
WP585031 0.4284
FD585007 A10000
                      0
WP585007 0.2604
FD585006 A10000
                      0
WP585006 2.8062
FD585036 A10000
                      0
WP585036 0.4570
FD585034 A10000
                      0
WP585034 0.5905
FD585033 A10000
                      0
WP585033 2.9988
FD585035 A10000
                      0
WP585035 0.6235
FD585032 A10000
                      0
WP585032 4.2301
```

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FD585005 A10000
                      0
WP585005 5.8348
FD585004 A10000
                      0
WP585004 0.1356
FD585003 A10000
                      0
WP585003 1.9687
FD585002 A10000
                      0
WP585002 0.1512
FD585001 A10000
                      0
WP585001 0.1708
FD585011 A10000
                      0
WP585011 2.2375
FD585012 A10000
                      0
WP585012 2.6298
FD585013 A10000
                      0
WP585013 1.0074
**
** Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431 A10000
                      0
WP581431
            .855
FD581432 A10000
                      0
WP581432
            .930
FD581433 A10000
                      0
WP581433
            .401
** ADD ADDITIONAL CPS FOR A5813
FD581301 D10000
                      0
WP581301
         7.151
**
FD581302 D10000
                      0
WP581302
          0.303
**
FD581303 D10000
                      0
WP581303
          2.545
**
```

** ADD ADI	OITIONAL	CPS	FOR	BARNEC	CREEV	WATERSHED	chho2_biri53.012
FD458232	B10000	Ç, J	0	A10000	CKEEK	MATEKSHED	
WP458232	3.364		Ü	ATOOOO			
**	3.301						
FD458237	B10000		0	A10000			
WP458237	.227		_				
**							
FDA10370	A10000		0				
FDA10350	A10000		0				
FDA10340	A10000		0				
FDA10300	A10000		0				
FDA10290	A10000		0				
FDA10280	A10000		0				
FDA10260	A10000		0				
FDA10240	A10000		0				
FDA10200	A10000		0				
FDA10120	A10000		0				
FDA10100	A10000		0				
FDA10090	A10000		0				
FDA10070	A10000		0				
FDA10060	A10000		0				
FDA10050	A10000		0				
FDA10040	A10000		0				
FDA10030	A10000		0				
FDA10020	A10000		0				
FDA10010	A10000		0				
FDB10320	B10000		0	A10000			
FDB10310	B10000		0	A10000			
FDB10300	B10000		0	A10000			
FDB10290	B10000		0	A10000			
FDB10270	B10000		0	A10000			
FDB10260	B10000		0	A10000			
FDB10250	B10000		0	A10000			
FDB10230	B10000		0	A10000			
FDB10220	B10000		0	A10000			

FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000
FDB10080	B10000	0	A10000
FDB10070	B10000	0	A10000
FDB10050	B10000	0	A10000
FDB10040	B10000	1	A10000
FDC10050	C10000	0	
FDC10040	C10000	0	
FDC10030	C10000	0	
FDC10010	C10000	0	
FDD10190	D10000	0	
FDD10180	D10000	0	
FDD10170	D10000	0	
FDD10160	D10000	0	
FDD10150	D10000	0	
FDD10140	D10000	0	
FDD10130	D10000	0	
FDD10120	D10000	0	
FDD10110	D10000	0	
FDD10090	D10000	0	
FDD10080	D10000	0	
FDD10070	D10000	0	
FDD10060	D10000	0	
FDD10050	D10000	0	
FDD10030	D10000	0	
FDD10040	D10000	0	
FDD10020	D10000	0	
FDD10010	D10000	0	

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FDE10090	E10000	0	D10000			)  <u>-</u>
FDE10080	E10000	0	D10000			
FDE10070	E10000	0	D10000			
FDE10060	E10000	1	D10000			
FDE10050	E10000	0	D10000			
FDE10040	E10000	1	D10000			
FDE10020	E10000	0	D10000			
FDE10010	E10000	0	D10000			
FDF10250	F10000	0	B10000	C10000	E10000	
FDF10240	F10000	0	B10000	C10000	E10000	
FDF10230	F10000	1	B10000	C10000	E10000	
FDF10220	F10000	1	B10000	C10000	E10000	
FDF10210	F10000	1	B10000	C10000	E10000	
FDF10190	F10000	1	B10000	C10000	E10000	
FDF10180	F10000	1	C10000	B10000	E10000	
FDF10170	F10000	1	C10000	B10000	E10000	
FDF10160	F10000	1	E10000	B10000	C10000	
FDF10140	F10000	0	B10000	C10000	E10000	
FDF10130	F10000	3	B10000	C10000	E10000	
FDF10120	F10000	0	B10000	C10000	E10000	
FDF10110	F10000	0	B10000	C10000	E10000	
FDF10100	F10000	0	B10000	C10000	E10000	
FDF10090	F10000	0	B10000	C10000	E10000	
FDF10080	F10000	3	B10000	C10000	E10000	
FDF10030	F10000	0	B10000	C10000	E10000	
FDF10020	F10000	0	B10000	C10000	E10000	
FDF10005	F10000	3	B10000	C10000	E10000	
FD 10050	F10000	0	B10000	C10000	E10000	
FD 10040	F10000	0	B10000	C10000	E10000	
FD 10020	F10000	0	B10000	C10000	E10000	
FD 10010	F10000	0	B10000	C10000	E10000	
**						
	shed Parame <sup>.</sup>	ters				
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WPA10370 6.8736 72.93 43.42

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10230	1.0911	58.52	46.67
WPF10240	927.86	68.58	45.18
WPF10230			
	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10140	5.7082	64.03	47.1
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2
WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100
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cyp03 pit129.EVA EVA10200 1948 0.129 0.151 0.019 0.032 0.073 0.442 0.244 0.375 0.467 0.225 -0.059 0.051 EVB10170 1948 0.015 0.138 0.061 0.068 -0.067 0.421 0.235 0.315 0.386 0.217 -0.155 0.031 EVB10070 1948 -0.016 0.162 0.053 0.070 -0.081 0.417 0.246 0.297 0.370 0.216 -0.186 0.023 EVF10005 1948 -0.037 0.069 0.204 0.076 -0.056 0.413 0.273 0.299 0.364 0.249 -0.219 0.027 EVA10340 1948 0.185 0.164 -0.004 0.076 0.075 0.447 0.252 0.401 0.493 0.243 -0.034 0.063 EVA10240 1948 0.142 0.163 0.009 0.074 0.046 0.444 0.247 0.383 0.477 0.229 -0.049 0.055 EVb10040 1948 -0.024 0.059 0.177 0.072 -0.072 0.415 0.256 0.297 0.368 0.228 -0.198 0.025 EVB10270 1948 0.075 0.104 0.066 0.069 -0.024 0.433 0.235 0.342 0.428 0.210 -0.101 0.038 EV -0.050 513 1948 0.080 0.230 0.080 -0.040 0.410 0.290 0.300 0.360 0.270 -0.240 0.030 EVQAD412 1948 0.350 0.400 -0.240 0.100 0.280 0.490 0.320 0.480 0.650 0.250 0.100 0.080 EVOAD413 1948 0.050 0.000 0.030 0.050 -0.160 0.430 0.160 0.290 0.390 0.110 -0.080 0.010 EVOAD512 1948 0.100 0.080 0.170 0.060 0.020 0.420 0.210 0.420 0.420 0.310 -0.080 0.090 EVA10200 1949 -0.366 0.055 -0.057 -0.007 0.125 0.281 0.089 0.480 0.368 0.024 0.214 -0.027 EVB10170 -0.427 1949 -0.034 0.040 -0.007 0.191 0.080 0.007 0.462 0.352 -0.073 0.320 -0.068 EVB10070 1949 -0.427 0.033 -0.040 -0.009 0.187 0.049 -0.049 0.428 0.330 -0.094 0.326 -0.080 EVF10005 1949 -0.423 0.031 -0.034 -0.034 0.189 -0.086 0.086 0.398 0.318 -0.165 0.341 -0.080 EVA10340 -0.472 1949 0.062 -0.079 -0.043 0.172 0.326 0.142 0.542 0.395 -0.077 0.297 -0.031 EVA10240 1949 -0.469 0.057 -0.079 -0.032 0.171 0.274 0.115 0.528 0.384 -0.064 0.297 -0.040 EVB10040 -0.425 1949 0.033 -0.038 -0.018 0.187 0.062 -0.062 0.417 0.326 -0.120 0.331 -0.080

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cyp03 pit129.EVA 1949 EVB10270 -0.450 0.047 -0.062 -0.011 0.178 0.152 0.054 0.493 0.364 -0.050 0.305 -0.059 EVOAD412 1949 -0.580 0.070 -0.230 -0.100 0.100 0.650 0.160 0.550 0.370 -0.120 0.260 -0.020 EVOAD413 1949 -0.440 0.040 -0.060 0.070 0.180 -0.070 0.070 0.520 0.370 0.130 0.280 -0.080 0.250 0.270 EVOAD512 1949 -0.380 0.080 0.080 -0.040 0.280 0.620 0.480 -0.100 0.330 0.010 EV 513 1949 -0.4200.030 -0.030 -0.050 0.190 0.110 -0.110 0.380 0.310 -0.210 0.350 -0.080 0.127 EVA10200 1950 0.054 0.065 0.022 0.040 0.250 0.121 0.420 -0.063 0.246 0.119 0.159 EVB10170 1950 0.004 0.045 0.157 0.019 0.013 0.116 0.261 0.476 -0.211 0.218 0.136 0.168 -0.003 0.153 0.250 EVB10070 1950 0.047 0.027 0.003 0.106 0.463 -0.237 0.207 0.127 0.157 EVF10005 1950 -0.007 0.031 0.157 0.023 0.019 0.244 0.133 0.473 -0.214 0.203 0.111 0.147 EVA10340 0.048 0.035 0.136 0.080 1950 -0.009 0.236 0.153 0.473 -0.107 0.250 0.169 0.192 0.042 0.135 EVA10240 1950 0.041 -0.001 0.063 0.236 0.136 0.464 -0.137 0.243 0.167 0.188 EVB10040 1950 -0.005 0.041 0.155 0.025 0.009 0.248 0.116 0.467 -0.229 0.205 0.121 0.153 EVB10270 1950 0.022 0.051 0.143 0.013 0.028 0.246 0.112 0.461 -0.193 0.228 0.154 0.178 -0.060 EVQAD412 1950 0.110 0.050 0.060 -0.020 0.150 0.120 0.140 0.370 0.260 0.210 0.190 0.140 EVOAD413 1950 0.010 0.100 0.040 -0.050 0.270 0.020 0.430 -0.310 0.220 0.180 0.190 EVOAD512 0.020 -0.020 0.220 -0.040 0.100 0.360 0.260 0.630 0.010 0.280 0.140 1950 0.220 EV 513 -0.010 0.020 0.160 0.020 0.030 0.240 0.150 0.480 1950 -0.200 0.200 0.100 0.140 EVA10200 1951 -0.131 -0.015 0.113 0.023 0.124 0.166 0.147 0.376 -0.046 0.160 0.033 -0.009 EVB10170 1951 -0.208 -0.024 0.080 0.021 0.143 -0.026 0.148 0.333 -0.132 0.129 0.038 -0.072

cyp03\_pit129.EVA EVB10070 1951 -0.233 -0.020 0.055 0.160 -0.042 0.019 0.307 -0.141 0.136 0.136 0.030 -0.102 EVF10005 1951 -0.243 -0.014 0.015 0.056 0.166 0.008 0.151 0.297 -0.116 0.163 0.036 -0.132 EVA10340 1951 -0.146 -0.041 0.115 0.060 0.115 0.165 0.178 -0.113 0.409 0.083 0.135 0.000 EVA10240 1951 -0.160 -0.039 0.112 0.043 0.124 0.122 0.165 0.393 -0.127 0.128 0.073 -0.011 EVB10040 1951 -0.237 -0.018 0.040 0.032 0.162 -0.024 0.141 0.303 -0.132 0.146 0.032 -0.113 EVB10270 1951 -0.190 -0.033 0.101 0.017 0.024 0.138 0.146 0.357 -0.143 0.121 0.050 -0.042 EVOAD412 1951 -0.140 -0.060 0.090 0.080 0.150 0.440 0.150 0.440 -0.160 0.150 0.130 0.020 EVQAD413 1951 -0.200 -0.040 0.180 -0.100 -0.200 0.140 0.090 -0.220 0.340 0.050 0.010 -0.010 EVQAD512 1951 -0.070 -0.030 0.160 0.130 0.030 0.110 0.280 0.470 0.010 0.150 0.090 0.050 EV 513 1951 -0.250 -0.010 -0.010 0.080 0.170 0.040 0.160 0.290 -0.100 0.180 0.040 -0.150 1952 -0.056 -0.105 -0.015 EVA10200 -0.042 0.026 0.389 0.233 0.455 0.360 0.275 -0.282 -0.151 EVB10170 1952 -0.110 -0.155 -0.059 -0.073 0.031 0.384 0.271 0.353 0.445 0.250 -0.333 -0.192 EVB10070 1952 -0.120 -0.159 -0.057 -0.066 0.037 0.386 0.267 0.339 0.434 0.243 -0.318 -0.183 EVF10005 1952 -0.126 -0.178 -0.047 -0.075 0.027 0.395 0.257 0.358 0.241 -0.264 0.425 -0.181 EVA10340 1952 -0.081 -0.163 -0.056 -0.094 0.004 0.385 0.244 0.398 0.276 -0.312 0.479 -0.227 EVA10240 1952 -0.086 -0.158 -0.059 -0.086 0.012 0.249 0.384 0.271 -0.325 0.382 0.473 -0.220 EVB10040 1952 -0.122 -0.166 -0.053 -0.069 0.033 0.389 0.263 0.346 0.431 0.243 -0.299 -0.183 EVB10270 1952 -0.100 -0.151 -0.062 -0.074 0.028 0.382 0.262 0.355 0.458 0.259 -0.343 -0.204 EVQAD412 -0.070 -0.180 -0.050 -0.090 1952 -0.010 0.390 0.170 0.390 0.500 0.300 -0.250 -0.260

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cyp03 pit129.EVA 1952 -0.100 -0.100 -0.090 -0.040 EVOAD413 0.070 0.360 0.300 0.280 0.460 0.250 -0.490 -0.190 EVQAD512 -0.140 1952 -0.060 -0.170 -0.050 -0.030 0.390 0.300 0.280 0.500 0.490 -0.310 -0.230 EV 513 1952 -0.130 -0.190 -0.040 -0.080 0.020 0.400 0.250 0.370 0.420 0.240 -0.230 -0.180 EVA10200 0.266 1953 -0.081 -0.053 -0.045 -0.017 -0.049 0.391 0.104 0.414 0.438 -0.012 -0.121 EVB10170 1953 -0.118 -0.063 -0.117 -0.094 0.021 0.369 0.118 0.470 0.397 0.242 0.029 -0.186 EVB10070 1953 -0.137 -0.073 -0.123 -0.114 0.023 0.354 0.090 0.240 0.467 0.393 0.023 -0.199 EVF10005 -0.127 -0.096 -0.127 1953 -0.099 0.027 0.333 0.084 0.457 0.391 0.240 0.021 -0.230 -0.092 0.014 EVA10340 1953 -0.068 -0.084 -0.049 0.395 0.145 0.445 0.417 0.258 0.021 -0.178 EVA10240 -0.011 -0.085 -0.079 -0.096 -0.043 1953 0.392 0.131 0.450 0.414 0.255 0.020 -0.175 EVB10040 -0.081 -0.125 0.025 1953 -0.133 -0.109 0.347 0.088 0.463 0.393 0.240 0.023 -0.210 EVB10270 1953 -0.113 -0.066 -0.107 -0.065 -0.012 0.383 0.116 0.405 0.248 0.023 0.462 -0.174 EVQAD412 -0.160 -0.070 1953 -0.090 0.120 -0.210 0.390 0.040 0.380 0.440 0.280 -0.030 -0.200 EVOAD413 1953 -0.170 0.000 -0.110 -0.160 0.010 0.420 0.110 0.500 0.400 0.240 0.030 -0.100 EVOAD512 1953 0.050 -0.030 -0.090 0.040 0.080 0.420 0.330 0.490 0.410 0.250 0.080 -0.170 -0.130 0.030 0.390 0.020 EV 513 1953 -0.120 -0.110 -0.090 0.320 0.080 0.450 0.240 -0.250 EVA10200 1954 -0.091 0.179 0.234 0.088 -0.142 0.499 0.487 0.627 0.383 -0.156 0.019 -0.042 EVB10170 -0.239 -0.310 1954 -0.117 0.204 0.245 0.084 0.553 0.548 0.636 0.418 -0.013 -0.076 0.086 -0.258 0.416 -0.281 -0.026 EVB10070 1954 -0.120 0.196 0.233 0.549 0.533 0.601 -0.084 EVF10005 1954 -0.114 0.217 0.243 0.119 -0.228 0.574 0.556 0.431 -0.238 -0.047 0.570 -0.063

cyp03\_pit129.EVA EVA10340 1954 -0.120 0.245 0.289 0.124 -0.120 0.561 0.617 0.722 0.403 -0.308 0.042 -0.034 EVA10240 1954 -0.123 0.231 0.275 0.110 -0.150 0.550 0.596 0.708 0.399 -0.309 0.037 -0.049 EVB10040 1954 -0.118 0.204 0.237 0.098 -0.247 0.558 0.541 0.590 0.421 -0.266 -0.034 -0.077 EVB10270 1954 -0.124 0.207 0.252 0.085 -0.212 0.541 0.557 0.670 0.402 -0.314 0.015 -0.073 EVQAD412 1954 -0.160 0.260 0.300 0.180 0.000 0.520 0.650 0.750 0.330 -0.180 0.120 -0.020 EVQAD413 1954 -0.140 0.130 0.200 -0.020 -0.350 0.470 0.460 0.700 0.370 -0.420 0.040 -0.150 EVQAD512 1954 -0.060 0.310 0.350 0.140 -0.080 0.660 0.700 0.780 -0.440 0.500 -0.010 0.030 EV 513 1954 -0.110 0.230 0.250 0.140 -0.210 0.590 0.570 -0.210 0.550 0.440 -0.060 -0.050 EVA10200 1955 -0.026 -0.056 0.161 0.079 0.032 0.374 0.237 0.118 0.202 0.227 0.179 0.084 EVB10170 1955 -0.071 -0.106 0.148 0.099 0.031 0.337 0.200 0.000 0.198 0.158 0.247 0.069 EVB10070 1955 -0.083 -0.120 0.156 0.103 0.323 0.010 0.157 -0.023 0.185 0.142 0.227 0.060 EVF10005 -0.132 1955 -0.093 0.189 0.126 -0.002 0.333 0.147 -0.039 0.190 0.243 0.223 0.060 EVA10340 1955 -0.044 -0.075 0.172 0.104 0.072 0.401 0.328 0.070 0.237 0.297 0.290 0.100 EVA10240 1955 -0.049 -0.081 0.097 0.162 0.062 0.385 0.299 0.058 0.206 0.278 0.262 0.093 EVB10040 1955 -0.087 -0.124 0.168 0.111 0.006 0.327 0.153 -0.029 0.159 0.206 0.225 0.060 EVB10270 1955 -0.061 -0.094 0.146 0.091 0.043 0.352 0.237 0.027 0.203 0.158 0.256 0.078 EVQAD412 1955 -0.040 -0.070 0.230 0.100 0.050 0.450 0.370 0.110 0.250 0.270 0.360 0.120 EVOAD413 1955 -0.050 -0.080 0.050 0.030 0.050 0.290 0.190 0.030 -0.010 0.000 0.240 0.060 EVQAD512 1955 -0.020 -0.050 0.160 0.140 0.150 0.440 0.450 0.100 0.390 0.420 0.380 0.120

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cyp03 pit129.EVA EV 1955 -0.100 -0.140 513 0.210 0.140 -0.010 0.340 0.140 0.280 -0.050 0.220 0.220 0.060 EVA10200 1956 0.005 -0.102 0.143 0.095 0.288 0.120 0.389 0.460 0.414 0.191 -0.135 0.028 -0.038 -0.180 EVB10170 1956 0.095 0.067 0.055 0.234 0.378 0.385 0.343 0.130 -0.122 -0.007 EVB10070 0.053 1956 -0.043 -0.184 0.033 0.031 0.193 0.317 0.343 0.297 0.100 -0.127 -0.023 EVF10005 -0.053 0.051 1956 -0.169 0.037 0.006 0.209 0.319 0.341 0.299 0.100 -0.129 -0.033 EVA10340 1956 -0.022 -0.130 0.226 0.182 0.162 0.366 0.575 0.553 0.512 0.225 -0.136 0.036 EVA10240 1956 -0.022 -0.142 0.195 0.153 0.148 0.328 0.526 0.517 0.473 0.202 -0.136 0.028 EVB10040 -0.047 0.053 1956 -0.179 0.035 0.022 0.199 0.317 0.343 0.297 0.100 -0.127 -0.027 EVB10270 1956 -0.028 -0.167 0.130 0.096 0.102 0.259 0.428 0.436 0.390 0.154 -0.130 0.008 EVOAD412 1956 0.000 -0.060 0.270 0.290 0.390 0.610 0.230 0.640 0.680 0.260 -0.190 0.050 EVQAD413 0.060 1956 -0.010 -0.230 0.020 0.110 0.140 0.310 0.350 0.290 0.100 -0.120 0.010 EVOAD512 1956 -0.040 -0.1400.360 0.290 0.110 0.550 0.780 0.620 0.630 0.320 -0.080 0.070 ΕV 513 0.050 -0.010 0.220 0.100 -0.130 1956 -0.060 -0.160 0.040 0.320 0.340 0.300 -0.040 EVA10200 1957 -0.118 -0.114 -0.141 -0.201 0.065 0.170 0.285 0.304 -0.029 -0.148 -0.176 0.007 0.251 -0.110 EVB10170 1957 -0.191 -0.215 -0.224 -0.431 0.088 0.047 0.240 -0.392 -0.246 0.014 EVB10070 1957 -0.204 -0.240 -0.234 -0.431 0.131 0.017 0.190 0.230 -0.117 -0.438 -0.257 0.016 EVF10005 -0.246 -0.219 -0.412 0.216 -0.101 -0.488 -0.253 1957 -0.195 0.019 0.196 0.236 0.043 EVA10340 1957 -0.138 -0.122 -0.182 -0.281 0.066 0.171 -0.105 -0.231 -0.180 0.420 0.327 0.014 EVA10240 1957 -0.152 -0.140 -0.196 -0.303 0.060 0.143 0.377 0.307 -0.114 -0.253 -0.193 0.006

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cyp03\_pit129.EVA EVB10040 1957 -0.201 -0.242 -0.229 -0.424 0.161 0.017 0.232 -0.111 -0.456 -0.255 0.192 0.026 EVB10270 -0.179 -0.185 -0.219 1957 -0.372 0.059 0.083 0.287 -0.122 -0.321 -0.225 0.269 0.001 EVQAD412 1957 -0.110 -0.050 -0.170 0.040 0.160 0.260 0.510 -0.160 -0.080 0.360 -0.100 -0.010 EVQAD413 1957 -0.230 -0.220 -0.280 -0.490 -0.140 0.010 0.170 0.210 -0.170 -0.280 -0.270 -0.070 EVQAD512 1957 -0.090 -0.090 -0.120 -0.500 -0.010 0.230 0.570 0.400 0.000 -0.260 -0.190 0.080 EV 513 1957 -0.190 -0.250 -0.210 -0.400 0.270 0.020 0.200 0.240 -0.090 -0.520 -0.250 0.060 EVA10200 1958 -0.005 0.001 0.064 -0.070 0.232 0.109 0.123 0.094 -0.086 0.109 -0.099 0.046 EVB10170 1958 -0.015 -0.025 -0.151 0.067 0.342 -0.039 0.132 -0.010 -0.314 0.034 -0.087 0.075 EVB10070 1958 -0.020 0.060 -0.028 -0.179 0.364 -0.093 0.109 -0.048 -0.378 0.029 -0.094 0.077 EVF10005 1958 -0.014 0.060 0.002 -0.210 0.435 -0.109 0.140 -0.006 -0.453 0.048 -0.073 0.079 EVA10340 1958 -0.004 -0.009 0.078 -0.079 0.317 0.195 0.128 -0.161 0.140 0.081 -0.063 0.043 EVA10240 1958 -0.014 0.074 -0.016 -0.089 0.307 0.092 0.168 0.094 -0.182 0.069 -0.075 0.046 EVB10040 1958 -0.018 0.060 -0.017 -0.190 0.390 -0.099 0.120 -0.033 -0.405 0.036 -0.087 0.077 EVB10270 1958 -0.019 0.067 -0.033 -0.119 0.012 0.306 0.129 0.012 -0.244 0.043 -0.092 0.060 EVQAD412 1958 -0.040 0.060 -0.010 -0.040 0.300 0.150 0.200 0.190 -0.100 0.140 -0.080 -0.030 EVOAD413 1958 -0.120 -0.040 0.060 -0.080 -0.180 0.140 -0.040 0.010 -0.140 -0.030 -0.160 0.070 EVQAD512 1958 0.050 0.120 0.070 -0.060 0.380 0.260 0.390 0.340 -0.100 0.090 0.020 0.100 EV 513 1958 -0.010 0.060 0.020 -0.230 0.480 -0.120 0.160 0.020 -0.500 0.060 -0.060 0.080 EVA10200 1959 0.046 -0.102 0.190 0.086 0.040 0.160 0.037 0.339 0.270 0.058 0.009 -0.115

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cyp03 pit129.EVA EVB10170 1959 0.043 -0.142 0.218 0.059 -0.024 0.132 -0.028 0.342 0.211 0.038 0.022 -0.233 EVB10070 1959 0.040 -0.144 0.209 0.047 -0.016 0.155 -0.044 0.203 0.346 0.056 0.007 -0.240 EVF10005 1959 0.046 -0.129 0.228 0.037 -0.031 0.201 -0.035 0.361 0.213 0.077 0.009 -0.246 EVA10340 1959 0.241 0.258 0.048 -0.128 0.106 -0.002 0.092 0.035 0.327 -0.019 0.070 -0.170 EVA10240 1959 0.044 -0.135 0.228 0.099 0.004 0.092 0.019 0.326 0.246 -0.012 0.057 -0.177 0.042 -0.139 EVB10040 1959 0.216 0.043 -0.021 0.172 -0.041 0.064 0.007 0.351 0.207 -0.242 0.213 EVB10270 0.040 1959 -0.145 0.078 -0.001 0.104 -0.014 0.330 0.222 0.012 0.033 -0.205 0.120 0.080 EVQAD412 1959 0.030 -0.130 0.210 0.150 0.070 0.300 0.300 -0.070 0.080 -0.060 -0.190 EVOAD413 1959 0.020 0.150 0.080 0.030 0.010 -0.070 0.300 0.170 -0.010 0.000 -0.220 0.100 -0.160 0.100 EVOAD512 1959 0.090 -0.090 0.340 0.090 0.360 0.280 -0.010 0.130 -0.240 EV 513 1959 0.050 -0.120 0.240 0.030 -0.040 0.230 -0.030 0.220 0.090 0.010 0.370 -0.250 EVA10200 1960 -0.024 0.001 0.173 0.249 0.182 0.222 0.316 0.052 0.121 0.021 0.242 -0.101 EVB10170 1960 -0.036 -0.042 0.188 0.334 0.270 0.144 0.410 0.216 -0.082 0.050 -0.009 -0.260 0.282 0.216 -0.109 EVB10070 1960 -0.040 -0.050 0.190 0.336 0.146 0.426 0.047 -0.032 -0.250 0.324 0.231 -0.128 EVF10005 -0.034 -0.056 0.196 0.453 1960 0.345 0.161 0.049 -0.062 -0.244 EVA10340 1960 -0.036 -0.012 0.179 0.307 0.247 0.174 0.348 0.213 -0.005 0.077 0.061 -0.189 EVA10240 1960 -0.040 -0.017 0.179 0.309 0.241 0.167 0.353 0.209 -0.019 0.072 0.053 -0.194 0.192 0.297 0.151 EVB10040 1960 -0.038 -0.052 0.339 0.436 0.221 -0.116 0.047 -0.043 -0.248 EVB10270 1960 -0.042 -0.030 0.182 0.319 0.244 0.151 0.377 0.207 -0.054 0.059 0.024

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cyp03\_pit129.EVA EVOAD412 1960 -0.070 0.020 0.160 0.250 0.210 0.240 0.260 0.190 0.030 0.120 0.120 0.030 EVQAD413 -0.060 1960 -0.030 0.170 0.310 0.100 0.150 0.340 0.170 -0.050 0.040 0.060 -0.270 EVQAD512 1960 0.020 -0.020 0.200 0.360 0.310 0.140 0.410 0.260 0.040 0.060 0.050 -0.390 EV 513 1960 -0.030 -0.060 0.200 0.350 0.350 0.170 0.470 0.240 -0.140 0.050 -0.080 -0.240 EVA10200 1961 0.063 -0.027 -0.005 0.283 0.160 -0.056 0.102 0.311 0.182 0.149 -0.204 -0.107 EVB10170 0.012 -0.042 -0.081 1961 0.407 -0.276 0.259 0.104 0.308 0.100 0.109 -0.219 -0.169 EVB10070 1961 0.014 -0.043 -0.094 0.422 0.272 -0.324 0.095 0.306 0.090 0.086 -0.224 -0.183 EVF10005 1961 -0.041 -0.019 -0.061 0.470 0.308 -0.401 0.141 0.333 0.084 0.113 -0.215 -0.181 EVA10340 1961 0.004 -0.047 0.010 0.368 0.214 -0.163 0.148 0.170 -0.214 0.321 0.157 -0.123 EVA10240 1961 0.017 -0.048 -0.016 0.213 -0.171 0.363 0.125 0.310 0.146 0.147 -0.219 -0.135 EVB10040 1961 0.002 -0.043 -0.082 0.439 0.285 -0.352 0.112 0.316 0.096 -0.221 0.088 -0.183 EVB10270 1961 0.028 -0.046 0.373 -0.066 0.227 -0.213 0.093 0.298 0.122 -0.224 0.108 -0.158 EVQAD412 1961 0.050 -0.070 0.090 0.300 0.140 -0.090 0.130 0.300 0.160 -0.240 0.200 -0.110 EVQAD413 1961 -0.050 0.120 -0.200 0.270 0.160 -0.080 -0.050 0.220 0.110 0.000 -0.250 -0.190 EVOAD512 1961 -0.110 -0.020 0.070 0.460 0.290 -0.180 0.290 0.400 0.220 0.260 -0.160 -0.070 EV 513 1961 -0.040 -0.040 -0.040 0.500 -0.450 0.330 0.170 0.130 -0.210 0.350 0.080 -0.180 EVA10200 1962 -0.079 0.021 0.138 0.072 0.300 0.126 0.340 0.449 0.060 -0.038 -0.035 0.053 EVB10170 1962 -0.114 0.028 0.199 0.071 0.390 0.069 0.398 -0.099 -0.122 0.504 0.003 0.039 EVB10070 1962 -0.120 0.039 0.215 0.074 0.380 0.096 0.413 0.509 0.022 -0.096 -0.136 0.030

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cyp03 pit129.EVA EVF10005 1962 -0.114 0.082 0.261 0.065 0.380 0.129 0.423 0.534 0.070 -0.025 -0.145 0.018 EVA10340 1962 -0.102 0.031 0.153 0.399 0.024 0.059 0.353 0.481 -0.023 -0.057 -0.017 0.051 EVA10240 1962 -0.108 0.021 0.151 0.394 0.030 0.361 0.064 0.477 -0.027 -0.082 -0.032 0.050 EVB10040 0.054 0.232 1962 -0.118 0.071 0.380 0.108 0.417 0.518 0.039 -0.070 -0.139 0.026 EVB10270 1962 -0.116 0.012 0.163 0.072 0.388 0.047 0.381 0.483 -0.023 -0.116 -0.079 0.046 EVOAD412 1962 -0.120 0.040 0.080 0.060 0.360 0.040 0.330 0.420 -0.030 -0.040 0.150 0.040 EVQAD413 -0.130 1962 -0.140 -0.100 0.070 0.100 0.380 -0.010 0.380 0.430 -0.320 -0.110 0.070 -0.050 EVOAD512 0.330 0.000 0.060 1962 0.070 0.240 0.030 0.470 -0.030 0.560 -0.110 0.070 EV 513 0.290 1962 -0.110 0.110 0.060 0.380 0.150 0.430 0.550 0.020 0.100 -0.150 0.010 0.351 EVA10200 1963 0.033 0.124 0.141 0.177 -0.002 0.316 0.132 0.440 0.409 -0.004 -0.037 EVB10170 0.023 1963 0.131 0.161 -0.081 0.283 0.294 0.179 0.419 0.289 0.437 -0.025 -0.100 EVB10070 1963 0.017 0.127 0.168 -0.090 0.305 0.299 0.162 0.399 0.267 0.436 -0.037 -0.116 EVF10005 0.019 0.224 -0.096 0.418 1963 0.123 0.345 0.318 0.198 0.251 0.451 -0.039 -0.125 EVA10340 1963 0.036 0.140 0.181 -0.017 0.218 0.296 0.204 0.506 0.361 0.452 0.032 -0.044 0.222 0.182 0.349 EVA10240 1963 0.031 0.139 0.164 -0.025 0.292 0.482 0.446 0.022 -0.055 EVB10040 1963 0.017 0.125 0.188 -0.092 0.320 0.306 0.175 0.406 0.261 0.441 -0.037 -0.119 EVB10270 0.024 1963 0.135 0.144 -0.054 0.246 0.288 0.160 0.436 0.317 0.436 -0.005 -0.081 EVOAD412 1963 0.020 0.140 0.190 0.090 0.150 0.310 0.100 0.560 0.410 0.460 0.100 -0.010 EVOAD413 1963 0.010 -0.010 -0.070 0.140 0.180 0.240 0.050 0.340 0.320 0.390 -0.030 -0.090

cyp03\_pit129.EVA EVQAD512 1963 0.080 0.150 0.260 -0.080 0.260 0.300 0.430 0.580 0.380 0.480 0.020 -0.020 EV 513 1963 0.020 0.120 0.260 -0.100 0.370 0.330 0.220 0.430 0.240 0.460 -0.040 -0.130 EVA10200 1964 0.052 0.001 -0.077 -0.017 0.163 0.416 0.434 0.144 0.044 0.283 -0.016 0.005 EVB10170 1964 0.037 -0.031 -0.008 -0.095 0.220 0.418 0.474 0.086 0.012 0.305 0.006 -0.066 EVB10070 1964 0.030 -0.034 -0.010 -0.098 0.227 0.420 0.449 0.053 0.022 0.303 0.013 -0.103 EVF10005 1964 -0.025 0.018 -0.050 0.002 0.229 0.426 0.468 0.069 0.076 0.307 0.023 -0.126 EVA10340 1964 0.041 -0.026 -0.017 -0.052 0.190 0.417 0.567 0.173 -0.008 0.292 -0.006 0.038 EVA10240 1964 -0.031 -0.021 0.042 -0.073 0.195 0.416 0.540 -0.019 0.143 0.291 -0.005 0.018 EVB10040 1964 -0.031 -0.006 0.026 -0.081 0.227 0.456 0.422 0.059 0.041 0.305 0.017 -0.111 EVB10270 1964 0.041 -0.035 -0.103 -0.020 0.209 0.416 0.491 0.095 -0.021 0.295 -0.001 -0.029 EVOAD412 1964 0.030 -0.040 -0.070 -0.040 0.160 0.420 0.600 0.140 -0.070 0.240 0.000 0.080 EVOAD413 1964 0.070 -0.060 -0.050 -0.250 0.220 0.400 0.390 0.000 -0.020 -0.150 0.290 -0.030 EVQAD512 1964 0.050 0.010 0.060 0.050 0.190 0.420 0.680 0.370 0.110 0.350 -0.020 0.110 EV 513 1964 0.010 -0.020 0.010 -0.020 0.230 0.430 0.480 0.080 0.110 0.310 0.030 -0.140 EVA10200 1965 -0.043 -0.111 0.042 0.254 -0.106 0.254 0.446 0.438 0.139 0.274 0.032 -0.018 EVB10170 1965 -0.129 -0.234 -0.015 0.329 -0.216 0.546 0.218 0.437 0.072 0.283 0.087 -0.106 EVB10070 1965 -0.146 -0.240 -0.030 0.346 -0.212 0.206 0.552 0.426 0.070 0.296 0.096 -0.135 EVF10005 -0.161 -0.246 1965 -0.036 0.373 0.221 0.600 -0.254 0.441 0.070 0.311 0.105 -0.181 EVA10340 1965 -0.063 -0.168 0.033 0.297 -0.206 0.256 0.551 0.482 0.072 0.253 0.054 -0.034

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cyp03 pit129.EVA 1965 -0.073 -0.175 0.071 0.257 EVA10240 0.023 0.300 -0.192 0.242 0.537 0.468 0.058 -0.040 EVB10040 -0.032 1965 -0.151 -0.242 0.356 -0.227 0.211 0.569 0.431 0.070 0.301 0.099 -0.152 EVB10270 1965 -0.102 -0.204 0.001 0.311 -0.186 0.220 0.526 0.443 0.071 0.270 0.073 -0.067 0.060 EVOAD412 0.290 -0.100 0.250 0.530 0.060 0.240 0.020 1965 0.000 -0.040 0.500 0.010 EVOAD413 1965 -0.100 -0.220 -0.010 0.260 -0.080 0.160 0.400 0.380 0.070 0.250 0.070 0.010 -0.070 -0.260 0.290 -0.390 EVOAD512 1965 0.060 0.340 0.640 0.540 0.090 0.240 0.060 -0.040 EV 513 -0.170 -0.250 -0.040 0.390 -0.280 0.230 0.630 0.450 0.070 0.320 0.110 1965 -0.210 EVA10200 1966 -0.111 -0.125 0.251 0.025 0.162 0.493 0.299 0.071 0.124 0.153 0.089 -0.136 0.273 -0.210 EVB10170 0.544 1966 -0.164 -0.126 0.312 0.369 0.013 0.063 0.120 0.107 -0.208 0.280 -0.195 EVB10070 0.080 1966 -0.173 -0.114 0.367 0.563 0.378 0.039 0.119 0.093 -0.221 0.286 -0.235 1966 -0.177 -0.105 0.428 EVF10005 0.449 0.579 0.076 0.092 0.144 0.103 -0.196 0.490 0.361 -0.035 EVA10340 -0.148 -0.190 0.262 -0.105 0.171 0.023 0.142 0.171 1966 -0.141EVA10240 -0.152 -0.180 0.264 -0.096 0.185 0.499 0.350 -0.031 0.031 0.131 0.155 1966 -0.161 EVB10040 -0.175 -0.111 0.282 -0.210 0.397 0.569 0.396 0.052 0.084 0.128 0.097 1966 -0.212 EVB10270 -0.160 -0.152 0.269 -0.131 0.239 0.522 0.344 -0.013 0.048 0.116 0.122 1966 -0.199 0.020 0.150 0.220 EVOAD412 1966 -0.160 -0.270 0.270 0.290 0.080 0.460 0.330 -0.040 -0.100 0.220 EVOAD413 -0.160 -0.140 0.260 0.510 -0.080 0.040 0.040 0.060 1966 -0.070 0.110 -0.300 EVOAD512 1966 -0.110 -0.160 0.240 -0.560 0.180 0.470 0.450 -0.060 -0.020 0.190 0.210 -0.070 EV 513 1966 -0.180 -0.100 0.290 -0.260 0.500 0.590 0.460 0.100 0.100 0.160 0.110 -0.180

cyp03\_pit129.EVA EVA10200 1967 0.095 0.053 0.218 0.007 -0.106 0.407 0.212 0.437 0.146 0.147 0.066 -0.142 EVB10170 1967 0.094 0.044 0.266 -0.027 -0.241 0.436 0.245 0.465 0.151 0.116 0.105 -0.295 EVB10070 1967 0.087 0.276 -0.024 -0.279 0.040 0.441 0.240 0.456 0.156 0.205 0.110 -0.313 EVF10005 1967 0.089 0.046 0.303 -0.009 -0.316 0.514 0.246 0.477 0.177 0.251 0.122 -0.311 EVA10340 1967 0.113 0.064 0.241 -0.004 -0.107 0.474 0.238 0.489 0.009 0.031 0.106 -0.172 EVA10240 1967 0.107 0.057 0.240 -0.009 -0.126 0.449 0.235 0.476 0.031 0.053 0.104 -0.194 EVB10040 1967 0.087 0.042 0.286 -0.019 -0.292 0.467 0.242 0.464 0.164 0.222 0.114 -0.313 EVB10270 1967 0.097 0.047 0.246 -0.022 -0.184 0.417 0.235 0.459 0.081 0.106 0.101 -0.252 EVOAD412 1967 0.110 0.070 0.210 0.050 0.020 0.490 0.180 0.460 -0.020 0.030 0.120 -0.010 EVQAD413 1967 0.080 0.020 0.190 -0.070 -0.160 0.210 0.220 0.390 0.090 0.060 0.070 -0.320 EVOAD512 1967 0.150 0.090 0.280 -0.030 -0.130 0.590 0.320 0.590 -0.090 -0.100 0.100 -0.220 EV 513 1967 0.090 0.320 0.050 0.000 -0.340 0.560 0.250 0.490 0.190 0.280 0.130 -0.310 EVA10200 -0.166 1968 0.055 -0.028 0.045 -0.026 0.086 0.236 0.389 -0.008 0.195 -0.190 0.035 EVB10170 -0.270 1968 0.028 0.049 -0.104 -0.065 0.052 0.272 0.389 -0.173 0.120 -0.246 0.001 EVB10070 1968 -0.302 0.024 0.072 -0.092 -0.073 0.062 0.266 0.373 -0.212 0.103 -0.256 -0.010 EVF10005 -0.350 1968 -0.003 0.120 -0.122 0.015 0.104 0.275 0.389 -0.242 0.113 -0.265 -0.016 EVA10340 1968 -0.216 -0.059 0.016 0.066 -0.037 0.029 0.270 0.440 0.207 -0.065 -0.207 0.037 EVA10240 1968 -0.220 0.024 -0.052 0.049 -0.058 0.022 0.265 0.422 -0.085 0.187 -0.213 0.030 EVB10040 1968 -0.319 0.014 0.089 -0.103 -0.041 0.077 0.269 0.379 -0.223 0.107 -0.259 -0.012

cyp03 pit129.EVA

					сур	03_b1£15	9.EVA					
EVB10270 0.014	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170
0.060												
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230
0.010	1000	0 100	0.010	0.000	0 020	0 170	0 110	0.350	0 550	0.000	0 220	0 240
EVQAD512 0.050	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270
-0.020												
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071
-0.144 EVB10170	1969	0.003	0 021	0 002	0.000	0 104	0 447	0 540	0 510	0.250	0.000	0 305
-0.242	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252
-0.238												
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306
-0.208	4050	0.040				0.040	0.450	2 500	0 545		0.043	
EVA10340 -0.191	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060
-0.204	2303	01027	0.021	0.005	0.101	0103		0.370	0.525	01250	0.000	0.000
EVB10040	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271
-0.227												
EVB10270 -0.232	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129
EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130
-0.090												
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080
-0.330												
EVQAD512 -0.230	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340
-0.190	2505	0.200	0.000	0.070	0.010	0.11.0	0.300	0.500	0.520	0.2/0	0.050	0.5.0
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043
0.040												
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059
0.017												

cyp03\_pit129.EVA 1970 EVB10070 0.106 -0.150 0.086 0.292 0.016 0.256 0.244 0.331 0.184 -0.246 0.046 -0.003 EVF10005 1970 -0.144 0.115 0.107 0.037 0.271 0.322 0.217 0.398 0.163 -0.273 0.055 -0.007 EVA10340 1970 0.072 -0.091 0.107 0.062 0.303 0.259 0.437 0.405 0.078 -0.171 0.112 0.068 EVA10240 1970 0.075 -0.098 0.099 0.049 0.260 0.289 0.409 0.375 0.102 -0.174 0.098 0.055 EVB10040 1970 0.109 -0.148 0.094 0.024 0.303 0.261 0.234 0.355 0.177 -0.256 0.049 -0.005 EVB10270 1970 0.087 -0.126 0.085 0.025 0.263 0.268 0.342 0.328 0.149 -0.198 0.071 0.030 EVQAD412 1970 0.030 0.060 0.160 0.110 0.300 0.290 0.510 0.450 0.010 -0.050 0.140 0.070 EVOAD413 1970 0.080 -0.170 0.020 -0.050 0.210 0.200 0.330 0.120 0.250 -0.160 0.020 0.010 EVQAD512 1970 0.100 -0.210 0.090 0.080 0.210 0.390 0.520 0.520 0.020 -0.280 0.160 0.140 ΕV 513 1970 0.120 -0.140 0.120 0.050 0.340 0.280 0.200 0.440 0.150 -0.290 0.060 -0.010 EVA10200 1971 0.101 0.000 0.229 0.214 0.110 0.489 0.020 0.199 0.171 0.260 0.004 -0.278 EVB10170 1971 0.126 -0.030 0.227 0.240 0.157 0.492 -0.022 0.145 0.226 0.081 -0.026 -0.285 EVB10070 1971 0.123 -0.043 0.216 0.233 0.480 0.163 -0.022 0.127 0.224 0.100 -0.030 -0.261 EVF10005 1971 0.139 -0.041 0.231 0.243 0.186 0.474 0.047 0.129 0.209 0.112 -0.030 -0.236 EVA10340 1971 0.130 0.010 0.283 0.278 0.149 0.526 0.044 0.187 0.209 0.093 0.026 -0.388 EVA10240 1971 0.123 0.000 0.268 0.267 0.519 0.145 0.015 0.174 0.215 0.096 0.019 -0.374 EVB10040 1971 0.129 -0.043 0.221 0.237 0.171 0.478 0.003 0.127 0.219 0.104 -0.030 -0.252 EVB10270 1971 0.117 -0.021 0.238 0.247 0.145 0.503 -0.029 0.152 0.225 0.092 -0.005 -0.330 EVQAD412 1971 0.100 0.020 0.320 0.310 0.130 0.540 0.100 0.170 0.180 0.220 0.120 -0.510

cyp03 pit129.EVA 0.070 0.500 EVQAD413 1971 -0.050 0.170 0.200 0.090 -0.240 0.120 0.270 0.060 -0.030 -0.340 EVOAD512 1971 0.200 0.060 0.330 0.300 0.190 0.550 0.140 -0.060 0.280 0.210 -0.030 -0.340 EV 513 0.150 -0.040 0.240 0.200 0.470 1971 0.250 0.090 0.130 0.200 0.120 -0.030 -0.220 EVA10200 1972 -0.038 0.171 0.202 0.206 0.210 0.246 0.299 0.440 0.114 -0.140 -0.176 -0.066 EVB10170 1972 -0.156 0.211 0.207 0.274 0.158 0.225 0.268 0.446 0.057 -0.245 -0.225 -0.136 -0.257 -0.240 EVB10070 1972 -0.182 0.210 0.187 0.207 0.276 0.138 0.240 0.446 0.053 -0.147 0.183 0.291 0.108 -0.259 EVF10005 1972 -0.230 0.216 0.191 0.240 0.455 0.069 -0.228 -0.143 0.379 EVA10340 1972 -0.078 0.208 0.254 0.265 0.271 0.213 -0.228 -0.155 0.452 0.067 -0.082 EVA10240 -0.235 -0.173 1972 -0.082 0.206 0.241 0.258 0.268 0.207 0.355 0.449 0.059 -0.094 0.185 0.201 0.281 0.240 0.059 -0.257 -0.236 EVB10040 1972 -0.199 0.212 0.127 0.449 -0.145 EVB10270 1972 -0.111 0.205 0.218 0.241 0.266 0.186 0.301 0.445 0.050 -0.244 -0.210 -0.120 EVQAD412 0.010 0.260 0.250 -0.260 -0.110 1972 0.180 0.240 0.270 0.460 0.460 0.040 -0.030 EVOAD413 1972 -0.030 0.190 0.200 0.260 0.230 0.230 0.240 0.420 0.000 -0.250 -0.280 -0.160 EVOAD512 1972 -0.140 0.250 0.340 0.300 0.300 0.210 0.430 0.460 0.140 -0.160 -0.100 -0.070 0.180 0.080 0.300 0.090 0.460 -0.260 -0.220 EV 513 1972 -0.260 0.220 0.180 0.240 -0.140 EVA10200 1973 -0.062 0.045 -0.047 -0.084 0.218 0.039 0.216 0.433 -0.130 -0.054 -0.005 0.015 EVB10170 1973 -0.129 0.062 -0.081 -0.061 0.332 -0.074 0.159 0.460 -0.260 -0.248 -0.001 0.016 0.349 -0.074 0.459 -0.251 -0.235 EVB10070 1973 -0.140 0.069 -0.081 -0.036 0.117 -0.014 0.007 EVF10005 1973 -0.152 0.094 -0.038 0.041 0.380 -0.065 0.094 0.484 -0.232 -0.189 0.019 0.009

cyp03 pit129.EVA EVA10340 1973 -0.097 0.051 -0.051 -0.090 0.275 -0.056 0.282 0.470 -0.274 -0.153 0.078 0.023 EVA10240 1973 -0.101 0.047 -0.069 -0.100 0.278 -0.060 0.258 -0.274 -0.171 0.460 0.053 0.018 EVB10040 1973 -0.144 0.078 -0.066 -0.008 0.360 -0.071 0.109 0.468 -0.244 -0.218 -0.002 0.007 EVB10270 -0.114 1973 0.048 -0.091 -0.100 0.300 -0.070 0.201 0.450 -0.271 -0.221 0.009 0.012 EVQAD412 1973 -0.070 0.030 -0.050 -0.110 0.200 -0.020 0.340 0.450 -0.270 0.090 0.130 -0.020 EVQAD413 1973 -0.100 -0.010 -0.220 -0.280 0.250 -0.100 0.190 0.380 -0.310 -0.380 -0.120 0.000 EVOAD512 1973 -0.100 0.090 0.040 -0.020 0.330 -0.070 0.360 0.540 -0.280 -0.310 0.160 0.100 EV 513 1973 -0.160 0.110 -0.010 0.090 0.400 -0.060 -0.220 0.080 0.500 -0.160 0.040 0.010 EVA10200 1974 -0.139 0.142 0.227 0.143 0.128 0.137 0.370 0.091 -0.208 0.076 -0.124 0.024 EVB10170 1974 -0.233 0.159 0.265 0.207 0.134 0.070 0.387 -0.008 -0.331 0.005 -0.119 0.061 EVB10070 1974 -0.263 0.150 0.266 0.197 0.136 0.057 0.356 -0.017 -0.343 0.000 -0.121 0.066 1974 -0.279 EVF10005 0.281 0.150 0.187 0.151 0.139 0.365 -0.019 -0.341 -0.006 -0.096 0.087 EVA10340 1974 -0.152 0.178 0.260 0.185 0.163 0.490 0.180 0.022 -0.330 0.020 -0.103 0.027 1974 -0.169 EVA10240 0.172 0.256 0.187 0.156 0.137 0.462 0.016 -0.336 0.018 -0.113 0.026 EVB10040 1974 -0.269 0.150 0.271 0.193 0.141 0.087 0.359 -0.017 -0.002 -0.112 -0.343 0.074 EVB10270 1974 -0.206 0.162 0.255 0.196 0.141 0.068 0.410 0.001 -0.340 0.012 -0.126 0.037 EVQAD412 1974 -0.130 0.170 0.230 0.090 0.220 0.240 0.520 0.040 -0.410 0.030 -0.110 -0.050 EVOAD413 1974 -0.210 0.150 0.220 0.230 0.090 -0.200 0.330 -0.010 -0.350 0.020 -0.200 0.000 EVQAD512 1974 -0.080 0.220 0.310 0.280 0.140 0.350 0.610 0.040 -0.210 0.020 -0.040 0.110

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cyp03 pit129.EVA ΕV 513 1974 -0.290 0.150 0.290 0.180 0.160 0.190 0.370 -0.020 -0.340 -0.010 -0.080 0.100 EVA10200 1975 0.074 0.033 0.073 -0.021 0.120 0.171 0.303 0.357 0.316 0.286 -0.003 -0.022 EVB10170 -0.051 0.068 0.080 1975 0.103 0.009 0.110 0.354 0.342 0.299 0.218 -0.001 -0.037 EVB10070 1975 0.054 -0.073 0.070 0.097 0.009 0.094 0.194 0.346 0.343 0.303 -0.023 -0.041 EVF10005 1975 0.039 -0.077 0.070 0.087 0.034 0.079 0.373 0.359 0.319 0.173 -0.021 -0.022 EVA10340 1975 0.087 0.056 0.077 0.133 0.001 0.130 0.379 0.357 0.300 0.304 0.070 -0.020 EVA10240 1975 0.084 0.037 0.073 0.131 -0.006 0.126 0.364 0.351 0.296 0.291 0.052 -0.030 EVB10040 0.093 0.018 1975 0.049 -0.075 0.070 0.089 0.356 0.349 0.309 0.187 -0.023 -0.034 EVB10270 1975 0.076 -0.014 0.072 -0.008 0.117 0.346 0.293 0.253 0.119 0.340 0.016 -0.042 EVQAD412 1975 0.060 0.170 0.010 0.180 -0.050 0.100 0.350 0.300 0.380 0.370 0.090 -0.030 EVOAD413 1975 0.100 -0.060 0.070 0.130 -0.070 0.140 0.260 0.290 0.250 0.260 -0.030 -0.100 EVOAD512 1975 0.140 0.050 0.170 0.100 0.090 0.190 0.490 0.380 0.320 0.300 0.150 0.040 EV 513 -0.080 0.070 1975 0.030 0.080 0.050 0.070 0.390 0.370 0.330 0.160 -0.020 -0.010 EVA10200 1976 0.091 0.098 -0.118 0.059 -0.031 0.132 0.197 0.429 0.044 0.011 0.042 -0.045 0.098 EVB10170 1976 0.018 0.087 -0.194 -0.040 -0.034 0.160 0.385 -0.054 -0.030 0.071 -0.132 EVB10070 -0.006 0.079 -0.217 0.127 -0.040 -0.054 0.141 0.364 -0.051 -0.018 0.060 1976 -0.147 EVF10005 -0.040 -0.045 1976 -0.021 0.098 -0.207 0.129 0.110 0.337 -0.032 0.012 0.066 -0.143 0.119 EVA10340 0.137 1976 -0.127 0.001 -0.044 0.095 0.201 0.445 -0.043 -0.060 0.106 -0.049 EVA10240 1976 0.102 0.122 -0.148 0.023 -0.043 0.070 0.198 0.438 -0.049 -0.061 0.095 -0.066

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cyp03\_pit129.EVA EVB10040 1976 -0.011 0.086 -0.213 0.127 -0.040 -0.051 0.130 0.354 -0.044 -0.007 0.062 -0.145 EVB10270 1976 0.057 0.095 -0.184 0.071 -0.042 0.008 0.183 -0.057 0.414 -0.052 0.076 -0.106 EVQAD412 1976 0.220 0.180 -0.050 -0.130 -0.050 0.260 0.220 0.490 -0.020 -0.090 0.110 0.040 EVQAD413 1976 0.040 0.020 -0.250 0.120 -0.040 -0.080 0.240 0.450 -0.110 -0.110 0.040 -0.160 EVOAD512 1976 0.110 0.170 -0.010 -0.070 -0.040 0.060 0.200 0.440 -0.040 -0.030 0.160 -0.050 EV 513 1976 -0.030 0.110 -0.200 0.130 -0.040 -0.040 0.090 0.320 -0.020 0.030 0.070 -0.140 EVA10200 1977 -0.077 0.055 0.033 0.174 0.250 0.284 0.350 0.250 0.258 0.286 -0.167 0.093 EVB10170 1977 -0.109 0.061 0.009 0.293 0.338 0.232 0.360 0.167 0.273 -0.176 0.188 0.066 1977 -0.114 EVB10070 0.066 0.009 0.323 0.340 0.233 0.333 0.141 0.173 0.273 -0.174 0.053 EVF10005 1977 -0.105 0.087 0.040 0.346 0.231 0.346 0.331 0.104 0.183 0.277 -0.147 0.057 EVA10340 1977 -0.101 0.060 0.032 0.175 0.241 0.317 0.444 0.223 0.258 0.284 -0.164 0.124 EVA10240 1977 -0.106 0.055 0.020 0.193 0.318 0.241 0.424 0.217 0.241 0.281 -0.173 0.111 EVB10040 1977 -0.111 0.074 0.020 0.331 0.342 0.233 0.333 0.128 0.275 -0.164 0.177 0.055 EVB10270 1977 -0.113 0.052 0.003 0.326 0.245 0.238 0.382 0.196 0.205 0.276 -0.184 0.082 EVQAD412 1977 -0.120 0.060 0.040 0.050 0.270 0.270 0.240 0.470 0.310 0.300 -0.160 0.170 EVOAD413 1977 -0.140 0.000 -0.090 0.250 0.320 0.240 0.340 0.260 0.140 0.260 -0.260 0.040 EVOAD512 1977 -0.050 0.080 0.090 0.200 0.210 0.360 0.530 0.240 0.300 0.280 -0.120 0.150 EV 513 1977 -0.100 0.100 0.060 0.360 0.350 0.230 0.330 0.080 0.280 -0.130 0.190 0.060 EVA10200 1978 -0.137 -0.018 0.058 0.214 0.095 0.430 0.487 0.488 0.330 -0.371 0.299 -0.078

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cvp03 pit129.EVA EVB10170 1978 -0.242 -0.015 0.058 0.275 0.135 0.446 0.494 0.456 0.216 0.281 -0.414 -0.146 EVB10070 1978 -0.263 -0.004 0.059 0.276 0.137 0.453 0.481 0.447 0.207 0.264 -0.422 -0.167 EVF10005 -0.273 1978 0.011 0.084 0.297 0.139 0.463 0.456 0.431 0.197 0.255 -0.359 -0.169 EVA10340 1978 -0.168 0.278 0.115 0.430 0.553 -0.049 0.059 0.501 0.269 0.359 -0.355 -0.078 EVA10240 1978 -0.182 -0.045 0.051 0.271 0.118 0.431 0.549 0.497 0.263 0.346 -0.385 -0.094 0.001 EVB10040 1978 -0.267 0.068 0.284 0.137 0.457 0.472 0.441 0.203 0.261 -0.400 -0.167 EVB10270 1978 -0.216 -0.031 0.046 0.265 0.126 0.437 0.526 0.480 0.240 0.310 -0.426 -0.127 EVQAD412 1978 -0.110 -0.080 0.030 0.260 0.080 0.420 0.640 0.570 0.350 0.440 -0.360 -0.050 EVOAD413 1978 -0.230 -0.050 -0.020 0.210 0.130 0.420 0.560 0.500 0.240 0.290 -0.620 -0.160 EVOAD512 0.350 1978 -0.150 -0.040 0.130 0.330 0.140 0.430 0.490 0.450 0.220 -0.190 -0.020 EV 513 1978 -0.280 0.020 0.100 0.310 0.140 0.470 0.440 0.420 0.190 0.250 -0.320 -0.170 0.283 EVA10200 1979 -0.142 -0.081 0.012 0.043 -0.046 0.022 0.267 0.140 0.141 -0.007 -0.061 0.261 EVB10170 1979 -0.341 -0.140 -0.054 0.046 0.003 -0.053 0.286 0.022 0.128 -0.014 -0.099 EVB10070 -0.392 -0.147 -0.061 0.025 0.239 -0.078 0.123 1979 0.045 0.302 0.014 -0.046 -0.100 EVF10005 -0.446 -0.137 -0.024 0.091 0.065 0.258 -0.042 0.350 0.005 0.146 -0.061 1979 -0.100 EVA10340 1979 -0.166 -0.099 0.023 0.089 -0.062 0.323 0.066 0.250 0.069 0.140 0.068 -0.097 0.301 EVA10240 -0.190 -0.109 -0.058 1979 0.000 0.070 0.031 0.245 0.063 0.129 0.050 -0.098 EVB10040 1979 -0.411 -0.143 -0.048 0.062 0.040 0.246 -0.065 0.319 0.011 0.131 -0.051 -0.100 -0.034 EVB10270 1979 -0.264 -0.131 -0.044 0.040 -0.034 0.265 0.253 0.043 0.117 0.011 -0.099

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cyp03 pit129.EVA EVQAD412 1979 0.000 -0.060 0.100 0.120 -0.130 0.300 0.130 0.200 0.140 0.100 0.080 -0.100 EVOAD413 1979 -0.220 -0.180 -0.180 -0.100 -0.100 0.180 -0.190 0.150 0.040 0.050 0.000 -0.100 EVQAD512 1979 -0.200 -0.080 0.070 0.160 -0.020 0.470 0.190 0.320 0.030 0.240 0.160 -0.090 EV 513 1979 -0.130 -0.480 0.000 0.120 0.090 0.270 -0.020 0.380 0.000 0.160 -0.070 -0.100 EVA10200 1980 -0.074 0.115 0.112 0.100 0.034 0.282 0.582 0.589 0.115 0.167 0.003 0.076 EVB10170 1980 -0.077 0.160 0.067 0.111 0.062 0.300 0.654 0.597 0.111 0.152 -0.005 0.084 EVB10070 1980 -0.074 0.162 0.044 0.090 0.299 0.034 0.657 0.590 0.128 0.149 -0.013 0.090 EVF10005 1980 -0.047 0.192 0.035 0.078 0.013 0.330 0.659 0.584 0.174 -0.017 0.197 0.102 EVA10340 1980 -0.091 0.155 0.138 0.148 0.087 0.293 0.669 0.636 0.081 0.166 0.033 0.074 EVA10240 1980 -0.097 0.147 0.123 0.139 0.079 0.283 0.668 0.631 0.070 0.156 0.027 0.074 EVB10040 1980 -0.064 0.173 0.041 0.086 0.310 0.027 0.657 0.588 0.153 0.158 -0.015 0.094 EVB10270 1980 0.143 -0.096 0.089 0.121 0.067 0.279 0.661 0.614 0.143 0.071 0.010 0.076 EVOAD412 1980 -0.140 0.120 0.170 0.120 0.000 0.220 0.720 0.690 0.020 0.080 0.150 0.070 EVOAD413 1980 -0.160 0.070 0.070 0.130 0.100 0.200 0.650 0.610 -0.090 0.070 0.000 0.050 EVQAD512 1980 -0.010 0.230 0.190 0.230 0.230 0.420 0.620 0.610 0.020 0.200 0.240 0.080 EV 513 1980 -0.030 0.210 0.030 0.070 0.000 0.350 0.660 0.580 0.240 0.190 -0.020 0.110 EVA10200 1981 0.120 0.027 0.116 0.197 -0.223 0.246 0.247 0.337 0.317 -0.166 0.080 0.168 EVB10170 1981 0.099 -0.018 0.078 0.229 -0.308 0.127 0.256 0.271 0.236 -0.329 0.054 0.180 EVB10070 1981 0.094 -0.034 0.070 0.224 -0.314 0.117 0.245 0.243 0.217 -0.322 0.034 0.173

cyp03 pit129.EVA 1981 EVF10005 0.085 -0.025 0.076 0.215 -0.281 0.107 0.291 0.253 0.201 -0.266 0.019 0.171 EVA10340 1981 0.124 0.054 0.123 0.237 -0.239 0.198 0.332 0.385 0.307 -0.256 0.143 0.202 0.296 EVA10240 1981 0.121 0.037 0.113 0.236 -0.260 0.190 0.304 0.357 -0.278 0.129 0.197 0.091 0.072 EVB10040 1981 -0.031 0.221 -0.302 0.113 0.262 0.247 0.211 -0.302 0.029 0.173 EVB10270 1981 0.000 0.090 0.234 -0.299 0.159 0.259 0.265 0.111 0.300 -0.321 0.090 0.187 EVQAD412 1981 0.160 0.110 0.170 0.230 -0.170 0.320 0.370 0.380 -0.120 0.240 0.460 0.210 EVOAD413 0.250 1981 0.120 -0.060 0.050 -0.420 0.150 0.100 0.210 0.270 -0.500 0.080 0.180 0.250 -0.200 0.440 0.290 -0.280 0.120 EVOAD512 1981 0.100 0.090 0.130 0.120 0.460 0.220 -0.260 EV 513 1981 0.080 -0.020 0.080 0.210 0.100 0.320 0.260 0.190 -0.230 0.010 0.170 0.032 EVA10200 1982 -0.033 -0.018 0.158 0.057 0.071 0.068 0.311 0.341 0.368 -0.335 -0.348 -0.003 0.368 0.343 -0.062 -0.393 EVB10170 1982 -0.076 -0.050 0.148 0.001 -0.050 0.371 -0.448 -0.020 EVB10070 -0.011 0.369 0.330 -0.077 -0.408 -0.084 -0.057 0.143 -0.044 0.369 1982 -0.491 0.008 -0.011 0.388 0.336 -0.073 -0.378 EVF10005 -0.069 -0.047 0.141 -0.026 0.394 1982 -0.466 0.103 -0.007 0.358 -0.004 -0.334 0.390 EVA10340 1982 -0.034 -0.017 0.162 0.090 0.362 -0.330 0.159 0.073 0.083 -0.019 0.377 -0.018 EVA10240 1982 -0.047 -0.027 0.354 0.354 -0.356 -0.369 EVB10040 -0.079 -0.053 0.143 -0.022 -0.004 -0.032 0.376 0.378 0.332 -0.075 -0.397 1982 -0.482 -0.070 0.153 0.032 0.031 0.354 EVB10270 1982 -0.045 -0.045 0.352 0.353 -0.047 -0.391 -0.435 EVQAD412 1982 -0.010 0.000 0.170 0.170 0.280 0.080 0.320 0.290 0.410 0.030 -0.330 -0.360 EVQAD413 -0.090 0.150 0.000 -0.070 -0.150 0.310 0.290 0.310 -0.090 -0.500 1982 -0.130 -0.570

cyp03\_pit129.EVA EVQAD512 1982 0.010 0.020 0.170 0.100 0.030 -0.030 0.420 0.480 0.440 0.040 -0.220 -0.080 EΥ 513 1982 -0.060 -0.040 0.140 -0.030 0.020 0.010 0.400 0.410 0.340 -0.070 -0.360 -0.450 EVA10200 1983 0.067 -0.032 0.121 0.186 -0.057 0.143 0.294 0.345 0.375 0.158 -0.077 -0.145 EVB10170 1983 0.066 -0.166 0.114 0.248 -0.103 0.037 0.328 0.285 0.146 -0.131 0.342 -0.237 EVB10070 1983 0.056 -0.196 0.117 0.246 -0.113 0.036 0.325 0.277 0.333 0.146 -0.156 -0.266 EVF10005 0.065 -0.223 1983 0.119 0.279 -0.129 0.051 0.383 0.254 0.331 0.155 -0.165 -0.275 EVA10340 1983 0.093 -0.039 0.105 0.264 -0.076 0.081 0.386 0.312 0.377 0.132 -0.036 -0.150 EVA10240 1983 0.083 -0.057 0.106 0.251 -0.078 0.072 0.360 0.313 0.370 0.131 -0.054 -0.169 EVB10040 1983 0.059 -0.206 0.117 0.258 -0.119 0.346 0.041 0.269 0.333 0.149 -0.159 -0.269 EVB10270 1983 0.067 -0.112 0.110 0.236 -0.088 0.049 0.321 0.305 0.135 0.354 -0.099 -0.211 EVOAD412 1983 0.080 0.110 0.100 0.240 -0.050 0.160 0.420 0.360 0.410 0.090 0.040 -0.120 EVOAD413 1983 0.030 -0.110 0.110 0.140 -0.060 -0.010 0.140 0.350 0.340 0.120 -0.130 -0.240 EVQAD512 0.160 -0.090 1983 0.100 0.360 -0.090 0.050 0.490 0.260 0.380 -0.010 0.180 -0.070 EV 513 1983 0.070 -0.240 0.120 0.300 -0.1400.060 0.420 0.240 0.330 0.160 -0.170 -0.280 EVA10200 1984 -0.005 -0.045 -0.010 0.207 0.062 0.397 0.223 0.327 0.193 -0.424 -0.068 -0.034 EVB10170 1984 -0.022 -0.170 -0.056 0.281 0.111 0.374 0.253 0.280 0.145 -0.660 -0.163 -0.049 EVB10070 1984 -0.020 -0.197 -0.048 0.285 0.115 0.373 0.238 0.262 -0.707 0.125 -0.196 -0.060 EVF10005 1984 -0.014 -0.193 0.006 0.331 0.377 0.173 0.292 0.294 0.165 -0.684 -0.205 -0.048 EVA10340 1984 -0.027 -0.026 -0.019 0.289 0.131 0.395 0.327 0.372 0.224 -0.484 -0.011 -0.023

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cyp03_pit129.EVA												
EVA10240 -0.035	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040
EVB10040 -0.056	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199
EVB10270 -0.051	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110
EVQAD412 -0.050	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140
EVQAD413 -0.100	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170
EVQAD512 0.070	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010
EV 513 -0.040	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210
EVA10200 -0.031	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221
EVB10170 -0.067	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337
EVB10070 -0.060	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347
EVF10005 -0.048	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343
EVA10340 -0.066	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245
EVA10240 -0.067	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260
EVB10040 -0.056	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345
EVB10270 -0.069	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303
EVQAD412 -0.040	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100
EVQAD413 -0.100	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360
EVQAD512 -0.090	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310
EV 513 -0.040	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340

cyp03\_pit129.EVA EVA10200 1986 0.172 0.043 0.230 0.012 -0.076 0.055 0.403 0.429 0.130 -0.025 -0.234 -0.096 EVB10170 1986 0.194 0.058 -0.115 -0.054 0.280 -0.132 0.480 -0.015 -0.138 0.370 -0.364 -0.208 EVB10070 1986 0.190 0.063 0.285 -0.098 -0.056 -0.195 0.479 0.351 -0.028 -0.156 -0.223 EVF10005 1986 0.184 0.061 0.325 -0.056 -0.071 -0.259 0.504 0.332 0.020 -0.177 -0.391 -0.227 EVA10340 0.195 1986 0.023 0.282 -0.109 -0.014 0.025 0.486 0.446 0.122 -0.097 -0.218 -0.123 EVA10240 1986 0.271 -0.115 0.195 0.030 0.002 -0.014 0.477 0.436 0.087 -0.102 -0.247 -0.138 EVB10040 1986 0.188 0.063 0.300 -0.083 -0.218 -0.061 0.488 0.344 -0.011 -0.164 -0.393 -0.225 EVB10270 1986 0.195 -0.124 0.047 0.263 -0.029 -0.065 0.469 0.403 -0.119 0.013 -0.317 -0.177 EVQAD412 1986 0.180 -0.020 0.260 -0.050 0.090 0.090 0.460 0.530 0.290 -0.080 -0.070 -0.020 EVOAD413 1986 0.070 0.210 -0.230 0.160 -0.010 0.010 0.400 0.410 -0.180 -0.090 -0.400 -0.210 EVQAD512 1986 0.210 0.030 0.360 -0.140 -0.120 0.100 0.560 0.420 0.140 -0.080 -0.210 -0.150 EV 513 1986 0.180 0.060 -0.030 0.350 -0.300 -0.080 0.520 0.320 0.050 -0.190 -0.390 -0.230 EVA10200 1987 0.030 -0.120 0.244 0.312 0.120 0.034 0.231 0.442 0.181 0.112 -0.357 -0.220 EVB10170 1987 -0.283 0.027 0.362 0.393 0.066 0.228 0.045 0.434 0.133 0.065 -0.538 -0.352 EVB10070 1987 0.026 -0.316 0.389 0.390 0.074 0.038 0.213 0.417 0.127 0.053 -0.591 -0.377 EVF10005 1987 0.047 -0.337 0.408 0.402 0.065 0.008 0.229 0.413 0.076 -0.572 0.129 -0.367 EVA10340 1987 0.038 -0.134 0.237 0.402 0.015 0.029 0.289 0.482 0.138 0.115 -0.305 -0.240 EVA10240 1987 0.030 -0.158 0.256 0.395 0.027 0.037 0.271 0.471 0.134 0.097 -0.359 -0.266 EVB10040 1987 0.034 -0.324 0.396 0.394 0.071 0.027 0.219 0.415 0.127 0.061 -0.584 -0.373

cyp03 pit129.EVA 1987 0.130 0.068 -0.475 EVB10270 0.020 -0.225 0.312 0.388 0.052 0.049 0.237 0.447 -0.322 EVQAD412 0.090 1987 0.030 0.030 0.380 -0.040 -0.010 0.310 0.490 0.110 0.120 - 0.120-0.150 EVOAD413 1987 -0.040 -0.250 0.330 0.350 0.100 0.130 0.160 0.430 0.120 -0.020 -0.650 -0.410 EVOAD512 1987 0.090 -0.170 0.280 0.010 0.030 0.370 0.540 0.460 0.190 0.210 -0.200 -0.190 513 0.410 EV 1987 0.060 -0.350 0.420 0.060 -0.010 0.240 0.410 0.130 0.090 -0.560 -0.360 EVA10200 0.147 1988 0.035 0.044 0.191 0.328 0.446 0.157 0.233 0.305 -0.009 -0.335 -0.085 EVB10170 1988 0.197 0.029 0.031 0.247 0.424 0.445 0.240 0.203 0.312 -0.075 -0.353 -0.172 EVB10070 1988 0.199 0.020 0.027 0.249 0.433 0.446 0.252 0.166 0.323 -0.087 -0.352 -0.190 0.339 -0.083 -0.277 EVF10005 0.020 0.029 1988 0.218 0.268 0.449 0.455 0.306 0.193 -0.190 EVA10340 0.181 0.047 0.028 0.407 0.457 0.191 0.274 -0.055 1988 0.243 0.305 -0.314 -0.094 0.041 0.025 0.184 0.278 EVA10240 0.177 0.407 0.453 1988 0.238 0.269 -0.064 -0.342 -0.111 EVB10040 1988 0.206 0.020 0.027 0.256 0.439 0.449 0.271 0.176 0.329 -0.085 -0.325 -0.190 0.236 EVB10270 1988 0.181 0.032 0.026 0.413 0.447 0.195 0.211 0.293 -0.076 -0.376 -0.148 EVOAD412 1988 0.130 0.030 -0.010 0.220 0.400 0.480 0.070 0.270 0.230 -0.090 -0.330 -0.030 -0.100 EVOAD413 1988 0.140 0.020 0.020 0.190 0.380 0.420 0.080 0.080 0.270 -0.590 -0.190 0.450 0.350 0.300 0.030 -0.150 EVOAD512 1988 0.250 0.100 0.080 0.290 0.410 0.540 -0.070 EV 513 1988 0.230 0.020 0.030 0.280 0.460 0.460 0.340 0.210 0.350 -0.080 -0.230 -0.190 EVA10200 -0.007 1989 -0.064 -0.002 0.230 -0.092 0.053 0.048 0.274 0.284 0.217 0.139 0.109 EVB10170 1989 -0.137 -0.096 -0.119 0.057 0.303 -0.087 -0.250 0.233 0.274 0.175 0.167 0.087

cyp03\_pit129.EVA EVB10070 1989 -0.163 -0.110 -0.153 0.309 -0.064 -0.325 0.042 0.216 0.273 0.167 0.154 0.070 EVF10005 1989 -0.186 -0.104 -0.163 0.346 -0.031 -0.371 0.084 0.249 0.283 0.145 0.169 0.058 EVA10340 1989 -0.076 -0.002 0.010 0.305 -0.135 0.052 0.094 0.313 0.267 0.212 0.213 0.136 EVA10240 1989 -0.086 -0.020 -0.015 0.295 -0.131 0.001 0.070 0.286 0.264 0.204 0.205 0.127 EVB10040 -0.171 -0.108 1989 -0.157 0.322 -0.052 -0.342 0.057 0.228 0.277 0.167 0.151 0.066 EVB10270 1989 -0.113 -0.065 -0.076 0.287 -0.113 -0.135 0.042 0.240 0.264 0.185 0.184 0.105 EVQAD412 1989 -0.060 0.120 0.110 0.290 -0.150 0.340 0.030 0.340 0.230 0.240 0.250 0.160 EVQAD413 1989 -0.090 -0.130 -0.120 0.190 -0.170 -0.180 -0.090 0.110 0.240 0.160 0.180 0.110 EVOAD512 1989 -0.030 -0.030 0.050 0.370 -0.150 0.040 0.290 0.430 0.320 0.220 0.230 0.160 EV 513 1989 -0.200 -0.100 -0.170 0.370 -0.010 -0.400 0.110 0.270 0.170 0.290 0.140 0.050 EVA10200 1990 -0.218 0.016 -0.122 -0.104 0.090 0.334 0.170 0.371 -0.042 0.109 -0.175 -0.100 EVB10170 1990 -0.383 -0.015 -0.146 0.156 -0.137 0.326 0.187 0.355 -0.146 0.059 -0.206 -0.123 EVB10070 1990 -0.393 -0.018 -0.129 0.159 -0.144 0.323 0.173 0.337 -0.165 -0.227 0.056 -0.121 EVF10005 1990 -0.409 0.018 -0.068 0.196 0.346 -0.123 0.183 0.321 0.065 -0.125 -0.229 -0.084 EVA10340 1990 -0.311 0.041 -0.167 0.140 -0.097 0.346 0.210 \ 0.383 -0.049 0.051 -0.154 -0.109 EVA10240 1990 -0.318 -0.176 0.023 0.131 -0.111 0.335 0.198 0.377 0.048 -0.080 -0.168 -0.121 EVB10040 1990 -0.399 -0.005 -0.107 0.172 -0.137 0.331 0.177 0.331 0.059 -0.150 -0.227 -0.108 EVB10270 1990 -0.347 -0.010 -0.177 0.130 -0.135 0.320 0.183 0.365 0.049 -0.135 -0.194 -0.136 EVQAD412 1990 -0.180 0.100 -0.190 0.070 -0.080 0.340 0.160 0.360 0.000 0.000 -0.160 -0.120

cyp03\_pit129.EVA

					сур	e2_biciz	J.EVA					
EVQAD413 -0.240	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220
EVQAD512 -0.030	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230
-0.060 EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083
0.009												
EVB10170 -0.189	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122
EVB10070 -0.219	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124
-0.256												
EVA10340 -0.015	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038
-0.034 EVB10040	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139
-0.232												
EVB10270 -0.108	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098
EVQAD412 0.260	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070
EVQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220
-0.100												
EVQAD512 -0.190	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110
-0.280 EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178
-0.072												
EVB10170 -0.130	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207
EVB10070 -0.147	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227
-0.147 EVF10005 -0.143	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211

cyp03\_pit129.EVA EVA10340 1992 0.045 0.021 0.170 0.106 0.176 0.015 0.146 0.378 0.173 -0.139 0.031 -0.072 EVA10240 1992 0.030 0.013 0.149 0.161 0.095 -0.009 0.136 0.372 -0.006 0.155 -0.160 -0.087 EVB10040 1992 -0.108 -0.015 0.101 0.165 -0.052 0.035 0.303 0.335 -0.057 0.007 -0.221 -0.145 EVB10270 1992 -0.022 -0.003 0.114 0.144 -0.047 0.069 0.160 0.357 -0.063 0.101 -0.198 -0.116 EVQAD412 1992 0.210 0.050 0.190 0.160 0.150 0.030 -0.060 0.400 0.050 0.310 -0.130 -0.050 EVOAD413 1992 -0.020 -0.030 0.020 0.040 -0.170 0.050 -0.050 0.350 -0.270 0.110 -0.280 -0.160 EVOAD512 1992 -0.040 0.030 0.260 0.270 0.120 0.130 0.410 0.390 0.210 0.130 -0.030 -0.010 EV 513 1992 -0.140 -0.010 0.130 0.210 -0.010 0.030 0.430 0.330 0.020 -0.030 -0.200 -0.140 EVA10200 0.003 1993 0.036 0.042 0.037 0.046 0.163 0.594 0.387 0.253 -0.157 -0.054 0.059 EVB10170 1993 -0.046 -0.035 -0.009 0.031 0.062 -0.082 0.646 0.225 -0.265 0.360 -0.074 0.027 EVB10070 1993 -0.064 -0.041 -0.024 0.029 0.039 -0.157 0.629 0.312 0.213 -0.269 -0.103 0.015 EVF10005 1993 -0.043 -0.004 0.003 0.066 0.070 -0.257 0.654 0.342 -0.184 0.236 -0.101 0.055 EVA10340 1993 0.037 0.065 0.071 0.074 0.139 0.142 0.750 0.520 0.267 -0.176 0.020 0.114 EVA10240 1993 0.014 0.040 0.047 0.057 0.114 0.113 0.724 0.472 0.250 -0.215 -0.004 0.087 EVB10040 1993 -0.057 -0.028 0.042 -0.014 0.050 -0.193 0.638 0.323 0.221 -0.239 -0.103 0.030 EVB10270 1993 -0.031 -0.013 0.003 0.029 0.067 0.026 0.669 0.224 -0.274 -0.051 0.387 0.038 EVQAD412 1993 0.090 0.210 0.120 0.110 0.140 0.320 0.850 -0.120 0.550 0.250 0.050 0.190 EVQAD413 1993 -0.130 -0.160 -0.110 -0.090 -0.060 0.160 0.550 0.220 0.140 -0.540 -0.110 -0.110 EVQAD512 1993 0.110 0.050 0.150 0.130 0.300 0.100 0.790 0.750 0.380 -0.030 0.120 0.180

cyp03 pit129.EVA 1993 -0.030 0.020 0.020 0.090 0.090 -0.320 0.670 0.360 0.250 -0.130 -0.100 EV 513 0.080 0.376 -0.172 EVA10200 -0.051 -0.029 0.150 0.110 0.016 0.318 0.123 0.325 0.003 1994 -0.104 EVB10170 -0.122 -0.127 0.097 0.251 0.119 0.378 -0.453 0.006 1994 0.168 -0.090 0.249 -0.239 0.093 0.230 0.099 0.373 -0.483 0.011 EVB10070 1994 -0.147 -0.153 0.160 -0.112 0.218 -0.267 EVF10005 0.242 0.136 0.188 0.377 -0.506 0.078 1994 -0.131 -0.169 0.116 0.160 -0.142 -0.269 EVA10340 -0.019 -0.026 0.171 0.152 0.018 0.347 0.192 0.335 0.383 -0.279 0.077 1994 -0.108 EVA10240 1994 -0.046 -0.043 0.154 0.150 0.006 0.323 0.163 0.322 0.379 -0.303 0.051 -0.133 0.160 EVB10040 1994 -0.141 -0.159 0.101 -0.123 0.234 0.112 0.207 0.375 -0.491 0.035 -0.267 EVB10270 -0.100 -0.088 0.116 0.155 -0.039 0.274 0.119 0.284 0.375 -0.380 0.006 1994 -0.195 0.070 0.360 0.170 0.420 0.180 0.380 -0.030 0.180 EVOAD412 1994 0.040 0.280 0.060 0.030 0.020 -0.020 0.190 -0.020 0.310 0.360 -0.410-0.200 EVOAD413 1994 -0.200 -0.100 0.160 -0.260 -0.400 0.110 0.150 0.400 0.360 0.370 0.430 EVOAD512 1994 0.070 -0.030 0.260 -0.070 -0.110 0.380 0.130 0.160 -0.160 0.250 0.160 0.170 -0.520 0.120 EV 513 1994 -0.120 -0.180 -0.270 0.099 EVA10200 1995 0.150 0.055 0.130 -0.034 0.033 0.294 0.278 0.425 0.102 0.281 -0.051 0.062 0.261 0.141 EVB10170 1995 0.209 0.086 0.068 -0.103 0.033 0.283 0.289 0.397 -0.135 0.289 0.273 EVB10070 0.216 0.096 0.057 -0.127 0.048 0.390 0.056 0.243 0.129 1995 -0.175 EVF10005 0.104 0.326 0.277 0.396 0.077 0.259 0.148 1995 0.243 0.117 0.059 -0.111 -0.215 EVA10340 1995 0.183 0.054 0.140 0.009 0.057 0.289 0.337 0.444 0.063 0.333 0.191 -0.040 EVA10240 0.279 0.324 0.434 0.054 0.312 0.175 1995 0.180 0.055 0.126 -0.019 0.043 -0.056

cyp03 pit129.EVA EVB10040 1995 0.226 0.104 0.057 -0.121 0.068 0.302 0.275 0.392 0.064 0.249 0.136 -0.190 EVB10270 1995 0.187 0.066 0.092 -0.076 0.023 0.269 0.299 0.410 0.047 0.273 0.146 -0.096 EVOAD412 1995 0.130 0.010 0.230 0.090 0.130 0.290 0.340 0.500 0.000 0.360 0.210 -0.020 EVOAD413 1995 0.130 0.030 0.050 -0.180 -0.130 0.170 0.260 0.370 -0.010 0.190 0.070 -0.050 EVQAD512 1995 0.250 0.090 0.120 0.080 0.050 0.340 0.410 0.440 0.180 0.420 0.260 0.030 EV 513 1995 0.260 0.130 0.060 -0.100 0.140 0.350 0.280 0.400 0.090 0.270 0.160 -0.240 EVA10200 1996 0.052 0.219 0.124 0.132 0.132 0.096 -0.031 0.064 0.001 0.098 -0.105 -0.007 EVB10170 1996 0.050 0.205 0.134 0.138 0.220 0.016 0.011 -0.035 -0.147 0.023 -0.165 -0.024 EVB10070 1996 0.040 0.190 0.123 0.130 0.231 -0.015 -0.041 -0.196 0.001 0.013 -0.179 -0.024 EVF10005 1996 0.040 0.202 0.146 0.142 0.304 0.031 -0.022 -0.217 0.062 0.036 -0.204 -0.015 EVA10340 1996 0.067 0.296 0.167 0.182 0.222 0.122 0.025 0.002 -0.017 0.089 -0.115 -0.022 EVA10240 1996 0.060 0.275 0.151 0.169 0.084 0.203 -0.002 0.070 -0.118 -0.010 -0.046 -0.025 EVB10040 1996 0.040 0.194 0.131 0.134 0.257 0.002 0.023 -0.034 -0.204 0.021 -0.188 -0.021 EVB10270 1996 0.051 0.230 0.129 0.146 0.188 0.020 -0.022 -0.032 -0.108 0.034 -0.137 -0.028 EVQAD412 1996 0.040 0.390 0.140 0.210 0.190 0.150 -0.130 0.030 0.000 0.140 -0.050 -0.030 EVQAD413 1996 0.040 0.150 0.050 0.090 -0.160 0.000 -0.190 -0.100 -0.130 -0.060 -0.100 -0.050 EVOAD512 1996 0.130 0.310 0.280 0.220 0.350 0.300 0.330 0.040 0.130 0.140 -0.160 0.000 EV 513 1996 0.040 0.210 0.160 0.150 0.350 0.060 0.100 -0.010 -0.230 0.050 -0.220 -0.010 EVA10200 1997 0.012 -0.110 0.120 -0.120 0.085 0.207 0.156 0.334 0.333 -0.089 -0.117 -0.112

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cyp03 pit129.EVA 0.277 -0.217 -0.143 EVB10170 1997 -0.054 -0.203 0.083 -0.263 0.161 0.077 0.344 0.140 -0.203 0.062 -0.310 0.069 0.320 0.266 -0.247 -0.161 EVB10070 1997 -0.067 -0.210 0.159 0.126 -0.217 0.092 -0.298 0.332 0.293 -0.237 -0.142 EVF10005 0.094 1997 -0.069 -0.204 0.190 0.135 -0.201 EVA10340 1997 0.009 -0.144 0.182 -0.057 0.152 0.130 0.433 0.191 0.360 -0.115 -0.068 -0.119 EVA10240 0.153 -0.104 0.142 0.113 0.409 0.338 -0.143 -0.090 1997 -0.002 -0.156 0.177 -0.140 EVB10040 0.073 -0.306 0.078 0.324 0.129 0.276 -0.243 -0.154 1997 -0.067 -0.208 0.170 -0.211 EVB10270 1997 -0.032 -0.184 0.099 -0.206 0.138 0.083 0.363 0.150 0.293 -0.195 -0.130 -0.183 0.070 0.470 -0.080 EVQAD412 1997 0.080 -0.060 0.240 0.100 0.170 0.210 0.440 -0.030 -0.040 -0.030 -0.010 0.280 0.180 -0.280 -0.220 EVOAD413 1997 -0.060 -0.230 -0.350 0.060 0.100 -0.270 0.000 -0.170 0.040 0.000 0.010 EVOAD512 0.280 0.290 0.180 0.530 0.250 0.400 1997 -0.090 -0.290 0.310 -0.230 -0.130 EV 513 -0.070 -0.200 0.110 0.210 0.110 0.340 0.140 1997 -0.190 0.222 0.178 -0.072 -0.058 0.471 -0.056 EVA10200 1998 -0.119 -0.101 0.198 0.467 0.321 0.008 -0.187 -0.160 0.282 0.230 0.479 0.529 0.261 -0.281 -0.212 -0.161 EVB10170 1998 0.198 -0.053 0.242 -0.324 -0.200 EVB10070 1998 -0.179 -0.178 0.188 0.276 0.222 0.476 0.515 -0.169 -0.073 -0.118 -0.148 0.561 EVF10005 1998 0.146 0.285 0.270 0.503 0.284 -0.309 -0.188 -0.194 -0.096 0.185 0.292 0.514 0.619 0.379 -0.097 -0.181 -0.079 EVA10340 1998 -0.137 -0.079 0.289 0.003 -0.140 -0.183 -0.083 EVA10240 1998 -0.158 -0.105 0.195 0.283 0.266 0.500 0.588 0.344 -0.004 EVB10040 0.279 0.486 0.532 0.257 -0.319 -0.196 -0.178 1998 -0.157 -0.167 0.173 0.239 -0.081 EVB10270 1998 -0.191 -0.150 0.208 0.277 0.227 0.478 0.536 0.280 -0.232 -0.197 -0.115 -0.027

cyp03_pit129.EVA												
EVQAD412 0.040	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
EVQAD413 0.000	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
EVQAD512 0.010	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
EV 513 -0.110	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210

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## cyp03\_pit129.FLO

cyp03 pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 

cyp03 pit129.FLO INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INOAD413 INOAD512 

cyp03 pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INOAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000  cyp03\_pit129.FLO

INE10000	1958	100760	46101	40000	122422	cypo2_pi			4020	40740	40000	0404	45040
INF10000	1958	406688	46191 163390	48988 220487	122422	258968 1006168	29587 162859	35359	4028	10719	12323	8184	15019
	1958							168828	33292	53686	50017	51627	69190
INQAD412		100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55 <b>1</b> 45	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	. 100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100
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INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	15937	15645	20075	17458	5408	1617	4	0	2430	61906
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

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INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	1723	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	<b>11</b> 529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100

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IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	9	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	ø	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	38400
INB10000	1998	142855	92133	68352	25550	847	0	0	0	28419	36732	32660	90087
INC10000	1998	59944	48938	44590	16678	3608	102	0	0	12752	21081	19833	42941
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	45247
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	70919
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115	135787	301173
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100
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# TANKERSLEY CREEK STUDY

SledgeLaw

Date: November 30,

2021

**Project No.:** 11126B.00

Prepared By:

Michael Pinckney P.E. and Tony Smith P.E.

**Reviewed By:** 

David Harkins, Ph.D., P.E.

Subject:

Tankersley Creek Reservoir Analysis Update

#### **Background**

A Pre-Application Meeting was held on October 13, 2021 between Sledge Law, Carollo Engineers (Carollo), Luminant staff (via telephone), and the Texas Commission on Environmental Quality's (TCEQ) water rights and availability staff. The subject of this meeting regarded the potential approach for securing a water right for the Northeast Texas Municipal Water District (NETMWD) to authorize diversion and impoundment of surface water in Pond GR20 (previously referred to as Pit G-129) for the purposes of developing supplemental surface water supply storage on Tankersley Creek in the Cypress Creek River Basin.

Previous analyses of the water availability located at Pond GR20 focused solely on the firm water supply availability for the potential ecological benefits providing additional supplemental stream flow during low-flow, drought conditions. During the Pre-Application Meeting, TCEQ staff rightly noted that from the perspective of maximizing potential water supply, the proposed surface water permit could seek to obtain the maximum annual diversion amount greater than the firm yield of the pit, given that NETMWD already has permitted firm water supply from other sources - primarily Lake O' The Pines Reservoir (LOTP). Considering the objective of maximizing potential water supply, it would indeed be beneficial to determine the potential maximum annual amount of surface water available for potential use as a maximum diversion target. A larger diversion capability, while not firm, would allow for greater potential operational flexibility in supplementing flows within Tankersley Creek as well as downstream surface water supplies in LOTP, particularly for varying hydrologic conditions.

TCEQ staff further indicated that a key factor in their consideration of a potential new water right will be the extent of flows contributing to the final pit configuration. Of particular concern was the extent of potential effects from flooding from the creek into the pit.

Thus, after authorization from Sledge Law, Carollo has performed two analyses to address these considerations, namely:

- Performance of a Water Availability Modeling (WAM) analysis to identify the potential maximum annual diversion amount from the Pond GR20 location; and
- 2. A compilation and evaluation of the potential contributing watersheds of the proposed finished project area surrounding the Pond GR20 location.

Methods and results of these two analyses are presented herein.

### Identification of Streamflow Availability, Maximum Diversion, and Updated Yields

The latest information provided by Luminant indicates a slightly larger contributing watershed area to the final pit configuration. Using this pit configuration with the latest, slightly larger contributing watershed, Carollo expanded upon the WAM modeling initially developed and documented in the Tankersley Creek Reservoir Study Technical Memorandum 1 dated February 2019 to determine available streamflow for a maximum annual diversion amount, as well as updated firm yields for Pond GR20 and potentially supplemental yield for LOTP. The revised drainage area to Pond GR20 is 898 acres (1.4 sq-mi), with a revised storage capacity of 6,810 ac-ft at a water surface elevation (WSE) of 367 ft above msl.

Two WAM Run 3 scenarios were developed to identify the annual volume of streamflow available, and the reliability of such a diversion. Scenario 1 is a modeled WAM Run 3 modified to add the control point for Pond GR20 without a water right diversion - in order to identify the unappropriated flow at the project location. Scenario 2 is a modified WAM Run 3 to model the proposed reservoir and diversion.

Figure 1 presents the annual volume of unappropriated flow at the Pond GR20 control point. It is observed that the maximum annual volume of unappropriated flow is approximately 1,730 ac-ft. A review of monthly unappropriated flows shows that the monthly volume of unappropriated flows ranges from zero to approximately 584 ac-ft, with 72% of all months having zero unappropriated flow, as shown in Figures 2 and 3.

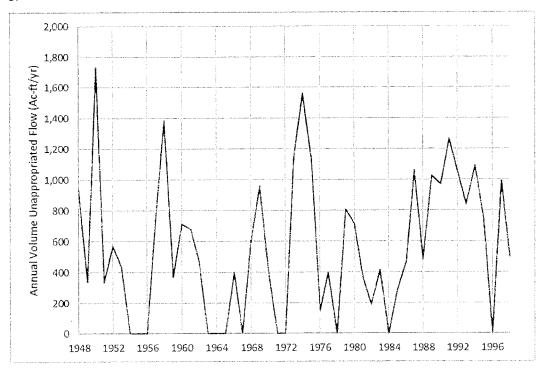


Figure 1: Modeled Annual Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

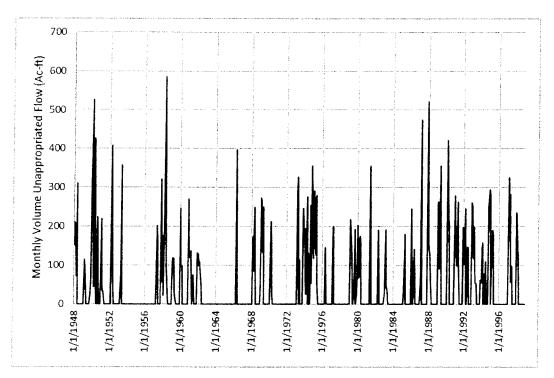


Figure 2: Modeled Monthly Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

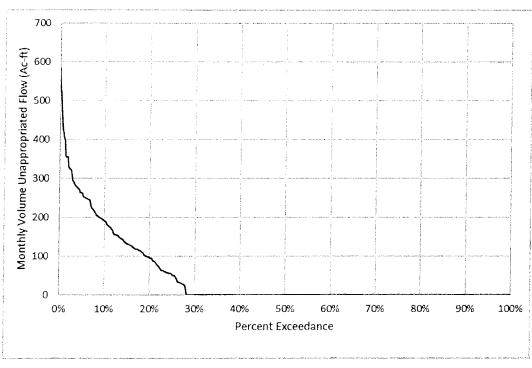


Figure 3: Percent Exceedance of Modeled Monthly Unappropriated Flow at Pond GR20 Control Point utilizing WAM Run 3

To model the proposed diversion and Pond GR20 in the WAM while maximizing the diversion of available unappropriated flows the following analysis has been performed. First, for each month the volume of unappropriated stream flow available for diversion is identified. However, since Pond GR20 refills using unappropriated flow as well, the volume necessary to refill the pond is removed from the potential streamflow diversion. Calculation of the available unappropriated flow while leaving flow available for depletion by Pond GR20 is accomplished by using a dummy water right record (WR) with a water right (WR) Type 8. A Type 8 WR record allows the construction of a water right diversion target for use in subsequent Target Options (TO) record calculations without performing a water diversion or streamflow depletion. The Type 8 WR's diversion target is calculated as the unappropriated flow available at the control point, TO Option 3, and subtraction of the drawdown volume of Pond GR20, TO Option 5. For instances where the drawdown volume exceeds the unappropriated flow volume, the resultant negative number is converted to a zero diversion. The WAM code is as follows:

```
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129 WR585100 20211231 8 1040X9PT129 PT129 TO 3 TO 5 SUB PIT129
```

The proposed water right diversion is modeled as a WR record with an annual diversion of 540 ac-ft per year with a constant monthly diversion pattern backed by a 6,810 ac-ft reservoir. The annual diversion target is then adjusted to divert the available unappropriated flow calculated by the dummy water right, using a TO Option 13 record to modify the target to be the maximum of the unappropriated flow or the monthly diversion from Pond GR20. A Supplemental Water Right Option (SO) record is thus added to limit the annual streamflow depletion amount to the identified 1,730 ac-ft/yr of available streamflow. The WAM code is as follows:

WR585100	540	MONTH20211231	1	1	1.0	104000PT129	PT129
TO 13		MAX				1040X9PT129	
SO						1730	
WSPTT129	6810						

The monthly diversions from Pond GR20 are modeled to be returned to Tankersley Creek as return flow made available to supplement the yield of Lake O' The Pines. Thus a junior priority date refill of Lake O' The Pines has also been added as follows to allow for calculation of the potential gain in supply to Lake O' The Pines:

```
WRB10040 0 IND20211231 1 JrFill 4590 WSLKOPNS 251000
```

The proposed Pond GR20 has a modeled firm yield of 540 ac-ft/year. If the water from Pond GR20 is discharged to supplement the yield of Lake O' The Pines, then the modeled firm yield of Lake O' The Pines increases by approximately 540 ac-ft/yr to 179,340 ac-ft/yr. A copy of the Cypress WAM modeling the potential water right is included as Attachment 1.

Figure 4 presents an exceedance plot of the monthly regulated flows for both the without-project condition and with the project in operation continuously throughout the calendar year. Without the proposed project, the modeled regulated flow at Control Point B10150 entering Lake O' The Pines is zero (0) ac-ft per month in approximately 27% of all simulated months in the WAM period of record. With the project in place, the modeled diversion of 540 ac-ft/yr of firm supply backed by storage from GR20, with a streamflow depletion limit of 1,730 ac-ft/yr and the discharge of these flows to Lake O' The Pines continuously throughout the calendar year provides a monthly base flow of over 40 ac-ft per month (see Figure 4). Figures 5 and 6

present, in a time series and frequency context, the increase in monthly storage in Lake O' The Pines as a result of the operation of Pond GR20 and its associated discharges to Lake O' The Pines.

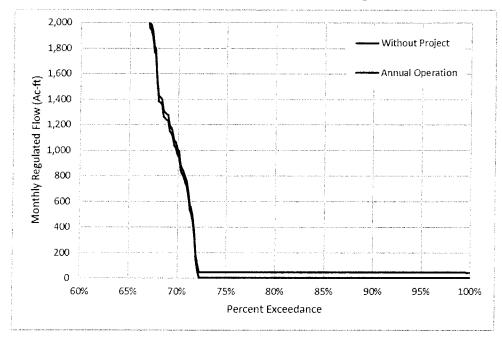


Figure 4: Comparative plot of percent exceedance of modeled monthly regulated flows at Control Point B10150 upstream of Lake O' The Pines for without project and with project (continuous annual operation) conditions utilizing WAM Run 3 (note adjustment of axis to observe difference)

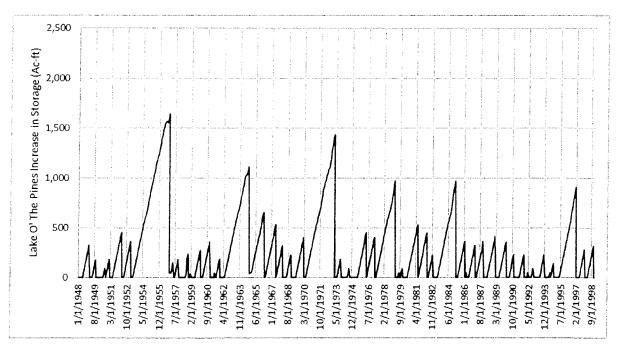


Figure 5: Modeled increase in monthly storage volume at Lake O' The Pines with Pond GR20 operated continuously throughout the calendar year utilizing WAM Run 3

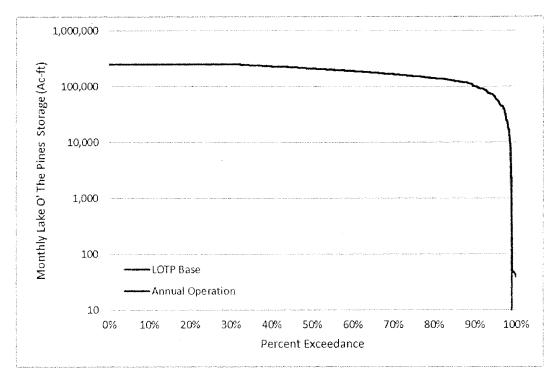


Figure 6: Plot of percent exceedance of modeled monthly storage at Lake O' The Pines over the period of record with proposed project in place utilizing WAM Run 3

Similar to the analysis originally discussed in the Tankersley Creek Reservoir Study Technical Memorandum 1 dated February 2019, the benefits of seasonal operation of Pond GR20 have been evaluated to provide an assessment of the potential increase in base flows if the proposed project were operated in seasonal summer "dry" conditions. As described in the previous analysis, a flow switch was added to the proposed diversion for Pond GR20 which limits releases from the pit to only when regulated flows at the USGS gage on Big Cypress Creek near Pittsburg were below a threshold of 1,200 ac-ft/month (approximately 20 cfs). The WAM code is as follows:

WR58 TO SO		00 13	2079	MONTH202 MAX 1730	11231	1 1	1.0	1040	X9PT		00PT129	PT129
WSPI	IT1	29	6810									
FS	1	1	A10000	0.0	1.0	1200	1	0	1	1	1	
FS	2	1	A10000	0.0	1.0	1200	1	0	2	2	1	
FS	3	1	A10000	0.0	1.0	1200	1	0	3	3	1	
FS	4	1	A10000	0.0	1.0	1200	1	0	4	4	1	
FS	5	1	A10000	0.0	1.0	1200	1	0	5	5	1	
FS	6	1	A10000	0.0	1.0	1200	1	0	6	6	1	
FS	7	1	A10000	0.0	1.0	1200	1	0	7	7	1	
FS	8	1	A10000	0.0	1.0	1200	1	0	8	8	1	
FS	9	1	A10000	0.0	1.0	1200	1	0	9	9	1	
FS 3	10	1	A10000	0.0	1.0	1200	1	0	10	10	1	
FS I	11	1	A10000	0.0	1.0	1200	. 1	0	11	11	1	
FS :	12	1	A10000	0.0	1.0	1200	1	0	12	12	1	

With the seasonal discharge limitation, diversions from GR20, along with a streamflow depletion limit of 1,730 ac-ft/yr, the discharge of flows to Lake O' The Pines seasonally provides a monthly base flow of over 170 ac-ft per month. Once again comparing the regulated flow at Control Point B10150 entering Lake O' the Pines, it is observed in Figure 7 that of the 27% of months where regulated flow was zero, for 20% of those

months the regulated flow has increased by approximately 170 ac-ft/month. Said another way, if the proposed project were to be operated during the summer dry period rather than continuously throughout the year, the "dry period" flows would increase by approximately 170 ac-ft/month in approximately 20% of the months over the modeled period of record.

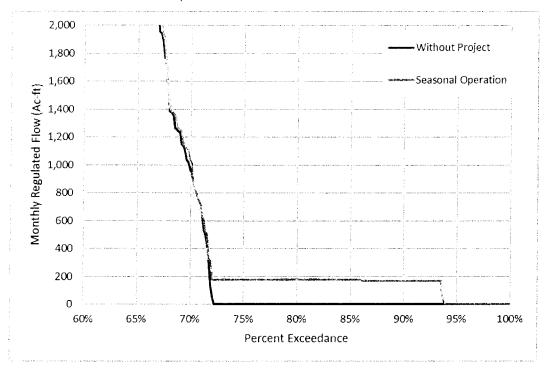


Figure 7: Percent Exceedance of Modeled Monthly Regulated Flow at Control Point B10150 upstream of Lake O'
The Pines utilizing WAM Run 3

These increases to streamflow would further result in increases to the magnitude of storage available during the summer "dry" period. While the increases would occur less frequently (due to operation being limited to summer dry periods), the magnitude of water available to be stored downstream in Lake O' the Pines increases, as shown in Figures 8 and 9. These plots present the time series and frequency of exceedance, respectively, of the increases in the modeled monthly storage in Lake O' The Pines as a result of the operation of Pond GR20 and its associated downstream discharges.

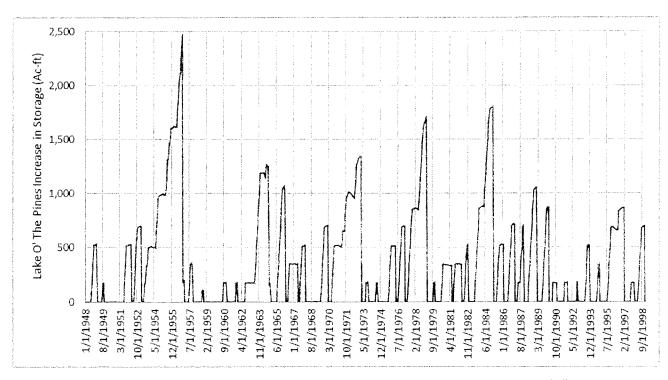


Figure 8: Increases in modeled monthly storage volume of Lake O' The Pines with Pond GR20 operated allyearlong utilizing WAM Run 3

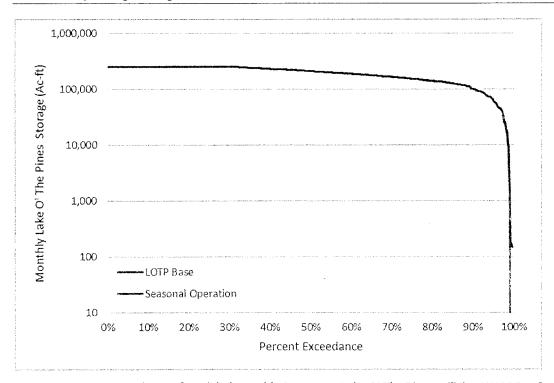


Figure 9: Percent Exceedance of Modeled Monthly Storage at Lake O' The Pines utilizing WAM Run 3

#### **Contributing Watershed Evaluation**

Luminant provided available historical information from past studies of the project area, indicating that no detailed modeling of the watershed's hydrology or rainfall information are available for the project site beyond standard available FEMA floodplain maps.

The map of the proposed layout for the final pit configuration with Pond GR20 and an overlay of the 100-yr floodplain is included as Attachment 2, as well as digital attachments in both ArcGIS and CAD formats. The FEMA 100-yr floodplain is denoted by a dashed red line labeled as Flood Zone A.

Based on Carollo's review of this information, it does not appear that flooding from the creek into Pond GR20 is likely, given the location of the 100-year flood plain from the FEMA mapping of the area. No mapping of the 500-yr flood plain is available from FEMA.

#### **Conclusions**

From the updated modeling analyses performed herein, it has been determined that the maximum annual volume of unappropriated flow available at the proposed project site is approximately 1,730 ac-ft/yr. This amount is not firm, but given the existence of alternative sources of surface water supply available to NETMWD (e.g., stored supplies from Lake O' the Pines), this amount could be available on a non-firm basis and effectively utilized under certain conditions to supplement supplies. It is recommended that if a permit is pursued for this proposed project, the maximum annual diversion amount should be 1,730 ac-ft/yr.

Further, the proposed Pond GR20 has been shown to have a modeled firm yield of 540 ac-ft/year. If the water from Pond GR20 is discharged to supplement the yield of Lake O' The Pines, then the modeled firm yield of Lake O' The Pines increases by approximately 540 ac-ft/yr to 179,340 ac-ft/yr.

With the proposed project in place – meaning a modeled diversion of 540 ac-ft/yr of firm supply backed by storage from Pond GR20, a streamflow depletion limit of 1,730 ac-ft/yr, and the discharge of these flows to Lake O' The Pines – if the project is operated continuously throughout the calendar year the modeling analyses performed herein indicate an increase to monthly flow of slightly more than 40 ac-ft per month. If the proposed project were to be operated only during "dry period" conditions, i.e., when regulated streamflow at the USGS gage on Big Cypress Creek near Pittsburg are below 1,200 ac-ft/month, then the increase to monthly flows increases to 170 ac-ft/month in about 20% of the months in the modeled period of record. The model files utilized in this assessment are provided as Attachment 1.

Based on Carollo's review of the available information regarding flooding in the project area, it does not appear that flooding from the creek into Pond GR20 is likely, given the location of the 100-year flood plain from the FEMA mapping of the area. This available mapping information is provided as Attachment 2.

#### WAM Modifications: Max Diversion Evaluation

Addition of new Control Point watershed parameters to the DIS file.

Proposed impoundment Pit129

FD585100 A10000 0 WP585100 1.40313

> Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

FDTCUSBC A10000 (WPTCUSBC 35.3043

• Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.

FDPPDISC A10000 (WPPPDISC 21.8636

Modifications to Cypress Run3 DAT file.

#### Addition of new Control Points:

Proposed impoundment Pit129

CP585100 585005 7 513

 Flow Analysis location, Tankersley Creek immediately upstream of confluence with Big Cypress Creek.

CPTCUSBC A10000 7 NONE

Flow Analysis location, Pilgrims Pride TPDES permitted discharge location.
 CPPPDISC TCUSBC 7 NONE

Additional control point modifications to maintain the stream network.

 $\mbox{\ensuremath{^{\star\star}}}$  Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

**CP585031 A10000	7	513
**CP585007 A10000	7	NONE
**CP585006 A10000	7	NONE
CP585031 PPDISC	7	513
CP585007 PPDISC	7	NONE
CP585006 PPDISC	7	NONE

\*\* Carollo modify existing CPs to include new tracking CP for Pit 129 analyses

anaryscs			
**CP585005 A	A10000	7	NONE
**CP585004 A	A10000	7	NONE
**CP585003 A	A10000	7	NONE
**CP585002 A	A10000	7	NONE
**CP585001 A	A10000	7	NONE
CP585005 PPI	DISC	7	NONE
CP585004 TCU	JSBC	7	NONE
CP585003 TCU	JSBC	7	NONE
CP585002 TCU	JSBC	7	NONE
CP585001 TCT	ISBC	7	NONE

** Carollo	o modify	existing	CPs	to	include	new	tracking	CP	for	Pit	129
analyses											
**CPA1012	A1000	0			-	7		51	3		
440571010	71000	0			-	-		1	^		

\*\*CPA10100 A10000 7 513

\*\*CPA10100 A10000 7 513

CPA10120 TCUSBC 7 513

CPA10100 TCUSBC 7 513

CPA10090 TCUSBC 7 513

#### Modeling of Pit 129

SVPIT1	29	4	231	629	944	1306	1766	2365
3072	4266	4744	5876	6810				
SAPIT1	29	2	23	30	34	39	54	67
75	86	102	125	143				

#### Modeled Diversion of Pit 129

\*\* Calculate Unappropriated flow considering volume needed to refill storage at PIT129  $\,$ 

WR585100 20211231 8

1040X9PT129 PT129

то з

TO 5 SUB PIT129

\*\* PIT129 Diversion

WR585100 540 MONTH20211231 1 1 1.0

104000PT129 PT129

TO 13 MAX

1040X9PT129

SO 1730

WSPIT129 6810

#### Optional flow switches controlling timing of pit129 water discharges.

FS	1	1 A1000	0.0	1.0	1200	1	0	1
1 FS	2	1 1 A1000	0.0	1.0	1200	1	0	2
2	۷	1	0.0	1.0	1200	±	O	۷.
FS	3	1 A1000	0.0	1.0	1200	1	0	3
3		1						
FS	4	1 A1000	0.0	1.0	1200	1	0	4
4		1						
FS	5	1 A1000	0.0	1.0	1200	1	0	5
5		1						
FS	6	1 A1000	0.0	1.0	1200	1	0	6
6		1						

FS	7	1 A1000	0.0	1.0	1200	1	0	7
7		1						
FS	8	1 A1000	0.0	1.0	1200	1	0	8
8		1						
FS	9	1 A1000	0.0	1.0	1200	1	0	9
9		1						
FS	10	1 A1000	0.0	1.0	1200	1	0	10
10		1						
FS	11	1 A1000	0.0	1.0	1200	1	0	11
11		1						
FS	12	1 A1000	0.0	1.0	1200	1	0	12
12		1						

Modeled additional water right simulating a proposed junior water right authorizing impoundment of additional water in LOTP.

\*\* Jr Refill for LOTP to pickup diversion discharges from PIT129 WRB10040 0 IND20211231 1 JrFill 4590 WSLKOPNS 251000

# cyp03\_pit129-GR20wTO

cyp03\_pit129-GR20wTO

```
T1 Cypress Water Availability Modeling
T2 Full Authorized Diversions, No Return Flows
T3
   Updated 6/18/2015 KA
**
**
**
    General Comments
**
**
   JD
      51
            1948
                       1
                              -1
                                     -1
                                              0
                                                      5
                                                              0
                                                                      0
                                                                             3
                                                                                     0
                                                                                             0
                                                                                                     0
JO
RO
      -1
**
**FY
         1
             10000
                      1000
                              100
                                       10
                                              104000PT129
**FY
            241800
       1.0
                     1000
                              100
                                       10
                                                          FYLOTP
**FY
       1.0
             48500
                     1000
                              100
                                       10
                                                              BOB
**FY
         1
             10000
                     1000
                              100
                                       10
                                              10405850307
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850301
**FY
         1
             10000
                     1000
                              100
                                       10
                                              10405850306
**FY
         1
             10000
                     1000
                              100
                                              10405850304
                                       10
**FY
         1
             10000
                     1000
                              100
                                       10
                                              10405850303
**FY
         1
             10000
                     1000
                              100
                                              10405850305
                                       10
**FY
         1
             10000
                     1000
                              100
                                       10
                                              10405850302
**
   Monthly Water Use Factors
**
UC
    5813
             60
                     60
                             60
                                     60
                                             76
                                                     76
UC
             76
                     76
                             76
                                     60
                                             60
                                                     60
UC
    MUN
          0.077
                  0.070
                          0.075
                                  0.076
                                          0.084
                                                  0.091
UC
          0.100
                  0.100
                          0.089
                                  0.085
                                          0.076
                                                  0.078
UC
     IND
          0.068
                  0.063
                          0.070
                                  0.080
                                          0.081
                                                  0.077
UC
           0.109
                  0.109
                          0.104
                                  0.084
                                          0.072
                                                  0.076
UC
     IRR
           0.000
                  0.001
                          0.004
                                  0.013
                                          0.051
                                                  0.162
UC
          0.200
                  0.241
                          0.142
                                          0.053
                                  0.097
                                                  0.038
UC
    MIN
           0.079
                  0.080
                          0.084
                                  0.080
                                          0.081
                                                  0.077
UC
           0.080
                  0.084
                          0.088
                                  0.090
                                          0.090
                                                  0.087
UC
    REC
           0.083
                  0.083
                          0.083
                                  0.083
                                                 0.083
                                          0.083
UC
           0.083
                  0.083
                          0.083
                                          0.083
                                  0.083
                                                  0.083
```

```
cyp03 pit129-GR20wTO
UC OTHER
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC
                                   0.083
                                           0.083
           0.083
                   0.083
                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                     2.0
                                             2.0
                                                     1.0
UC
             1.0
                                     1.0
                                             1.0
                                                     1.0
                     1.0
                             1.0
                   28.25
UC MONTH
                                                       30
              31
                              31
                                      30
                                              31
UC
              31
                      31
                              30
                                      31
                                              30
                                                       31
**
   Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                    NONE
                                       7
CPPPDISC TCUSBC
                                       7
                                                    NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
                                       7
**
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                       7
                                                     NONE
CP585037 A10120
                                       7
                                                     513
                                       7
                                                     NONE
CP585009 A10120
                                                     NONE
CP585010 A10120
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                        513
**CP585007 A10000
                                         7
                                                       NONE
**CP585006 A10000
                                          7
                                                       NONE
CP585031 PPDISC
                                       7
                                                      513
CP585007 PPDISC
                                       7
                                                     NONE
                                       7
                                                     NONE
CP585006 PPDISC
                                       7
                                                      513
CP585036 585034
                                       7
                                                      513
CP585034 585033
                                       7
                                                      513
CP585033 585032
                                        7
CP585035 585032
                                                      513
                                        7
                                                      513
CP585032 585005
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                                       NONE
                                         7
**CP585004 A10000
                                         7
                                                       NONE
**CP585003 A10000
                                         7
                                                       NONE
                                                       NONE
**CP585002 A10000
                                         7
```

7

NONE

\*\*CP585001 A10000

```
cyp03_pit129-GR20wTO
CP585005 PPDISC
                                      7
                                                   NONE
CP585004 TCUSBC
                                      7
                                                   NONE
CP585003 TCUSBC
                                      7
                                                   NONE
CP585002 TCUSBC
                                      7
                                                   NONE
CP585001 TCUSBC
                                      7
                                                   NONE
CP585011 A10070
                                      7
                                                   NONE
CP585012 A10010
                                       7
                                                   NONE
CP585013 A10010
                                       7
                                                   NONE
** add control points for A5814
CP581431 581432
                                      7
                                                 QAD413
CP581432 A10260
                                      7
                                                 QAD413
CP581433 A10240
                                      7
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                      7
                                                   NONE
CP581302 D10000
                                      7
                                                   NONE
CP581303 D10000
                                      7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                      7
                                                 B10170
CP458237 B10170
                                      7
                                                 B10170
**
CPA10370 A10340
                                      7
                                                 QAD413
CPA10350 A10340
                                      7
                                                 QAD413
CPA10340 A10300
                                      7
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
**
CPA10290 A10200
                                      7
                                                   NONE
CPA10280 A10240
                                      7
                                                 QAD413
CPA10260 A10240
                                      7
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
                                      7
CPA10200 A10000
                                      7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                        7
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                      7
                                                    513
```

#### cyp03\_pit129-GR20wTO CPA10090 TCUSBC 7 513 CPA10070 A10010 7 513 CPA10060 A10010 7 513 CPA10050 A10010 7 513 CPA10040 A10010 7 513 CPA10030 A10010 7 QAD413 CPA10020 A10010 7 NONE CPA10010 A10000 7 513 NONE CPA10000 B10150 0 CPB10320 B10310 7 QAD413 CPB10310 B10150 7 NONE CPB10300 7 QAD413 B10150 CPB10290 B10150 7 QAD413 CPB10270 B10150 7 CPB10260 7 B10150 **QAD413** CPB10250 7 QAD413 B10150 CPB10230 B10170 7 513 CPB10220 B10230 7 513 B10150 7 CPB10210 513 CPB10200 B10150 7 513 CPB10180 513 7 B10170 7 CPB10170 B10150 CPB10150 B10040 7 NONE CPB10120 7 513 B10040 7 513 CPB10110 B10040 CPB10100 B10040 7 513 CPB10090 B10040 7 513 7 513 CPB10080 B10040 CPB10070 B10040 7 7 QAD413 CPB10050 B10040 \*\*CPB10040 B10000 7 NONE CPB10040 B10000 7 CPB10000 F10230 0 NONE CPC10050 C10010 7 QAD413 CPC10040 C10010 7 QAD413 CPC10030 C10010 7 QAD413 CPC10010 C10000 QAD413 7

0

NONE

CPC10000 F10180

			cyp03_pit129-GR20wTO
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10190	7	NONE
CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10130	7	NONE
CPF10140	F10130	7	NONE

				cyp03	pit129-GR	20wT0	
CPF10130	F10080		7		NONE		
CPF10120	F10080		7		<b>51</b> 3		
CPF10110	F10080		7		513		
CPF10100	F10080		7		QAD512		
CPF10090	F10080		7		QAD413		
CPF10080	F10005		7		513		
CPF10030	F10020		7		QAD412		
CPF10020	F10005		7		513		
CPF10005	F10000		7				
CPF10000	OUT		0		NONE		
CP 10050	10040		7		QAD413		
CP 10040	10010		7		QAD413		
CP 10020	10010		7		QAD413		
CP 10010	OUT		7		NONE		
CPQAD412	OUT		0				
CPQAD413	OUT		0				
CPQAD512	OUT		0				
CP 513	OUT		0				
CPSABINE	OUT		2	NONE	NONE		
CPSULPHR	OUT		2	NONE	NONE		
CPA240DM	OUT		2	NONE	NONE		
CPB270DM	OUT		2	NONE	NONE		
CPB70DUM	OUT		2	NONE	NONE		
CPB20MUN	OUT		2	NONE	NONE		
CPAVNGER	OUT		2	NONE	NONE		
CPDNGRFD	OUT		2	NONE	NONE		
CPHGHSPR	OUT		2	NONE	NONE		
CPJEFFSN	OUT		2	NONE	NONE		
CPLVGSTN	OUT		2	NONE	NONE		
CPORECTY	OUT		2	NONE	NONE		
**							
** =====		=======================================				=======	====
CPA-ZERO	OUT		2	ZERO	ZERO	-3	0
	======	=======================================	====	======	=======	=======	====
**	5' 1'			<i>-</i> .			

<sup>\*\*</sup> Water Rights and Associated Reservoir Storage Information

<sup>\*\*</sup> 

<sup>\*\*</sup> Carollo add water right for modeling of pit 129

cyp03 pit129-GR20wTO

alcala — 7 —				cypes_pr	C129-GK	20W10		
** Calcul	ate Unapp	propriated flow	considerin	g volume i	needed	to refill	storage at P	TT129
WR585100		20211231	8	_			1040X9PT129	PT129
TO 3							10 (0)(3) (12)	11123
TO 5		SUB		DT.	T129			
** PIT129	Diversion	on		' -	1127			
WR585100	540	MONTH20211231	1 1	1.0			10400007400	
TO 13		MAX	<b>.</b> .	1.0		4040\(00	104000PT129	PT129
SO		1730				1040X9P	1129	
WSPIT129	6810	1750						
		OTD to middum -	14		_			
WRB10040	111 101 [	OTP to pickup o	itversion a	ischarges	trom P	IT129		
	0	IND20211231	1				JrFill	4590
WSLKOPNS **	251000							
**IXU app		'24/05, kb						
WR585001	50	IND20041231	1				10405850001	5850
WR585002	0	IND20041231	1				10405850002	5850
S0			BACKUP					
WR585003	0	IND20041231	1				10405850003	5850
S0			BACKUP					
WR585004	0	IND20041231	1				10405850004	5850
S0			BACKUP				20 103030004	5050
WR585005	0	IND20041231	1				10405850005	5850
SO			BACKUP				1040202000	9696
WR585006	0	IND20041231	1				10405850006	5850
SO			BACKUP				10407070000	2020
WR585007	0	IND20041231	1				10405850007	E0E0
SO			BACKUP				1040383000/	5850
WR585008	0	IND20041231	1				1040505000	5050
SO		1115200 12251	BACKUP				10405850008	5850
WR585009	0	IND20041231	1				10405050000	
SO	· ·	11020041231	BACKUP				10405850009	5850
WR585010	0	IND20041231	1				4040-0-0-	
SO	O	11020041231					10405850010	5850
WR585011	0	TND20041224	BACKUP					
SO	Ð	IND20041231	1				10405850011	5850
WR585012	0	TND20041224	BACKUP					
SO SO	Ð	IND20041231	1 PACKUD				10405850012	5850
WR585013	0	TND20044.224	BACKUP					
MICOCUM	v	IND20041231	1				10405850013	5850

cyp03\_pit129-GR20wTO

SO			BACKUP	<u> </u>
WR585037	0	IND20041231	1	10405850307 5850
WSR58507	525.6	0.979 0.5841		
WR585031	0	IND20041231	1	10405850301 5850
WSR58501	271.4	0.979 0.5841		
WR585036	0	IND20041231	1	10405850306 5850
WSR58506	327	0.979 0.5841		
WR585034	0	IND20041231	1	10405850304 5850
WSR58504	509.3	0.979 0.5841		
WR585033	0	IND20041231	1	10405850303 5850
WSR58503	287.3	0.979 0.5841		
WR585035	0	IND20041231	1	10405850305 5850
WSR58505	604.8	0.4012 0.856		
WR585032	0	IND20041231	1	10405850302 5850
WSR58502	245.1	0.979 0.5841		
**				
** APPLICA	ATION 58	314		
WR581431	0	OTHER20031028	1	10405814301
WS HR9	356	0.979 0.5841		
WR581432	0	OTHER20031028	1	10405814302
WS HR21	263	0.979 0.5841		
WR581433	0	OTHER20031028	1	10405814303
WS HR10	1495	0.4012 0.856		
** APPLICA				
WR581301	685	581320031001	1	10405813001
WR581303	0	581320031001	1	10405813003
S0			BACKUP	
WR581302	0	581320031001	1	10405813002
S0			BACKUP	
WRD10130	0	REC19830222	1	10404334301 4334
WSWHTOAK	6.7	0.979 0.5841	0	
WRD10160	. 0	REC19830222	1	10404334302 4334
WSBASSLK	3.4	0.979 0.5841	0	
WRD10140	0	REC19830222	1	10404334303 4334
WSDOGWOD	6	0.979 0.5841	0	
WRD10180	0	REC19830222	1	10404334304 4334
WSLKAUTM	130	0.979 0.5841	0	
WRD10170	0	REC19830222	1	10404334305 4334

cyp03\_pit129-GR20wTO

					cypos_preizs drzowio		
WSCATF:	_			0	- · · ·		
WRD101	-		1			10404334306	4334
WSLKPI				0			1554
WRD101	_		1			10404334307	4334
WSLKWA	_			0			1554
WRF100			1		1	10404349001	4349
WSF100				0			1515
S0	3293.45	· <del>-</del>					
WRF100			1		1	10404349002	4349
WSF100				0			7575
S0	3293.45	1281					
WRB102	50 0	REC19841127	1			10404522301	
WSB102		0.979 0.5841		0		20 10 1322301	
WRF101	80 202.5	IRR19841218	1		1	10404525101	
WRA1031	70 0	REC19750106	1			60404558301	
WSA1031		0.979 0.5841		0		00.01550501	
WRA103!	50 0	REC19751215	1			60404559301	
WSA103	50 230	0.979 0.5841		0		00 10 1333301	
**						•	
**							
	ke Cypress	Springs					
**							
**							
WRA1034			1			60404560301	4560 CYPRESS
WSLKCYI	PS 72800						
**							
WRA1034			1			60404560302	4560 CYPRESS
WSLKCYI	PS 72800						
**							
WRA1034	_		1			60404560303	4560 CYPRESS
WSLKCYI	PS 72800						
**							
WRA1034			1			60404560304	4560 CYPRESS
WSLKCYI **	PS 72800						
	10 ^	DECCCOCCCC	_				
WRA1034 WSLKCYF			1			60404560305	4560 CYPRESS
#*	-3 /2800						

# cyp03\_pit129-GR20wT0

**			<i>71</i> <u>−</u> 1			
WRA10300	11.61	IRR19630831	1	60404561001		
WRA10290	24.0	IRR19630801	1	60404562002		
**						
**						
** Lake	Monticello	)				
**	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
**						
WRA10240	15300	IND19700406	1	60404563301	4563	
WSLKMONT	40100	2.10257.001.00	_	33.10.1333301	.505	
**	.0200					
WRA10240	1000	IND19730604	1	60404563302	4563	
WSLKMONT	40100	1110237,30001	-	33 10 13 33 30 1	.505	
**	.0200					
**						
**						
** Lake	Bob Sandli	n				
**						
WRA10200	10000	MUN19711220	1	60404564301	4564	вов
WSBOBSAN			_			
**						
WRA10200	8000	IND19711220	1	60404564302	4564	ВОВ
WSBOBSAN			_			
**						
WRA10200	10900	IND19711220	1	60404564303	4564	вов
WSBOBSAN						
**						
WRA10200	0	REC19711220	1	60404564305	4564	BOB
WSBOBSAN						
		BOB SANDLIN -	MUNI AUTHORIZATION			
WRA10200	1930	MUN19711220	1	2MEMBERSFRMBOB	4590	BOB LOTPBOB
WSBOBSAN	213350					
** LOTP W	ATER FROM	BOB SANDLIN -	IND AUTHORIZATION			
WRA10200	10000	IND19711220	1	1TXU MONTE	4590	BOB LOTPBOB
WSBOBSAN				_		
		ZIZATION OF BOB	SANDLIN WATER RIGHT.	NOTE THAT THIS AUTH WAS DE	EMED TO NOT	HAVE ACCESS TO
		AGE, INFLOWS O				
WRA10200	19600	IND19780313	1	60404564304	4564 BC	OBROR

** =====	======	:==========	====:	=====:	=======================================
WRA10120	1680	MUN19550822	1		60404565301 4565
WSTANKSL	2700	0.4012 0.856	_	0	00404303301 4305
WRA10120	550	IND19550822	1	_	60404565302 4565
WSTANKSL	2700	0.4012 0.856		0	00404303302 4303
WRA10120	0	REC19550822	1		60404565303 4565
WSTANKSL	2700	0.4012 0.856		0	00404505505 4505
WRA10090	21.44	IRR19591231	1		60404566301
WSA10090	0.23	0.979 0.5841		0	00404300301
WRA10100	6	IRR19561231	1		60404567301
WSA10100	5	0.979 0.5841		0	00404307301
WRA10050	7.5	IRR19631231	1		60404568301
WSA10050	35	0.979 0.5841		0	33 13 13 33 33 1
WRA10070	400	MUN19380317	1		60404569301 4569
WSNEWCTY	1176	0.4012 0.856		0	4505
WRA10070	0	REC19380317	1		60404569302 4569
WSNEWCTY	1176	0.4012 0.856		0	1303
WRA10060	144	MUN19750120	1		60404570301 4570
WSOLDCTY	100	0.979 0.5841		0	
WRA10060	0	REC19750120	1		60404570302 4570
WSOLDCTY	100	0.979 0.5841		0	
WRA10040	4	IRR19631231	1		60404571301
WSA10040	12	0.979 0.5841		0	
WRA10030	4.4	IRR19631231	1		60404572301
WSA10030	10	0.979 0.5841		0	
WRE10020	25.3	IND19850604	1		10404573301
WSE10020	42	0.979 0.5841		0	
WRA10010	11	IRR19551231	1		60404573001
WRB10320	0	IRR19511231	1		60404574001 4574
WSOFF320	5.0	0.979 0.5841		0	
SO	5.43	1.40			
WRB10320	1.4	IRR19511231	1		60404574301 4574
WSB10320	0.5	0.979 0.5841		0	
WSOFF320	5.0	0.979 0.5841		0	
OR SO	5.0	1 40			
WRB10290	5.43	1.40	4		
MVDTASAA	0	REC19730430	1		60404575301

WSB10290	80	0 070	0.5841		0	- <b>)</b>
**	80	0.575	0.3641		υ,	
**						
**						
	Reservo	: n				
WRB10270	11000		0720010	4		CO404F7C204 4F7C
WKB10270 WS WELSH		TINDT	9730910	1		60404576301 4576
**	23587					
**						
	0	DEC1	0720010	4		60404576202 4576
WRB10270	0	KECT	9730910	1		60404576302 4576
WS WELSH **	23587					
**						
**						
WRB10230	124	TDD1/	050000	1		60404577301
WSB10230	96		9500930 0.5841	1	0	004045//501
WRB10230	6		9521231	1	0	60404578301
WKB10220 WSB10220	1		0.5841	1	0	004043/8301
WRB10210	75		9531231	1	О	60404579301
WKB10210 WSB10210				1	0	004045/9501
WSB10210 WRB10200	64 2		0.5841 9581231	1	О	60404580301
				1	0	00404580501
WSB10200	0.5		0.5841	4	0	C0404E01201
WRB10180	0 510		9690922	1	•	60404581301
WSB10180 **	510	0.979	0.5841		0	
**						
	a Cole di	ivancian	noint	CD D1	0150	which is on Cypress Crk, downstream of Ellison Reservoir,
						Ellison Crk Reservoir using the SO Record.
		Reservo		uppry	LO	ETITISON CIK RESERVOTI. USTING CHE 30 RECORD.
** ETTT2(	on creek	Kezervo	TL.			
WRB10170	2000	MUNIT	9720508	1		60404582001 4582 ELLISON
WSELLISN	24700	HONT	.9720300	1		00404382001 4382 EEEI30N
** M2EFFT2M	24700					
WRB10170	21000	TND1	9421130	1		60404582002 4582 ELLISON
WSELLISN	24700	TINDI	9421130	_		00404382002 4382 EEEI30N
		ress Cre	ek at nr	iori+	v	
WRB10170	тош сург		9421130	1	У	60404582004 4582 ELLISON
WSELLISN	24700	1	J-721130	_		00404302004 4302 ELEISON
MARCETAIN	27/00					

cyp03 pit129-GR20wTO

S0		25222				cyp03_p1t129-GR20wTO			
<b>30</b> **		26000	B10150						
** Miscel **	laneous	impound	dments on	Barne	s Cr	etc.			
WR458232	0	OTHER1	L9720508				60404582303	4582	barnes
WSBARNES	24000	0.4012	0.856	(	9		00101302303	7302	vai nes
WR458232	0	OTHER1	L9720508				4582BU	4582	barnes
WSBARNES SO	24000		450007	DACKU	_				
**			458237	BACKU	,				
**									
WRB10120	38.3	IRR1	L9620731	1			60404583301		
WSB10120	4.79	0.979	0.5841		9		00404383301		
WRB10110	14.2		L9480930	1			60404584301		
WSB10110	60		0.5841		3				
WRB10100 WSB10100	0.56 50		19550331	1	_		60404585301		
WRB10090	50 1		0.5841 19641231		)				
WSB10090	12		0.5841	1	)		60404586301		
WRB10080	150		19561231	1 `	,		60404587301		
WSSIMPSN	2500	0.4012	0.856		)		00404587501		
**									
**									
	Poconii	ođo /plo		_					
WRB10070	6668		Johnson 19600504	Reserv	/01r	)			
WSJOHNSN	10100	TINDI	19000504	1			60404588301	4588	
**									
WRB10070	0	REC1	9600504	1			60404588302	4588	
WSJOHNSN	10100				•		00.0.000002	4500	
**									
WRB10050	•	DEC1	0754200	_					
WSB10050	0 240		.9751208 0.5841	1			60404589301		
**	240	0.575	0.3841	(	9				
**									
	the Pi								
** ======:	======	======	=======	=====	===	=======================================	=======================================	:=	

** REDUCE	LOTP DE	MAND FOR PORTION	OF	WATER	AUTHORIZED	то ве	TAKEN AT	ВОВ	SANDLIN		
WRB10040	40070	MUN19570916	1						1MUN	4590	<b>FYLOTP</b>
WSLKOPNS	251000	-1									
WRB10040	151800	IND19570916	1						2IND	4590	<b>FYLOTP</b>
WSLKOPNS	251000										
** =====			===:	=====	========			====	======	==	
**											
WRF10250	8	IRR19670430	1				1	6040	04591301		
WSF10250	6	0.979 0.5841		0							
WRF10230	96.88	IRR19690930	1				1	6040	04592001		
WRF10240	85	IRR19620531	1				1	6040	04593301		
WSF10240	100	0.979 0.5841		0							
WRF10220	1080	IRR19550103	1				1	604	04594002		
WRF10210	2000	MUN19630218	1				1	604	04595001		
WRF10190	80.21	IRR19570319	1				1	604	04596001		
WRC10040	25	IRR19760621	1					604	04597301		
WSC10040	35	0.979 0.5841		0							
WRC10030	10	IND19700126	1					604	04598301		
WSC10030	5	0.979 0.5841		0							
WRC10010	47	IRR19530731	1					604	04599001		
WSC10010	7	0.979 0.5841		0							
SO	40.42	47									
WRF10170	62.5	IRR19660630	1				1	604	04600001		
WRD10090	0	REC19461121	1					604	04601301		
WSD10090	135	0.979 0.5841		0							
WRD10080	0	REC19600211	1					604	04602301		
WSD10080	1414	0.4012 0.856		0							
WRD10070	0	REC19730312	1					604	04603301		
WSELWOOD	116	0.979 0.5841		0							
WRD10060	7.03	IRR19670630	1					604	04604301		
WSD10060	28	0.979 0.5841		0							
WRD10030	0	REC19741209	1					604	04605301	4605	
WSD10030	36	0.979 0.5841		0							
WRD10040	0	REC19741209	1					604	04605302	4605	
WSD10040	114	0.979 0.5841		0							
WRD10020	0	REC19740812	1					604	04606301		
WSD10020	294	0.979 0.5841		0							
WRD10010	0	REC19740812	1					604	04607301		

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WSD10010	330	0.979 0.5841		0	<u> </u>		
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0		00.00.000000	
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0		00.0000001	4003
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0		33.0.003302	4005
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0		00.0.0.2502	
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	.02.
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.5841		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.5841		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.5841		0			
WRF10100	0	REC19861125	1		1	10405112301	
WSF10100	277	0.979 0.5841		0			
WRA10280	0 477	IND19880121	1	_		10405167301	
WSPONDH1	477	0.979 0.5841		0			

				<i>-</i>	<b>—</b> I						
WRB10300	0	IRR19890112	1				1040	5212301			
WSB10300	0.09	0.979 0.5841		0							
WRB10260	0	IRR19890810	1				1040	5251301			
WSB10260	86	0.979 0.5841		0							
IFD10110	1025.6	CONST19891214	1	1		IF5272					
**											
WRD10110	6180	MUN19891214	1				1040	5272301	5272		
WSLKGILM	12720										
WRD10110	0	REC19891214	1				1040	5272302	5272		
WSLKGILM	12720										
WRF10090	0	REC19900710				1	1040	5302301			
WSF10090	80	0.979 0.5841		0							
WRA10260	0	IND19950522					1040	5529301			
WSPONDH4	173.7	0.979 0.5841		0							
WRE10080	0	REC19950801					1040	5537301			
WSE10080	296	0.979 0.5841		0							
WRE10090	34	IRR19980320					1040	5608301	5608		
WSE10090	55.6	0.979 0.5841		0							
WRE10090	0	REC19980320					1040	5608302	5608		
WSE10090	55.6	0.979 0.5841		0							
	_	ght is to fill		portion o	f Caddo L	ake up t					
WRF10005	0	OTHER99999999	1				6040	9999301	9999		
WS CADDO	125000						<b>C</b>				
	-	ght is for Loui		s aiversio	n from Ca	аао гаке			0000		
WRF10005	40000	MUN99999999	1				6040	9999302	9999		
WS CADDO **	165000										
		Tables									
**	age-Area	labies									
SVLKMONT	0	1000 2000	55	00 9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175 350	7	00 975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0 5000	175	00 35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300 1100	23	00 3400	4450	5600	8000	8950	10750	12350	
**											
NZNHOCVZ	0	150 700		00 2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50 110		70 245	340	445	550	650	790	900	950
SVLKCYPS	0	3000 6000				47000	72000	92000	120000	186000	
SALKCYPS	0	500 750	11	00 1600	2100	2700	3450	4150	5100	7150	

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SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000	2200	
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250			
SV CADDO	0	10000	35000	70000	140000	235000	370000			18500		
SA CADDO	0	8500	15000	20500	27750			560000	865000			
SV WELSH	0					34500	42250	51500	64250			
		500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860	1740	1805	1336
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**					, 20	0,5	1100	1330	1026			
** Carollo add	dado	ditional	SVSA cur	rve for	Pit 129.							
SVPIT129	4	231	629	944	1306	1766	2365	2072	1200	4744	5076	
SAPIT129	2	23	30					3072	4266	4744	5876	6810
**	_	23	שכ	34	39	54	67	75	86	102	125	143

<sup>\*\*</sup> Drought Indices

DI 1 1 CADDO IS 4 0 125000 125001 865000 IP 100 100 100 100

\*\* Streamflow And Evaporation Records

\*\* ED

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<sup>\*\*</sup> The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

<sup>\*\*</sup> Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this

<sup>\*\*</sup> limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

<sup>\*\*</sup> Therefore, this DI record is only included as a place holder.  $^{**}$ 

# $cyp03\_pit129\text{-}GR20wTO\_FY$

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Cypress Water Availability Modeling
   Full Authorized Diversions, No Return Flows
   Updated 6/18/2015 KA
Т3
**
**
**
   General Comments
**
**
   JD
      51
           1948
                      1
                             -1
                                     -1
                                             0
                                                     5
                                                            0
                                                                    0
                                                                            3
                                                                                    0
                                                                                           0
                                                                                                   0
JO
RO
      -1
**
FΥ
      1
          10000
                   1000
                            100
                                    10
                                           104000PT129
**FY
      1.0
           241800
                     1000
                              100
                                      10
                                                         FYLOTP
**FY
      1.0
            48500
                     1000
                              100
                                      10
                                                            BOB
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850307
**FY
            10000
        1
                     1000
                              100
                                      10
                                             10405850301
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850306
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850304
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850303
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850305
**FY
        1
            10000
                     1000
                              100
                                      10
                                             10405850302
**
   Monthly Water Use Factors
**
UC
   5813
                     60
             60
                            60
                                    60
                                            76
                                                    76
UC
             76
                     76
                             76
                                    60
                                            60
                                                    60
UC
    MUN
          0.077
                  0.070
                         0.075
                                 0.076
                                         0.084
                                                 0.091
UC
          0.100
                  0.100
                         0.089
                                 0.085
                                         0.076
                                                 0.078
UC
          0.068
    IND
                  0.063
                         0.070
                                 0.080
                                         0.081
                                                 0.077
UC
          0.109
                  0.109
                          0.104
                                 0.084
                                         0.072
                                                 0.076
UC
    IRR
          0.000
                         0.004
                  0.001
                                 0.013
                                         0.051
                                                 0.162
UC
          0.200
                  0.241
                                 0.097
                          0.142
                                         0.053
                                                 0.038
UC
    MIN
          0.079
                  0.080
                         0.084
                                 0.080
                                         0.081
                                                 0.077
```

```
cyp03_pit129-GR20wTO_FY
UC
           0.080
                   0.084
                            0.088
                                            0.090
                                                    0.087
                                    0.090
UC
     REC
           0.083
                   0.083
                            0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                            0.083
                                            0.083
                                                    0.083
                                    0.083
UC OTHER
           0.083
                   0.083
                            0.083
                                    0.083
                                            0.083
                                                    0.083
UC
           0.083
                   0.083
                            0.083
                                            0.083
                                                    0.083
                                    0.083
UC CONST
             2.0
                     2.0
                              2.0
                                      2.0
                                              2.0
                                                      1.0
UC
             1.0
                     1.0
                              1.0
                                      1.0
                                              1.0
                                                      1.0
                                                       30
UC MONTH
              31
                   28.25
                               31
                                       30
                                               31
UC
              31
                      31
                               30
                                       31
                                               30
                                                        31
**
**
    Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                                      NONE
                                        7
CPPPDISC TCUSBC
                                        7
                                                      NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                                      513
**
**TXU app 5850, 6/24/05, kb
                                        7
CP585008 A10120
                                                      NONE
                                        7
CP585037 A10120
                                                      513
                                        7
CP585009 A10120
                                                      NONE
                                                     NONE
CP585010 A10120
                                        7
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                          7
                                                         513
**CP585007 A10000
                                          7
                                                        NONE
                                          7
**CP585006 A10000
                                                        NONE
CP585031 PPDISC
                                                      513
                                        7
                                                     NONE
CP585007 PPDISC
CP585006 PPDISC
                                        7
                                                     NONE
CP585036 585034
                                        7
                                                      513
                                        7
CP585034 585033
                                                      513
CP585033 585032
                                        7
                                                      513
CP585035 585032
                                        7
                                                      513
CP585032 585005
                                        7
                                                      513
```

** Carollo modify existing CBs to	include me	cypos_picizy-dkzowio_py	
** Carollo modify existing CPs to :  **CP585005 A10000	incidae new	tracking CP for Pit 129 analyses	
**CP585004 A10000	7	NONE	
**CP585003 A10000	7	NONE	
**CP585002 A10000	7 7	NONE	
**CP585001 A10000	7	NONE	
CP585005 PPDISC	-	NONE	
CP585004 TCUSBC	7	NONE	
CP585003 TCUSBC	7	NONE	
CP585002 TCUSBC	7	NONE	
CP585001 TCUSBC	7	NONE	
CP585011 A10070	7	NONE	
	7	NONE	
·	7	NONE	
· · · = -	7	NONE	
** add control points for A5814 CP581431 581432	_		
	7	QAD413	
	7	QAD413	
CP581433 A10240	7	QAD413	
** add control points for A5813	_		
CP581301 D10000	7	NONE	
CP581302 D10000	7	NONE	
CP581303 D10000	7	NONE	
** additional CPs for C4582, for Ba	arnes Creek		
CP458232 B10170	7	B10170	
CP458237 B10170 **	7	B10170	
CPA10370 A10340	7	QAD413	
CPA10350 A10340	7	QAD413	
CPA10340 A10300	7		
**CPA10300 A10000	7	NONE	
CPA10300 A10200	7	NONE	
**			
CPA10290 A10200	7	NONE	
CPA10280 A10240	7	QAD413	
CPA10260 A10240	7	QAD413	

**CPA10246	A10000		7					
CPA10240	A10200	7	,					
CPA10200	A10000	7	,					
** Carollo	modify existing CPs	to includ	le new	tracking	CP for	Pit 1	29	analyses
**CPA10120	) A10000		7		513			
**CPA10100	A10000		7		513			
**CPA10096	A10000		7		513			
CPA10120	TCUSBC	7	,	53	13			
CPA10100	TCUSBC	7	,	53	13			
CPA10090	TCUSBC	7	,	53	13			
CPA10070	A10010	7	,	53	13			
CPA10060	A10010	7		51	13			
CPA10050	A10010	7	'	51	13			
CPA10040	A10010	7	,	51	13			
CPA10030	A10010	7	,	QAD41	13			
CPA10020	A10010	7	,	NON	NE			
CPA10010	A10000	7	,	53	13			
CPA10000	B10150	6	)	NON	NE			
CPB10320	B10310	7	,	QAD4:	13			
CPB10310	B10150	7	'	NON	NE			
CPB10300	B10150	7	,	QAD4:	13			
CPB10290	B10150	7	'	QAD4:	13			
CPB10270	B10150	7						
CPB10260	B10150	7	,	QAD4:	13			
CPB10250	B10150	7	'	QAD4:	13			
CPB10230	B10170	7	1	53	13			
CPB10220	B10230	7	,	53	13			
CPB10210	B10150	7	,	53	13			
CPB10200	B10150	7	,	53	13			
CPB10180	B10170	7	,	53	13			
CPB10170	B10150	7						
CPB10150	B10040	7	,	NOI	NE			
CPB10120	B10040	7	,	53	13			
CPB10110	B10040	7	,	53	13			
CPB10100	B10040	7	,	53	13			

			cyp03_pit129-GR20wTO_FY
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB1004	0 B10000	7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10000	7	QAD412
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412

#### cyp03\_pit129-GR20wTO FY CPE10050 7 E10040 QAD412 CPE10040 E10000 7 NONE CPE10020 E10010 7 513 CPE10010 7 QAD412 E10000 CPE10000 F10160 NONE 0 CPF10250 F10230 7 QAD512 CPF10240 F10230 7 **51**3 CPF10230 F10220 NONE 7 CPF10220 NONE F10210 7 CPF10210 F10190 7 NONE CPF10190 F10130 7 NONE CPF10180 NONE F10170 7 CPF10170 F10130 7 NONE CPF10160 F10130 7 NONE CPF10140 F10130 7 NONE CPF10130 F10080 7 NONE CPF10120 7 513 F10080 CPF10110 F10080 7 **51**3 CPF10100 F10080 QAD512 7 CPF10090 7 F10080 QAD413 CPF10080 F10005 513 7 CPF10030 F10020 7 QAD412 CPF10020 F10005 7 513 CPF10005 F10000 7 CPF10000 NONE OUT 0 CP 10050 10040 7 QAD413 CP 10040 7 QAD413 10010 CP 10020 10010 7 QAD413 CP 10010 OUT 7 NONE CPQAD412 OUT 0 CPQAD413 OUT 0 CPQAD512 OUT 0 CP 513 OUT 0 CPSABINE OUT 2 NONE NONE

2

NONE

NONE

**CPSULPHR** 

OUT

```
cyp03_pit129-GR20wTO FY
CPA240DM
            OUT
                                     2
                                         NONE
                                                 NONE
CPB270DM
            OUT
                                     2
                                         NONE
                                                 NONE
CPB70DUM
            OUT
                                     2
                                          NONE
                                                 NONE
CPB20MUN
            OUT
                                     2
                                         NONE
                                                 NONE
CPAVNGER
            OUT
                                     2
                                         NONE
                                                 NONE
CPDNGRFD
            OUT
                                     2
                                         NONE
                                                 NONE
CPHGHSPR
            OUT
                                     2
                                                 NONE
                                         NONE
CPJEFFSN
            OUT
                                     2
                                         NONE
                                                 NONE
CPLVGSTN
            OUT
                                     2
                                         NONE
                                                 NONE
CPORECTY
            OUT
                                         NONE
                                                 NONE
**
CPA-ZERO
            OUT
                                          ZERO
                                                 ZERO
                                                           -3
Water Rights and Associated Reservoir Storage Information
**
** Carollo add water right for modeling of pit 129
** Check Unappropriated flow
WR585100
                      20211231 8
                                                                 1040X1PT129
                                                                              PT129
TO
      3
** Calculate Unappropriated flow considering volume needed to refill storage at PIT129
WR585100
                      20211231
                                                                 1040X9PT129
                                                                              PT129
TO
      3
TO
      5
                   SUB
                                               PIT129
** PIT129 Diversion
WR585100
                 MONTH20211231 1 1
            552
                                          1.0
                                                                 104000PT129
                                                                              PT129
TO
     13
                   MAX
                                                         1040X9PT129
S0
                   1730
WSPIT129
           6810
** Check Unappropriated flow
WR585100
                      20211231
                                                                 1040X2PT129
                                                                              PT129
TO
      3
WRB10040
              0
                   IND20211231 1
                                                                      JrFill
                                                                               4590
WSLKOPNS 251000
```

** 61 1 1				-ypp		
	Jnappropr	riated flow				
WR585100		20211231	8		1040X3PT129	PT129
TO 3						
**						
**						
**TXU app	5850, 6/	′24/05, kb				
WR585001	50	IND20041231	1		10405850001	5850
WR585002	0	IND20041231	1		10405850002	5850
SO			BACKUP			
WR585003	0	IND20041231	1		10405850003	5850
SO SO			BACKUP			
WR585004	0	IND20041231	1		10405850004	5850
SO			BACKUP			,,,,,
WR585005	0	IND20041231	1		10405850005	5850
SO	· ·	1110200 11231	BACKUP		10-103030003	5050
WR585006	0	IND20041231	1		10405850006	5850
S0	Ū	IND20041231	BACKUP		10403830000	9696
WR585007	0	IND20041231	1		10405850007	5850
SO	U	111020041231			10403630007	2020
	•	TND20044224	BACKUP		10405050000	F0F0
WR585008	0	IND20041231	1		10405850008	5850
SO	_		BACKUP		1010-0-000	
WR585009	0	IND20041231	1		10405850009	5850
S0			BACKUP			
WR585010	0	IND20041231	1		10405850010	5850
S0			BACKUP			
WR585011	0	IND20041231	1		10405850011	5850
SO			BACKUP			
WR585012	0	IND20041231	1		10405850012	5850
S0			BACKUP			
WR585013	0	IND20041231	1		10405850013	5850
SO			BACKUP			
WR585037	0	IND20041231	1		10405850307	5850
WSR58507	525.6	0.979 0.5841				
WR585031	0	IND20041231	1		10405850301	5850
WSR58501	271.4	0.979 0.5841	_			
		2.2.2 0.2012				

				cyp03_pit129-GR20wTO FY	
WR585036	0	IND20041231	1	10405850306	5850
WSR58506	327	0.979 0.5841		104030300	9000
WR585034	0	IND20041231	1	10405850304	5850
WSR58504	509.3	0.979 0.5841		10,103030304	3830
WR585033	0	IND20041231	1	10405850303	5850
WSR58503	287.3	0.979 0.5841		10,03030303	2020
WR585035	0	IND20041231	1	10405850305	5850
WSR58505	604.8	0.4012 0.856		101030303	2020
WR585032	0	IND20041231	1	10405850302	5850
WSR58502	245.1	0.979 0.5841		10,000,000	3030
**					
** APPLICA		14			
WR581431	0	OTHER20031028	1	10405814301	
WS HR9	356	0.979 0.5841			
WR581432	0	OTHER20031028	1	10405814302	
WS HR21	263	0.979 0.5841			
WR581433	0	OTHER20031028	1	10405814303	
WS HR10	1495	0.4012 0.856			
** APPLICA		13			
WR581301	685	581320031001	1	10405813001	
WR581303	0	581320031001	1	10405813003	
SO			BACKU		
WR581302	0	581320031001	1	10405813002	
SO			BACKU		
WRD10130	0	REC19830222	1	10404334301	4334
WSWHTOAK	6.7	0.979 0.5841		9	
WRD10160	0	REC19830222	1	10404334302	4334
WSBASSLK	3.4	0.979 0.5841	6	9	
WRD10140	0	REC19830222	1	10404334303	4334
WSDOGWOD	6	0.979 0.5841		9	
WRD10180	0	REC19830222	1	10404334304	4334
WSLKAUTM	130	0.979 0.5841	(	9	
WRD10170	0	REC19830222	1	10404334305	4334
WSCATFSH	5	0.979 0.5841		9	
WRD10150	0	REC19830222	1	10404334306	4334

WSLKPINE	10.5	0.979 0.5841		0			
WRD10190	0	REC19830222	1			10404334307	4334
WSLKWALL	5	0.979 0.5841		0			
WRF10080	2343	MUN19830418	1		1	10404349001	4349
WSF10080	8.29	0.979 0.5841		0			
S0	3293.45	2343					
WRF10080	1281	IND19830418	1		1	10404349002	4349
WSF10080	8.29	0.979 0.5841		0			
SO	3293.45	1281					
WRB10250	0	REC19841127	1			10404522301	
WSB10250	380	0.979 0.5841		0			
WRF10180	202.5	IRR19841218	1		1	10404525101	
WRA10370	0	REC19750106	1			60404558301	
WSA10370	350	0.979 0.5841		0			
WRA10350	0	REC19751215	1			60404559301	
WSA10350	230	0.979 0.5841		0			
**							
**							
	Cypress	Springs					
**							
**							
WRA10340			1			60404560301	4560 CYPRESS
WSLKCYPS	72800						
**							
WRA10340			1			60404560302	4560 CYPRESS
WSLKCYPS	72800						
**							
WRA10340			1			60404560303	4560 CYPRESS
WSLKCYPS	72800						
**							
WRA10340			1			60404560304	4560 CYPRESS
WSLKCYPS	72800						
**	_						
WRA10340			1			60404560305	4560 CYPRESS
WSLKCYPS	72800						

**			сурю	3_pit129-GR20wTO_FY		
**						
WRA10300	11.61	IRR19630831	1	60404561001		
WRA10290 **	24.0	IRR19630801	1	60404562002		
**						
** Lake **	Monticello	0				
**						
WRA10240 WSLKMONT **	15300 40100	IND19700406	1	60404563301	4563	
WRA10240 WSLKMONT **	1000 40100	IND19730604	1	60404563302	4563	
**						
	Bob Sandl:	<b>:</b>				
**	DOD Saliu1.	TU				
WRA10200 WSBOBSAN **	10000 213350	MUN19711220	1	60404564301	4564	вов
** WRA10200	9000	TND40744220	_			
WSBOBSAN **	8000 213350	IND19711220	1	60404564302	4564	ВОВ
WRA10200 WSBOBSAN	10900 213350	IND19711220	1	60404564303	4564	вов
**						
WRA10200 WSBOBSAN	0 213350	REC19711220	1	60404564305	4564	вов
		BOB SANDI TN -	MUNI AUTHORIZATIO	DNI		
WRA10200	1930	MUN19711220	1	2MEMBERSFRMBOB	4590	BOB LOTPBOB
WSBOBSAN	213350				OCC P	DOD LUIPBUB
** LOTP W	ATER FROM		IND AUTHORIZATION			
WRA10200	10000	IND19711220	1	1TXU_MONTE	4590	ВОВ LОТРВОВ

#### WSBOBSAN 213350

\*\* REMAINING AUTHORIZATION OF BOB SANDLIN WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO \*\* BOB SANDLIN STORAGE. INFLOWS ONLY.

** BOB SAN	NDLIN ST	ORAGE, INFLOWS OF	NLY.				
WRA10200 **	19600	IND19780313	1		60404564304	4564	BOBROR
** ======	======	=======================================	====:		===		
WRA10120	1680	MUN19550822	1		60404565301	4565	
WSTANKSL	2700	0.4012 0.856		0			
WRA10120	550	IND19550822	1		60404565302	4565	
WSTANKSL	2700	0.4012 0.856		0			
WRA10120	0	REC19550822	1		60404565303	4565	
WSTANKSL	2700	0.4012 0.856		0			
WRA10090	21.44	IRR19591231	1		60404566301		
WSA10090	0.23	0.979 0.5841		0			
WRA10100	6	IRR19561231	1		60404567301		
WSA10100	5	0.979 0.5841		0			
WRA10050	7.5	IRR19631231	1		60404568301		
WSA10050	35	0.979 0.5841		0			
WRA10070	400	MUN19380317	1		60404569301	4569	
WSNEWCTY	1176	0.4012 0.856		0			
WRA10070	0	REC19380317	1		60404569302	4569	
WSNEWCTY	1176	0.4012 0.856		0			
WRA10060	144	MUN19750120	1		60404570301	4570	
WSOLDCTY	100	0.979 0.5841		0			
WRA10060	0	REC19750120	1		60404570302	4570	
WSOLDCTY	100	0.979 0.5841		0			
WRA10040	4	IRR19631231	1		60404571301		
WSA10040	12	0.979 0.5841		0			
WRA10030	4.4	IRR19631231	1		60404572301		
WSA10030	10	0.979 0.5841		0			
WRE10020	25.3	IND19850604	1		10404573301		
WSE10020	42	0.979 0.5841		0			
WRA10010	11	IRR19551231	1		60404573001		
WRB10320	0	IRR19511231	1		60404574001	4574	
WSOFF320	5.0	0.979 0.5841		0			

SO	5.43	1.40			•) p • • • • • • • • • • • • • • • • • •	'	
WRB10320	1.4	IRR19511231	1			60404574004	
WSB10320	0.5	0.979 0.5841	7	0		60404574301	4574
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0	0.3/3 0.3641		О			
SO	5.43	1.40					
WRB10290	9.43						
WSB10290	80	REC19730430	1			60404575301	
**	00	0.979 0.5841		0			
**							
**							
** Welsh	Reservo	ir					
WRB10270	11000	IND19730910	1			60404576364	
WS WELSH	23587	11013730310	_			60404576301	4576
**	23307						
**							
WRB10270	0	REC19730910	1			60404576302	4576
WS WELSH	23587					00404370302	4370
**							
**							
**							
WRB10230	124	IRR19500930	1			60404577301	
WSB10230	96	0.979 0.5841		0		00 10 1377501	
WRB10220	6	IRR19521231	1			60404578301	
WSB10220	1	0.979 0.5841		0		00.10.107.0002	
WRB10210	75	IRR19531231	1			60404579301	
WSB10210	64	0.979 0.5841		0		00.0.0,2502	
WRB10200	2	IRR19581231	1			60404580301	
WSB10200	0.5	0.979 0.5841		0		· - · - · - · - · - · - · - · - · -	
WRB10180	0	REC19690922	1			60404581301	
WSB10180	510	0.979 0.5841		0			
**							
**							

<sup>\*\*</sup> Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,
\*\* is used to supplement water supply to Ellison Crk Reservoir using the SO Record.

				- <b>&gt;</b> F <u>-</u> F			
** Ellis	on Creek	Reservoir					
WRB10170 WSELLISN **	2000 24700	MUN19720508	1		60404582001	4582	ELLISON
WRB10170 WSELLISN	21000 24700	IND19421130	1		60404582002	4582	ELLISON
** Fill	from Cyp	ress Creek at pr	iority				
WRB10170		19421130	1		60404582004	4582	ELLISON
WSELLISN	24700						
S0 **		26000 B10150					
** Misce **	llaneous	impoundments on	Barnes	Cr etc.			
WR458232	0	OTHER19720508			60404582303	4582	barnes
WSBARNES	24000	0.4012 0.856	0				
WR458232	0	OTHER19720508			4582BU	4582	barnes
<b>WSBARNES</b>	24000						
SO		458237	BACKUP				
**							
**							
WRB10120	38.3	IRR19620731	1		60404583301		
WSB10120	4.79	0.979 0.5841	0				
WRB10110	14.2	IRR19480930	1		60404584301		
WSB10110	60	0.979 0.5841	0				
WRB10100	0.56	IRR19550331	1		60404585301		
WSB10100	50	0.979 0.5841	0				
WRB10090	1	IRR19641231	1		60404586301		
WSB10090	12	0.979 0.5841	0				
WRB10080	150	IRR19561231	1		60404587301		
WSSIMPSN	2500	0.4012 0.856	0				
**							
**							
**	_		_				
** Wilke	s Reserv	oir (aka Johnson	Racarv	nir)			

<sup>\*\*</sup> Wilkes Reservoir (aka Johnson Reservoir)

						cyp03_pi	t129-G	R20wT0	FY				
WRB10070	6668	IND19	9600504	1					_	6040458	8301	4588	
WSJOHNSN **	10100												
WRB10070	0	RFC19	9600504	1						6040450	0202	4500	
WSJOHNSN	10100	NLC1.	3000304	_						6040458	8302	4588	
**													
**													
WRB10050	0		9751208	1						6040458	9301		
WSB10050 **	240	0.979	0.5841		0								
**													
	O'the Pir												
** =====					- <b></b>								
			PORTION	OF	WATER	AUTHORIZED	TO RE	TAKEN	-==: ^T	======= POD CAN	======		
WRB10040	40070	MUN19	9570916	1		AOTHORIZED	TO DE	IAKLN	AI		1MUN	4590	FYLOTP
WSLKOPNS	251000	-1									THOM	4330	FILUIP
WRB10040	151800	IND19	9570916	1							2IND	4590	FYLOTP
WSLKOPNS	251000											.550	
** ====== **	======	======	======	===	======	========	=====	======	====	======	======		
WRF10250	8	TDD10	9670430	1				_					
WSF10250	6		90,70430 0.5841	1	0			1		6040459	1301		
WRF10230	96.88		9690930	1	Ø			4		CO404F0	2004		
WRF10240	85		9620531	1				1 1		6040459 6040459			
WSF10240	100		0.5841	_	0			_		0040459	2301		
WRF10220	1080		9550103	1				1		6040459	4002		
WRF10210	2000	MUN19	9630218	1				1		6040459			
WRF10190	80.21	IRR19	957 <b>031</b> 9	1				1		6040459			
WRC10040	25	IRR19	9760621	1						6040459			
WSC10040	35		0.5841		0								
WRC10030	10		9700126	1						6040459	8301		
WSC10030	5		0.5841		0								
WRC10010 WSC10010	47 7		9530731	1	_					6040459	9001		
SO SO	40.42	0.979 47	0.5841		0								
	70.72	4/											

WRF10170	62.5	IRR19660630	1		· · ·	1	60404600001	
WRD10090	0	REC19461121	1				60404601301	
WSD10090	135	0.979 0.5841		0				
WRD10080	0	REC19600211	1				60404602301	
WSD10080	1414	0.4012 0.856		0				
WRD10070	0	REC19730312	1				60404603301	
WSELWOOD	116	0.979 0.5841		0				
WRD10060	7.03	IRR19670630	1				60404604301	
WSD10060	28	0.979 0.5841		0				
WRD10030	0	REC19741209	1				60404605301	4605
WSD10030	36	0.979 0.5841		0				
WRD10040	0	REC19741209	1				60404605302	4605
WSD10040	114	0.979 0.5841		0				
WRD10020	0	REC19740812	1				60404606301	
WSD10020	294	0.979 0.5841		0				
WRD10010	0	REC19740812	1			·	60404607301	
WSD10010	330	0.979 0.5841		0				
WRE10070	18.2	IRR19520630	1				60404608301	
WSE10070	20	0.979 0.5841		0				
WRE10060	15	IND19680318	1				60404609001	4609
WSE10060	4.8	0.979 0.5841		0				
WRE10050	225	IND19821206	1				60404609301	4609
WSE10050	228.2	0.979 0.5841		0				
WRE10040	122	IRR19551010	1				60404610001	
WRE10010	955	IND19430701	1				60404611301	
WSHOLMES	744	0.4012 0.856		0				
WRF10160	46.58	IRR19550323	1			1	60404612001	
WRF10140	165.21	MIN19690224	1			1	60404613001	
WRF10130	7558	MUN19470418	1			1	60404614001	4614
WRF10130	8442	MUN19561127	1			1	60404614002	4614
WRF10120	10	IRR19751215	1			1	60404615301	
WSF10120	54	0.979 0.5841		0				
WRF10110	0	REC19690811	1			1	60404616301	
WSSHADOW	1325	0.4012 0.856		0				
WRF10030	0	REC19720207	1			1	60404617301	

WSLINDEN	112	0.979 0.5841		^	-) P P	•	
WRF10020	42	IRR19790221	1	0	_		
WSF10020	42	0.979 0.5841	1	0	1	60404618301	4618
WRF10020	51	IRR19810413	1	0	_		
WSF10020	42	0.979 0.5841	1	0	1	60404618302	4618
WR 10050	0	REC19760524	1	0			
WS 10050	184	0.979 0.5841	1	^		60404619301	
WR 10040	0	REC19781016	4	0			
WS 10040	600	0.4012 0.856	1	•		60404620301	
WR 10020	000	REC19470922	1	0			
WS 10020	160	0.979 0.5841	7	0		60404621301	
WRD10120	0	REC19860404	1	О			
WSD10120	550	0.979 0.5841	1	0		10405054301	
WRC10050	9	REC19860729	1	0			
WSC10050	300	0.979 0.5841	1	^		10405080301	
WRF10100	9	REC19861125	4	0	_		
WSF10100	277	0.979 0.5841	1	^	1	10405112301	
WRA10280	0	IND19880121	1	0			
WSPONDH1	477	0.979 0.5841	1	^		10405167301	
WRB10300	9	IRR19890112	4	0			
WSB10300	0.09	0.979 0.5841	1	_		10405212301	
WRB10260	0.09	IRR19890810	4	0			
WSB10260	86	0.979 0.5841	1	•		10405251301	
IFD10110	1025.6	CONST19891214	4	0			
**	1025.0	CON3113631214	1	1	IF5272		
WRD10110	6180	MUN19891214	1				
WSLKGILM	12720	1101113031214	1			10405272301	5272
WRD10110	0	REC19891214	1				
WSLKGILM	12720	NEC13031214	1			10405272302	5272
WRF10090	0	REC19900710	1		_	404000000	
WSF10090	80	0.979 0.5841	Τ.	0	1	10405302301	
WRA10260	0	IND19950522	1	Ø		404055005	
WSPONDH4	173.7	0.979 0.5841	1	0		10405529301	
WRE10080	0	REC19950801	1	Ø		4040553333	
WSE10080	296	0.979 0.5841	1	0		10405537301	
	200	0.070 0.0041		U			

WRE10090	34	IRR1	9980320	1		<del></del> .		1040	5608301	5608		
WSE10090	55.6	0.979	0.5841	0								
WRE10090	0	REC1	9980320	1				1040	5608302	5608		
WSE10090	55.6	0.979	0.5841	0								
** This	water ri	ght is t	o fill To	exas' po	rtion of	Caddo L	ake up t	o elevat	ion 168.	5 feet		
WRF10005	0	OTHER9	9999999	1				6040	9999301	9999		
WS CADDO	125000											
** This	water ri	ght is f	or Louis:	iana's d	liversion	from Ca	ddo Lake	for eac	h year			
WRF10005	40000	MUN9	9999999	1				6040	9999302	9999		
WS CADDO **	165000											
** Stor	age-Area	Tables										
**												
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	<b>1</b> 475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
**												
NZNHOCVZ	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
<b>NZNHOLAS</b>	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000	
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000		
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860			
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**				_	_							
** Caroll												
SVPIT129	4	231	629	944	1306	1766	2365	3072	4266	4744	5876	6810

cyp03\_pit129-GR20wTO FY SAPIT129 2 23 30 34 54 39 67 75 86 102 125 143 \*\* \*\* Drought Indices \*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of \*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation. \*\* Therefore, this DI record is only included as a place holder. \*\* DI 1 CADDO IS 125000 125001 865000 0 ΙP 100 100 100 100 \*\* \*\* Streamflow And Evaporation Records \*\*

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			•			•	
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```
T1 Cypress Water Availability Modeling
    Full Authorized Diversions, No Return Flows
Т3
    Updated 6/18/2015 KA
**
**
**
    General Comments
**
**
  JD
      51
            1948
                      1
                             -1
                                     -1
                                              0
                                                      5
                                                             0
                                                                     0
                                                                             3
                                                                                     0
                                                                                             0
                                                                                                    0
JO
RO
      -1
**
**FY
         1
            10000
                     1000
                              100
                                       10
                                              104000PT129
**FY
       1.0
           241800
                     1000
                              100
                                       10
                                                          FYLOTP
**FY
       1.0
            48500
                     1000
                              100
                                       10
                                                              BOB
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850307
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850301
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850306
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850304
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850303
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850305
**FY
         1
            10000
                     1000
                              100
                                       10
                                              10405850302
**
   Monthly Water Use Factors
**
**
UC
    5813
             60
                     60
                             60
                                     60
                                             76
                                                     76
UC
              76
                     76
                             76
                                     60
                                             60
                                                     60
UC
     MUN
           0.077
                  0.070
                          0.075
                                          0.084
                                  0.076
                                                  0.091
UC
           0.100
                  0.100
                                  0.085
                          0.089
                                          0.076
                                                  0.078
UC
     IND
           0.068
                  0.063
                          0.070
                                  0.080
                                          0.081
                                                  0.077
UC
           0.109
                  0.109
                          0.104
                                  0.084
                                          0.072
                                                 0.076
UC
           0.000
     IRR
                  0.001
                          0.004
                                  0.013
                                          0.051
                                                 0.162
UC
           0.200
                  0.241
                          0.142
                                  0.097
                                          0.053
                                                 0.038
UC
     MIN
           0.079
                  0.080
                          0.084
                                  0.080
                                          0.081
                                                  0.077
UC
           0.080
                  0.084
                          0.088
                                  0.090
                                          0.090
                                                 0.087
UC
     REC
           0.083
                          0.083
                  0.083
                                  0.083
                                                 0.083
                                          0.083
UC
           0.083
                  0.083
                          0.083
                                  0.083
```

0.083

0.083

```
cyp03 pit129-GR20wTOwFS1200
UC OTHER
          0.083
                   0.083
                           0.083
                                   0.083
                                          0.083
                                                   0.083
UC
           0.083
                   0.083
                           0.083
                                   0.083
                                           0.083
                                                   0.083
UC CONST
             2.0
                     2.0
                             2.0
                                                     1.0
                                     2.0
                                             2.0
UC
             1.0
                     1.0
                             1.0
                                     1.0
                                             1.0
                                                     1.0
UC MONTH
              31
                   28.25
                                                      30
                              31
                                      30
                                              31
UC
              31
                              30
                                      31
                                              30
                                                      31
                      31
**
** Control Point Records
**
** Carollo add additional control points for flow analyses regarding permitting of pit 129
CPTCUSBC A10000
                                       7
                                                    NONE
                                       7
CPPPDISC TCUSBC
                                                    NONE
** Carollo add additional control point for modeling of pit 129
CP585100 585005
                                       7
                                                     513
**
**TXU app 5850, 6/24/05, kb
CP585008 A10120
                                       7
                                                    NONE
CP585037 A10120
                                       7
                                                     513
                                       7
CP585009 A10120
                                                    NONE
CP585010 A10120
                                       7
                                                    NONE
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585031 A10000
                                         7
                                                       513
**CP585007 A10000
                                         7
                                                      NONE
                                         7
**CP585006 A10000
                                                      NONE
CP585031 PPDISC
                                       7
                                                     513
CP585007 PPDISC
                                       7
                                                    NONE
CP585006 PPDISC
                                       7
                                                    NONE
CP585036 585034
                                       7
                                                     513
                                       7
CP585034 585033
                                                     513
                                       7
                                                     513
CP585033 585032
                                       7
                                                     513
CP585035 585032
CP585032 585005
                                       7
                                                     513
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CP585005 A10000
                                         7
                                                      NONE
**CP585004 A10000
                                         7
                                                      NONE
**CP585003 A10000
                                         7
                                                      NONE
**CP585002 A10000
                                         7
                                                      NONE
```

7

NONE

\*\*CP585001 A10000

```
cyp03_pit129-GR20wTOwFS1200
CP585005 PPDISC
                                                   NONE
CP585004 TCUSBC
                                      7
                                                   NONE
CP585003 TCUSBC
                                      7
                                                   NONE
CP585002 TCUSBC
                                      7
                                                   NONE
CP585001 TCUSBC
                                      7
                                                   NONE
CP585011 A10070
                                      7
                                                   NONE
CP585012 A10010
                                      7
                                                   NONE
CP585013 A10010
                                      7
                                                   NONE
** add control points for A5814
CP581431 581432
                                      7
                                                 QAD413
CP581432 A10260
                                      7
                                                 QAD413
CP581433 A10240
                                      7
                                                 QAD413
** add control points for A5813
CP581301 D10000
                                      7
                                                   NONE
CP581302 D10000
                                      7
                                                   NONE
CP581303 D10000
                                      7
                                                   NONE
** additional CPs for C4582, for Barnes Creek watershed
CP458232 B10170
                                      7
                                                 B10170
CP458237 B10170
                                      7
                                                 B10170
**
CPA10370 A10340
                                                 QAD413
CPA10350 A10340
                                      7
                                                 QAD413
CPA10340 A10300
                                      7
**CPA10300 A10000
                                        7
                                                     NONE
CPA10300 A10200
                                      7
                                                   NONE
**
CPA10290 A10200
                                      7
                                                   NONE
CPA10280 A10240
                                      7
                                                 QAD413
CPA10260 A10240
                                      7
                                                 QAD413
**CPA10240 A10000
                                        7
CPA10240 A10200
                                      7
CPA10200 A10000
** Carollo modify existing CPs to include new tracking CP for Pit 129 analyses
**CPA10120 A10000
                                                      513
**CPA10100 A10000
                                        7
                                                      513
**CPA10090 A10000
                                        7
                                                      513
CPA10120 TCUSBC
                                      7
                                                    513
CPA10100 TCUSBC
                                      7
                                                    513
```

CPA10090	TCUSBC	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10230	B10170	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10150	B10040	7	NONE
CPB10120	B10040	7	513
CPB10110	B10040	7	513
CPB10100	B10040	7	513
CPB10090	B10040	7	513
CPB10080	B10040	7	513
CPB10070	B10040	7	
CPB10050	B10040	7	QAD413
**CPB1004		7	NONE
CPB10040	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE

```
cyp03_pit129-GR20wTOwFS1200
CPD10190
          D10000
                                         7
                                                    QAD412
CPD10180
          D10000
                                         7
                                                    QAD412
CPD10170
          D10160
                                         7
                                                    QAD412
CPD10160
          D10150
                                         7
                                                       513
CPD10150
          D10130
                                         7
                                                       513
CPD10140
          D10130
                                         7
                                                    QAD412
CPD10130
          D10000
                                         7
                                                    QAD412
CPD10120
          D10000
                                         7
                                                    QAD412
CPD10110
          D10000
                                         7
                                                    QAD412
CPD10090
          D10000
                                         7
                                                    QAD412
CPD10080
          D10000
                                         7
                                                    QAD412
CPD10070
          D10000
                                         7
                                                    QAD413
CPD10060
          D10000
                                         7
                                                    QAD413
CPD10050
          D10000
                                         7
                                                      NONE
CPD10040
          D10000
                                        7
                                                    QAD413
CPD10030
          D10000
                                         7
                                                    QAD413
CPD10020
          D10000
                                         7
                                                    QAD413
CPD10010
          D10000
                                         7
                                                    QAD413
CPD10000
          E10060
                                         0
                                                      NONE
CPE10090
          E10080
                                         7
                                                       513
CPE10080
          E10060
                                         7
                                                       513
CPE10070
          E10060
                                        7
                                                       513
CPE10060
          E10040
                                        7
                                                    QAD412
          E10040
CPE10050
                                        7
                                                    QAD412
CPE10040
          E10000
                                        7
                                                      NONE
CPE10020
          E10010
                                        7
                                                       513
CPE10010
          E10000
                                        7
                                                    QAD412
CPE10000
          F10160
                                        0
                                                      NONE
CPF10250
          F10230
                                        7
                                                    QAD512
CPF10240
          F10230
                                        7
                                                       513
CPF10230
          F10220
                                        7
                                                      NONE
CPF10220
          F10210
                                        7
                                                      NONE
CPF10210
          F10190
                                        7
                                                      NONE
CPF10190
          F10130
                                        7
                                                      NONE
CPF10180
          F10170
                                        7
                                                      NONE
          F10130
CPF10170
                                        7
                                                      NONE
CPF10160
          F10130
```

7

7

CPF10140 F10130

NONE

NONE

		cyp03_pit129-GR20wTOwFS1200
CPF10130	F10080	7 NONE
CPF10120	F10080	7 513
CPF10110	F10080	7 513
CPF10100	F10080	7 QAD512
CPF10090	F10080	7 QAD413
CPF10080	F10005	7 513
CPF10030	F10020	7 QAD412
CPF10020	F10005	7 513
CPF10005	F10000	7
CPF10000	OUT	0 NONE
CP 10050	10040	7 QAD413
CP 10040	10010	7 QAD413
CP 10020	10010	7 QAD413
CP 10010	OUT	7 NONE
CPQAD412	OUT	0
CPQAD413	OUT	0
CPQAD512	OUT	0
CP 513	OUT	0
CPSABINE	OUT	2 NONE NONE
CPSULPHR	OUT	2 NONE NONE
CPA240DM	OUT	2 NONE NONE
CPB270DM	OUT	2 NONE NONE
CPB70DUM	OUT	2 NONE NONE
CPB20MUN	OUT	2 NONE NONE
CPAVNGER	OUT	2 NONE NONE
CPDNGRFD	OUT	2 NONE NONE
CPHGHSPR	OUT	2 NONE NONE
CPJEFFSN	OUT	2 NONE NONE
CPLVGSTN	OUT	2 NONE NONE
CPORECTY	OUT	2 NONE NONE
**		
** =====	=======	=======================================
CPA-ZERO	OUT	2 ZERO ZERO -3 0
** =====	======	
**		

Water Rights and Associated Reservoir Storage Information

<sup>\*\*</sup> Carollo add water right for modeling of pit 129

** Check	Unappropr	riated flow			Суро	J_p1(12)	GIVZOW	I OWL 2 I	200			
WR585100		2021		8						1040	V4 DT4 00	D=4.00
TO 3		2022		Ū						1040	X1PT129	PT129
** Calcul	ate Unapp	propriated	flow	cons	idering	volume r	needed	to re-	Fill	cton	200 at DI	T120
WR585100		2021	1231	8		volume 1	iccaca	20 16			age at Pi X9PT129	PT129
TO 3				_						1040	V3L 1 T Z 3	P1129
TO 5		SUB				PT	Г129					
** PIT129	Diversio	on					. 123					
WR585100	2079	MONTH2021	1231	1	1	1.0				10/0	00PT129	PT129
TO 13		MAX						1040	3X9P1		001123	P1129
S0		1730						10-1	J/\J	123		
WSPIT129	6810											
FS 1 1	A10000	0.0	1.0	1	200	1		0	1	1	1	
FS 2 1	A10000	0.0	1.0	13	200	1		ø	2	2	1	
FS 3 1	A10000	0.0	1.0	1	200	1		0	3	3	1	
FS 4 1	A10000	0.0	1.0	1	200	1		9	4	4	1	
FS 5 1	A10000	0.0	1.0		200	1		ø	5	5	1	
FS 6 1	A10000	0.0	1.0	1	200	1		0	6	6	1	
FS 7 1	A10000	0.0	1.0	1	200	1		9	7	7	1	
FS 8 1	A10000	0.0	1.0	1	200	1		ø	8	8	1	
FS 9 1	A10000	0.0	1.0	1	200	1		0	9	9	1	
FS 10 1	A10000	0.0	1.0	1	200	1		0	10	10	1	
FS 11 1	A10000	0.0	1.0	1	200	1		0	11	11	1	
FS 12 1	A10000	0.0	1.0	1	200	1		0	12	12	1	
** Check	Unappropr	riated flow						_			-	
WR585100		2021	1231	8						1040	X2PT129	PT129
TO 3												1 1123
WRB10040	0	IND2021	1231	1							JrFill	4590
WSLKOPNS	251000											1550
	Unappropr	iated flow										
WR585100		2021	1231	8						1040	X3PT129	PT129
TO 3												
**												
**												
**TXU app		′24/05, kb										
WR585001	50	IND2004		1						1040	5850001	5850
WR585002	0	IND2004	1231	1						1040	5850002	5850
S0				BACI	KUP							

WR585003	0	IND20041231	1 BACKUP	cypos_prezzo onzowiow sizo	10405850003	5850
WR585004 SO	0	IND20041231	1		10405850004	5850
WR585005 SO	0	IND20041231	BACKUP 1 BACKUP		10405850005	5850
WR585006 SO	0	IND20041231	1 BACKUP		10405850006	5850
WR585007 SO	0	IND20041231	1 BACKUP		10405850007	5850
WR585008 SO	0	IND20041231	1 BACKUP		10405850008	5850
WR585009 SO	0	IND20041231	1 BACKUP		10405850009	5850
WR585010 SO	0	IND20041231	1 BACKUP		10405850010	5850
WR585011 SO	0	IND20041231	1 BACKUP		10405850011	5850
WR585012 SO	0	IND20041231	1 BACKUP		10405850012	5850
WR585013 SO	0	IND20041231	1 BACKUP		10405850013	5850
WR585037 WSR58507	0 525.6	IND20041231 0.979 0.5841	1		10405850307	5850
WR585031 WSR58501	0 271.4	IND20041231 0.979 0.5841	1		10405850301	5850
WR585036 WSR58506	0 327	IND20041231 0.979 0.5841	1		10405850306	5850
WR585034 WSR58504	0 509.3	IND20041231 0.979 0.5841	1		10405850304	5850
WR585033 WSR58503	0 287.3	IND20041231 0.979 0.5841	1		10405850303	5850
WR585035 WSR58505	0 604.8	IND20041231 0.4012 0.856	1		10405850305	5850
WR585032 WSR58502	0 245.1	IND20041231 0.979 0.5841	1		10405850302	5850
**						

<sup>\*\*</sup> APPLICATION 5814

WR581431	0	OTHER20031028	1	31r = ==== 31120110111 31200	4040504455	
WS HR9	356	0.979 0.5841	1		10405814301	
WR581432	0	OTHER20031028	1		10405814302	
WS HR21	263	0.979 0.5841	_		10403014302	
WR581433	0	OTHER20031028	1		10405814303	
WS HR10	1495	0.4012 0.856			10403014303	
** APPLIC	CATION 58	13				
WR581301	685	581320031001	1		10405813001	
WR581303	0	581320031001	1		10405813001	
S0			BACKUP		10 103013003	
WR581302	0	581320031001	1		10405813002	
S0			BACKUP			
WRD10130	0	REC19830222	1		10404334301	4334
WSWHTOAK	6.7	0.979 0.5841	0			.551
WRD10160	0	REC19830222	1		10404334302	4334
WSBASSLK	3.4	0.979 0.5841	0			
WRD10140	0	REC19830222	1		10404334303	4334
WSDOGWOD	6	0.979 0.5841	0			
WRD10180	0	REC19830222	1		10404334304	4334
WSLKAUTM	130	0.979 0.5841	0			
WRD10170	0	REC19830222	1		10404334305	4334
WSCATFSH	5	0.979 0.5841	0			
WRD10150	0	REC19830222	1		10404334306	4334
WSLKPINE	10.5	0.979 0.5841	0			
WRD10190	0	REC19830222	1		10404334307	4334
WSLKWALL	5	0.979 0.5841	0			
WRF10080	2343	MUN19830418	1	1	10404349001	4349
WSF10080	8.29	0.979 0.5841	0			
S0	3293.45	2343				
WRF10080	1281	IND19830418	1	1	10404349002	4349
WSF10080 SO	8.29	0.979 0.5841	0			
WRB10250	3293.45	1281				
WSB10250	9	REC19841127	1		10404522301	
WRF10180	380 202.5	0.979 0.5841 IRR19841218	0	_		
WRA10370	202.5	REC19750106	1 1	1	10404525101	
WSA10370	350	0.979 0.5841	0		60404558301	
WRA10350	9	REC19751215	1		60404550304	
	9	NEC19/31213	-		60404559301	

WSA10350 ** **	230	0.979 0	.5841	0	-				
** Lake **	Cypress	Springs							
WRA10340 WSLKCYPS **	10500 72800	MUN197	00720	1			60404560301	4560	CYPRESS
WRA10340 WSLKCYPS **	1000 72800	MUN196	660131	1			60404560302	4560	CYPRESS
WRA10340 WSLKCYPS **	210 72800	IRR197	00720	1			60404560303	4560	CYPRESS
WRA10340 WSLKCYPS **	3590 72800	IND197	00720	1			60404560304	4560	CYPRESS
WRA10340 WSLKCYPS **	0 72800	REC196	660131	1			60404560305	4560	CYPRESS
WRA10300 WRA10290 **	11.61 24.0	IRR196 IRR196		1			60404561001 60404562002		
** Lake ** **	Montice.	llo							
WRA10240 WSLKMONT **	15300 40100	IND197	'00406	1			60404563301	4563	}
WRA10240 WSLKMONT ** ** **	1000 40100	IND197	30604	1			60404563302	4563	:
∵т ∟аке	Bob Sand	ITTU							

ats ats				cyp03_pit129-GR20wTOwFS1200	
**					
WRA10200	10000	MUN19711220	1	60404564301 4564 BOB	
WSBOBSAN	213350			20 10 130 1301 4304 BOB	
**					
WRA10200	8000	IND19711220	1	60404564302 4564 BOB	
WSBOBSAN	213350			00+0+30430Z 4304 BUB	
**					
WRA10200	10900	IND19711220	1	60404564202 4564 202	
WSBOBSAN	213350		_	60404564303 4564 BOB	
**					
WRA10200	0	REC19711220	1	60404564205	
WSBOBSAN	=	11220	-	60404564305 4564 BOB	
		M BOB SANDLIN -	MIINIT	TUODIZATION	
WRA10200	1930	MUN19711220	1	<b>A</b> 117117	
WSBOBSAN		1101113/11220	1	2MEMBERSFRMBOB 4590 BOB LOTPBOB	
		M BOB SANDLIN -	TND A	LIODITATION	
WRA10200	10000	IND19711220			
WSBOBSAN		10013/11550	1	1TXU_MONTE 4590 BOB LOTPBOB	
		ODIZATION OF DOD		N. 11	
** BOB CA	NDITH CT	ORAGE, INFLOWS O	SANL	N WATER RIGHT. NOTE THAT THIS AUTH WAS DEEMED TO NOT HAVE ACCESS TO	)
WRA10200	19600				
**	19000	IND19780313	1	60404564304 4564 BOBROR	
	_				
WRA10120	1600			=======================================	
WSTANKSL	1680	MUN19550822	1	60404565301 4565	
		0.4012 0.856			
WRA10120	550	IND19550822	1	60404565302 4565	
WSTANKSL	2700	0.4012 0.856			
WRA10120	0	REC19550822	1	60404565303 4565	
WSTANKSL		0.4012 0.856			
WRA10090	21.44	IRR19591231	1	60404566301	
WSA10090	0.23	0.979 0.5841			
WRA10100	_				
LICATOTOO	6	IRR19561231	1	60404567301	
WSA10100	6 5	IRR19561231 0.979 0.5841	1	60404567301	
WRA10050			1		
	5	0.979 0.5841			
WRA10050 WSA10050 WRA10070	5 7.5	0.979 0.5841 IRR19631231		60404568301	
WRA10050 WSA10050	5 7.5 35	0.979 0.5841 IRR19631231 0.979 0.5841	1	60404568301	
WRA10050 WSA10050 WRA10070	5 7.5 35 400	0.979 0.5841 IRR19631231 0.979 0.5841 MUN19380317	1	60404568301 60404569301 4569	

				cypos_prerry divi	ZON TOM SIZOU		
WSNEWCTY	1176	0.4012 0.856		0			
WRA10060	144	MUN19750120	1			60404570301	4570
WSOLDCTY	100	0.979 0.5841		0			
WRA10060	0	REC19750120	1			60404570302	4570
WSOLDCTY	100	0.979 0.5841		0			
WRA10040	4	IRR19631231	1			60404571301	
WSA10040	12	0.979 0.5841		0			
WRA10030	4.4	IRR19631231	1			60404572301	
WSA10030	10	0.979 0.5841		0			
WRE10020	25.3	IND19850604	1			10404573301	
WSE10020	42	0.979 0.5841		0			
WRA10010	11	IRR19551231	1			60404573001	
WRB10320	0	IRR19511231	1			60404574001	4574
WSOFF320	5.0	0.979 0.5841		0			
50	5.43	1.40					
WRB10320	1.4	IRR19511231	1			60404574301	4574
WSB10320	0.5	0.979 0.5841		0			
WSOFF320	5.0	0.979 0.5841		0			
OR	5.0						
S0	5.43	1.40					
WRB10290	0	REC19730430	1			60404575301	
WSB10290	80	0.979 0.5841		0			
**							
**							
**	_						
	Reservo						
WRB10270	11000	IND19730910	1			60404576301	4576
WS WELSH	23587						
**							
**			_				4==4
WRB10270	0	REC19730910	1			60404576302	4576
WS WELSH **	23587						
**							
**							
	124	TDD1050000	4			60404577204	
WRB10230	124	IRR19500930	1	•		60404577301	
WSB10230	96	0.979 0.5841	4	0		CO404570304	
WRB10220	6	IRR19521231	1			60404578301	

WSB10200 0.5 0.979 0.5841 0 WRB10180 0 REC19690922 WSB10180 0.979 0.5841 510

0.979 0.5841

0.979 0.5841

IRR19531231

IRR19581231

0

1

\*\* \*\*

WSB10220

WRB10210

WSB10210

WRB10200

Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir, \*\* is used to supplement water supply to Ellison Crk Reservoir using the SO Record.

Ellison Creek Reservoir

75

64

\*\*

WRB10170 2000 MUN19720508 1 60404582001 4582 ELLISON WSELLISN 24700 \*\* WRB10170 21000 IND19421130 1 60404582002 4582 ELLISON

WSELLISN 24700 \*\* Fill from Cypress Creek at priority

WRB10170 19421130 1

458237 BACKUP

WSELLISN 24700

S0 26000 B10150

Miscellaneous impoundments on Barnes Cr etc.

\*\*

WR458232 0 OTHER19720508 60404582303 4582 barnes **WSBARNES** 0.4012 0.856 24000 0 WR458232 0 OTHER19720508 4582BU 4582 barnes **WSBARNES** 24000

S0

\*\*

\*\*

WRB10120 38.3 IRR19620731 1 WSB10120 4.79 0.979 0.5841 0 WRB10110 14.2 IRR19480930

0

WSB10110 60 0.979 0.5841 0 WRB10100 0.56 IRR19550331 1

WSB10100 50 0.979 0.5841 60404583301

60404582004

4582 ELLISON

60404579301

60404580301

60404581301

60404584301

60404585301

WRB10090	1	TDD10641221	1	cypes_prc129-dk2ew10w1312ee			
WSB10090	12	IRR19641231 0.979 0.5841		0	60404586301		
WRB10080	150	IRR19561231	1	V	60404587301		
WSSIMPSN	2500	0.4012 0.856		0	00404587501		
**	2500	0.4012 0.830		V			
**							
**							
	c Pocony	oir (aka Johnson	Poc	nvoin)			
WRB10070	6668	IND19600504	1	1 1011 )	60404588301	4588	
WSJOHNSN	10100	11013000304	_		00404040001	4300	
**	10100						
WRB10070	0	REC19600504	1		60404588302	4588	
WSJOHNSN	10100	NECIJ000304	_		00404388302	4500	
**	10100						
**							
WRB10050	0	REC19751208	1		60404589301		
WSB10050	240	0.979 0.5841	_	0	00-0-303301		
**	2.0	0.373 0.3012					
**							
** Lake	O'the Pi	nes					
** =====	=======	==============	====		===========	=	
** REDUCE	LOTP DE	MAND FOR PORTION	OF V	NATER AUTHORIZED TO BE TAKEN A	T BOB SANDLIN		
WRB10040	40070	MUN19570916	1		1MUN	4590	FYLOTP
WSLKOPNS	251000	-1					
WRB10040	151800	IND19570916	1		2IND	4590	FYLOTP
WSLKOPNS	251000						
	======	=============	====		===========	=	
**							
WRF10250	8	IRR19670430	1	1	60404591301		
WSF10250	6	0.979 0.5841		0			
WRF10230	96.88	IRR19690930	1	1	60404592001		
WRF10240	85	IRR19620531	1	1	60404593301		
WSF10240	100	0.979 0.5841		0			
WRF10220	1080	IRR19550103	1	. 1	60404594002		
WRF10210	2000	MUN19630218	1	1	60404595001		
WRF10190	80.21	IRR19570319	1	1	60404596001		
WRC10040	25	IRR19760621	1		60404597301		
WSC10040	35	0.979 0.5841		0			

				,	Cyp03_p1t129-GR20wTOwFS1200		
WRC10030	10	IND19700126	1			60404598301	
WSC10030	5	0.979 0.5841		0			
WRC10010	47	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.5841		0			
SO	40.42	47					
WRF10170	62.5	IRR19660630	1		1	60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.5841		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.4012 0.856		0			
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.5841		0			
WRD10060	7.03	IRR19670630	1			60404604301	
WSD10060	28	0.979 0.5841		0			
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.5841		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.5841		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.5841		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.5841		0			
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.5841		0			
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.5841		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.5841		0			
WRE10040	122	IRR19551010	1			60404610001	
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.4012 0.856		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.5841		0			
WRF10110	0	REC19690811	1		1	60404616301	

				-) F			
WSSHADOW	1325	0.4012 0.856		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.5841		0			
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.5841		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.5841		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.5841		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.4012 0.856		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.5841		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.5841		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.5841		0			
WRF10100	0	REC19861125	1		1	10405112301	
WSF10100	277	0.979 0.5841		0			
WRA10280	0	IND19880121	1			10405167301	
WSPONDH1	477	0.979 0.5841		0			
WRB10300	0	IRR19890112	1			10405212301	
WSB10300	0.09	0.979 0.5841		0			
WRB10260	0	IRR19890810	1			10405251301	
WSB10260	86	0.979 0.5841		0			
IFD10110	1025.6	CONST19891214	1	1	IF5272		
**							
WRD10110	6180	MUN19891214	1			10405272301	5272
WSLKGILM	12720						
WRD10110	0	REC19891214	1			10405272302	5272
WSLKGILM	12720						
WRF10090	0	REC19900710	1		1	10405302301	
WSF10090	80	0.979 0.5841		0			
WRA10260	0	IND19950522	1			10405529301	
WSPONDH4	173.7	0.979 0.5841		0			
WRE10080	0	REC19950801	1			10405537301	
WSE10080	296	0.979 0.5841		0			
WRE10090	34	IRR19980320	1			10405608301	5608

UCE10000					chbo2-b1	CIZ9-GKZ	OMIOME2T	200				
WSE10090	55.6		0.5841	0								
WRE10090	0		.9980320	1				1040	5608302	5608		
WSE10090	55.6		0.5841	0						3000		
** This	water ri	ght is t	o fill T	exas' po	ortion of	: Caddo L	ake up t	o elevat	ion 168.	5 feet		
WRF10005	0	OTHER9	9999999	1					9999301	9999		
WS CADDO	125000									2223		
** This	water ri	ght is f	or Louis	siana's d	diversion	from Ca	nddo Lake	for eac	h vear			
WRF10005	40000	MUN9	9999999	1			Take		9999302	9999		
WS CADDO	165000							00+0	7777702	2223		
**												
** Stor	rage-Area	Tables										
**												
SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	<b>17</b> 5	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	30/5
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750		
**						50	3000	0000	6550	10/50	12350	
NZNHOCVZ	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	10000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	18000
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	950
SALKCYPS	0	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	0	3500	6000	7500	9250	11750	15500	20500	27500	36500		
SAELLISN	0	500	580	660	780	920	1090	1340	1620	1860	47000 2200	
SVLKOPNS	0	50	400	6000	18000	36000	74000	130000	200000	259000	2200	
SALKOPNS	0	50	500	1000	3000	6000	9500	12750	16250	18500		
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000	10200		
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	0	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	670	2470	4980	8230	12270	17270	23420	30860	1/40	1003	1930
SALKGILM	0	285	430	570	720	895	1100	1350	1630			
**							1100	1330	1030			
** Caroll	o add ad	ditional	SVSA cu	rve for	Pit 129.							
SVPIT129	4	231	629	944	1306	1766	2365	3072	4266	4744	5876	6810
SAPIT129	2	23	30	34	39	54	67	75	86	102	125	143
**	_						3,	, 3	50	102	123	T+3

<sup>\*\*</sup> Drought Indices
\*\* The Red River Compact contains a max consumptive use limitation on Texas's diversions downstream of

\*\* Lake O the Pines when Caddo Lake is not spilling. Water rights with this DI are subject to this \*\* limitation. However, Texas' currently authorized diversions do not exceed this consumptive use limitation.

\*\* Therefore, this DI record is only included as a place holder.

\*\*

DI CADDO 1

IS 4 0 125000 125001 865000 100

ΙP 100 100 100

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Streamflow And Evaporation Records

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ED

		10 mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/m
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** Carollo add additional CPs for 1 reservoir (pit 129) ad flow analyses.
FD585100 A10000
WP585100 1.40313
FDTCUSBC A10000
                      0
WPTCUSBC 35.3043
FDPPDISC A10000
                      0
WPPPDISC 21.8636
**TXU app 5850, 6/24/05, kb
** TXU MINING add additional CPs for 13 diversion and 7 reservoirs
FD585008 A10000
WP585008 5.0368
FD585037 A10000
                      0
WP585037 0.4791
FD585009 A10000
                      0
WP585009 1.1166
FD585010 A10000
                      0
WP585010 1.2373
FD585031 A10000
                      0
WP585031 0.4284
FD585007 A10000
                      0
WP585007 0.2604
FD585006 A10000
                      0
WP585006 2.8062
FD585036 A10000
                      0
WP585036 0.4570
FD585034 A10000
                      0
WP585034 0.5905
FD585033 A10000
                      0
WP585033 2.9988
FD585035 A10000
                      0
WP585035 0.6235
FD585032 A10000
                      0
WP585032 4.2301
```

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```
FD585005 A10000
                      0
WP585005 5.8348
FD585004 A10000
                      0
WP585004 0.1356
FD585003 A10000
                      0
WP585003 1.9687
FD585002 A10000
                      0
WP585002 0.1512
FD585001 A10000
                      0
WP585001 0.1708
FD585011 A10000
                      0
WP585011 2.2375
FD585012 A10000
                      0
WP585012 2.6298
FD585013 A10000
                      0
WP585013 1.0074
**
** Flow Distribution and Coefficients for all nine scenarios
** ADD ADDITIONAL CPS FOR A5814
FD581431 A10000
                      0
WP581431
            .855
FD581432 A10000
                      0
WP581432
            .930
FD581433 A10000
                      0
WP581433
            .401
** ADD ADDITIONAL CPS FOR A5813
FD581301 D10000
                      0
WP581301
          7.151
**
                      0
FD581302 D10000
WP581302
          0.303
**
                      0
FD581303 D10000
WP581303
          2.545
**
```

	** add adi	DITIONAL	CPS	FOR	BARNES	CREEK	WATERSHED	суриз_ріт129.01
	FD458232	B10000		0	A10000			
	WP458232	3.364						
	**							
ĺ	FD458237	B10000		0	A10000			
	WP458237	.227						
	**							
	FDA10370	A10000		0				
	FDA10350	A10000		0				
	FDA10340	A10000		0				
	FDA10300	A10000		0				
	FDA10290	A10000		0				
	FDA10280	A10000		0				
	FDA10260	A10000		0				
	FDA10240	A10000		0				
	FDA10200	A10000		0				
	FDA10120	A10000		0				
	FDA10100	A10000		0				
	FDA10090	A10000		0				
	FDA10070	A10000		0				
	FDA10060	A10000		0				
	FDA10050	A10000		0				
	FDA10040	A10000		0				
	FDA10030	A10000		0				
	FDA10020	A10000		0				
	FDA10010	A10000		0				
	FDB10320	B10000		0	A10000			
	FDB10310	B10000		0	A10000			
	FDB10300	B10000		0	A10000			
	FDB10290	B10000		0	A10000			
	FDB10270	B10000		0	A10000			
	FDB10260	B10000		0	A10000			
	FDB10250	B10000		0	A10000			
	DB10230	B10000		0	A10000			
ı	DB10220	B10000		0	A10000			

FDB10210	B10000	0	A10000
FDB10200	B10000	0	A10000
FDB10180	B10000	0	A10000
FDB10170	B10000	0	A10000
FDB10150	B10000	1	A10000
FDB10120	B10000	0	A10000
FDB10110	B10000	0	A10000
FDB10100	B10000	0	A10000
FDB10090	B10000	0	A10000
FDB10080	B10000	0	A10000
FDB10070	B10000	0	A10000
FDB10050	B10000	0	A10000
FDB10040	B10000	1	A10000
FDC10050	C10000	0	
FDC10040	C10000	0	
FDC10030	C10000	0	
FDC10010	C10000	0	
FDD10190	D10000	0	
FDD10180	D10000	0	
FDD10170	D10000	0	
FDD10160	D10000	0	
FDD10150	D10000	0	
FDD10140	D10000	0	
FDD10130	D10000	0	
FDD10120	D10000	0	
FDD10110	D10000	0	
FDD10090	D10000	0	
FDD10080	D10000	0	
FDD10070	D10000	0	
FDD10060	D10000	0	
FDD10050	D10000	0	
FDD10030	D10000	0	
FDD10040	D10000	0	
FDD10020	D10000	0	
FDD10010	D10000	0	

```
FDE10090
          E10000
                          D10000
FDE10080
          E10000
                          D10000
FDE10070
          E10000
                          D10000
FDE10060
          E10000
                          D10000
FDE10050
          E10000
                          D10000
FDE10040
          E10000
                          D10000
                        1
FDE10020
          E10000
                          D10000
FDE10010
          E10000
                          D10000
FDF10250
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10240
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10230
          F10000
                        1
                          B10000
                                   C10000
                                           E10000
FDF10220
          F10000
                        1
                          B10000
                                   C10000
                                           E10000
FDF10210
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10190
          F10000
                          B10000
                                   C10000
                        1
                                           E10000
FDF10180
          F10000
                       1 C10000
                                   B10000
                                           E10000
FDF10170
          F10000
                          C10000
                                   B10000
                                           E10000
FDF10160
          F10000
                          E10000
                        1
                                   B10000 C10000
FDF10140
          F10000
                                   C10000
                          B10000
                                           E10000
FDF10130
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10120
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10110
          F10000
                          B10000
                                   C10000
                                           E10000
FDF10100
          F10000
                          B10000
                      . 0
                                   C10000
                                           E10000
FDF10090
          F10000
                          B10000
                                   C10000
                                          E10000
FDF10080
          F10000
                        3
                          B10000
                                   C10000
                                          E10000
FDF10030
          F10000
                          B10000
                                   C10000
                                          E10000
FDF10020
          F10000
                          B10000
                                   C10000
                                          E10000
FDF10005
          F10000
                          B10000
                                   C10000
                                          E10000
FD 10050
          F10000
                          B10000
                                   C10000
                                          E10000
FD 10040
          F10000
                          B10000
                                   C10000
                                           E10000
FD 10020
          F10000
                          B10000
                                   C10000
                                           E10000
FD 10010 F10000
                                  C10000 E10000
                          B10000
**
**
   Watershed Parameters
```

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WPA10370 6.8736 72.93 43.42

WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10260	2.4997	62.95	45.24
WPA10240	36.26	71.65	45.28
WPA10200	240.042	70.22	44.26
WPA10120	8.6031	69.44	46.42
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10150	682.23	69.54	44.98
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79

WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10000	885.97	68.96	45.11
WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69

0.4741	57.7	46.38
594.00	65.86	44.86
0.4527	65.03	47.46
9.9421	61.84	47.5
691.28	65.25	45.16
0.1139	68.6	46.67
1.0911	58.52	46.67
927.86	68.58	45.18
940.39	68.52	45.2
941.34	68.52	45.2
947.39	68.51	45.21
371.10	64.64	46.75
388.06	64.64	46.75
709.18	65.26	45.21
5.7082	64.03	47.1
2080.13	66.58	45.53
0.4119	55.16	47.76
2.9505	63.56	47.78
1.0985	61.45	47.81
0.3736	55	47.8
2158.50		45.62
		47.74
304.96	61.15	47.59
2791.60	66.21	46.08
2791.60	66.21	46.08
0.8384	75.04	47.24
3.8182	74.8	47.25
0.5407		47.12
		47.2
		100
		100
	100	100
	100	100
		100
100	100	100
	594.00 0.4527 9.9421 691.28 0.1139 1.0911 927.86 940.39 941.34 947.39 371.10 388.06 709.18 5.7082 2080.13 0.4119 2.9505 1.0985 0.3736 2158.50 1.1542 304.96 2791.60 2791.60 0.8384 3.8182 0.5407 105.81 100 100 100 100	594.00       65.86         0.4527       65.03         9.9421       61.84         691.28       65.25         0.1139       68.6         1.0911       58.52         927.86       68.58         940.39       68.52         941.34       68.52         947.39       68.51         371.10       64.64         709.18       65.26         5.7082       64.03         2080.13       66.58         0.4119       55.16         2.9505       63.56         1.0985       61.45         0.3736       55         2158.50       66.53         1.1542       61.58         304.96       61.15         2791.60       66.21         2791.60       66.21         2791.60       66.21         2791.60       67.2         105.81       34.29         100       100         100       100         100       100         100       100         100       100         100       100         100       100

WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
**WPQAD412	100	100	100
**WPQAD413	100	100	100
**WPQAD512	100	100	100
**WP 513	100	100	100
ED			


Cyp03\_pit129.EVA

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					сур	03_pit12	9.EVA					
EVA10200 0.051	1948	0.129	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059
EVB10170 0.031	1948	0.015	0.061	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155
EVB10070 0.023	1948	-0.016	0.053	0.162	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186
EVF10005 0.027	1948	-0.037	0.069	0.204	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219
EVA10340 0.063	1948	0.164	0.185	-0.004	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034
EVA10240 0.055	1948	0.142	0.163	0.009	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049
EVb10040 0.025	1948	-0.024	0.059	0.177	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198
EVB10270 0.038	1948	0.075	0.104	0.066	0.069	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101
EV 513 0.030	1948	-0.050	0.080	0.230	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240
EVQAD412 0.080	1948	0.350	0.400	-0.240	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100
EVQAD413 0.010	1948	0.050	0.000	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080
EVQAD512 0.090	1948	0.100	0.080	0.170	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080
EVA10200 -0.027	1949	-0.366	0.055	-0.057	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214
EVB10170 -0.068	1949	-0.427	0.040	-0.034	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320
EVB10070 -0.080	1949	-0.427	0.033	-0.040	-0.009	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326
EVF10005 -0.080	1949	-0.423	0.031	-0.034	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341
EVA10340 -0.031	1949	-0.472	0.062	-0.079	-0.043	0.172	0.326	0.142	0.542	0.395	-0.077	0.297
EVA10240 -0.040	1949	-0.469	0.057	-0.079	-0.032	0.171	0.274	0.115	0.528	0.384	-0.064	0.297
EVB10040 -0.080	1949	-0.425	0.033	-0.038	-0.018	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331

cyp03 pit129.EVA EVB10270 1949 -0.450 0.047 -0.062 -0.011 0.178 0.152 0.054 0.493 0.364 -0.050 0.305 -0.059 -0.230 EVOAD412 1949 -0.580 0.070 -0.100 0.100 0.650 0.160 0.370 -0.120 0.550 0.260 -0.020 EVOAD413 1949 -0.440 0.040 -0.060 0.070 0.180 -0.070 0.070 0.520 0.370 0.130 0.280 -0.080 0.270 EVQAD512 0.080 0.080 1949 -0.380 -0.040 0.250 0.280 0.620 0.480 -0.100 0.330 0.010 EV 513 -0.030 1949 -0.4200.030 -0.050 0.190 0.110 -0.110 0.380 0.310 -0.210 0.350 -0.080 EVA10200 0.250 0.121 0.420 -0.063 1950 0.054 0.065 0.127 0.022 0.040 0.246 0.119 0.159 EVB10170 1950 0.004 0.045 0.157 0.019 0.013 0.261 0.116 0.476 -0.211 0.218 0.136 0.168 EVB10070 1950 -0.003 0.047 0.153 0.027 0.003 0.250 0.106 0.463 -0.237 0.207 0.127 0.157 EVF10005 -0.007 0.031 0.157 0.023 0.019 0.244 0.133 1950 0.473 -0.214 0.203 0.111 0.147 EVA10340 0.048 0.473 1950 0.035 0.136 -0.009 0.080 0.236 0.153 -0.107 0.250 0.169 0.192 EVA10240 1950 0.041 0.042 0.135 -0.001 0.063 0.236 0.136 0.464 -0.137 0.243 0.167 0.188 EVB10040 1950 -0.005 0.041 0.155 0.025 0.009 0.248 0.116 0.467 -0.229 0.205 0.121 0.153 0.461 -0.193 EVB10270 1950 0.022 0.051 0.143 0.013 0.028 0.246 0.112 0.228 0.154 0.178 EVQAD412 1950 0.110 0.050 0.060 -0.020 0.150 0.120 0.370 -0.060 0.260 0.210 0.140 0.190 EVQAD413 1950 0.010 0.100 0.140 0.040 -0.050 0.270 0.020 0.430 -0.310 0.220 0.180 0.190 EVQAD512 1950 0.020 -0.020 0.100 0.360 0.010 0.280 0.140 0.220 -0.040 0.260 0.630 0.220 -0.010 EV 513 1950 0.020 0.160 0.020 0.030 0.240 0.150 0.480 -0.200 0.200 0.100 0.140 EVA10200 1951 -0.131 -0.015 0.113 0.023 0.124 0.166 0.147 0.376 -0.046 0.160 0.033 -0.009 EVB10170 1951 -0.208 -0.024 0.080 0.021 0.143 -0.026 0.148 0.333 -0.132 0.129 0.038 -0.072

					сур	03_pit12	9.EVA					
EVB10070 -0.102	1951	-0.233	-0.020	0.055	0.019	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030
EVF10005 -0.132	1951	-0.243	-0.014	0.015	0.056	0.166	0.008	0.151	0.297	-0.116	0.163	0.036
EVA10340 0.000	1951	-0.146	-0.041	0.115	0.060	0.115	0.165	0.178	0.409	-0.113	0.135	0.083
EVA10240 -0.011	1951	-0.160	-0.039	0.112	0.043	0.124	0.122	0.165	0.393	-0.127	0.128	0.073
EVB10040 -0.113	1951	-0.237	-0.018	0.040	0.032	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032
EVB10270 -0.042	1951	-0.190	-0.033	0.101	0.017	0.138	0.024	0.146	0.357	-0.143	0.121	0.050
EVQAD412 0.020	1951	-0.140	-0.060	0.090	0.080	0.150	0.440	0.150	0.440	-0.160	0.150	0.130
EVQAD413 -0.010	1951	-0.200	-0.040	0.180	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010
EVQAD512 0.050	1951	-0.070	-0.030	0.160	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090
EV 513 -0.150	1951	-0.250	-0.010	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040
EVA10200 -0.151	1952	-0.056	-0.105	-0.015	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282
EVB10170 -0.192	1952	-0.110	-0.155	-0.059	-0.073	0.031	0.384	0.271	0.353	0.445	0.250	-0.333
EVB10070 -0.183	1952	-0.120	-0.159	-0.057	-0.066	0.037	0.386	0.267	0.339	0.434	0.243	-0.318
EVF10005 -0.181	1952	-0.126	-0.178	-0.047	-0.075	0.027	0.395	0.257	0.358	0.425	0.241	-0.264
EVA10340 -0.227	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312
EVA10240 -0.220	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.473	0.271	-0.325
EVB10040 -0.183	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299
EVB10270 -0.204	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343
EVQAD412 -0.260	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250

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cyp03 pit129.EVA -0.100 -0.090 EVOAD413 1952 -0.100 -0.040 0.070 0.360 0.300 0.280 0.460 0.250 -0.490 -0.190 -0.140 -0.030 EVQAD512 1952 -0.060 -0.170 -0.050 0.390 0.300 0.500 0.490 0.280 -0.310 -0.230 EV 513 1952 -0.130 -0.190 -0.040 -0.080 0.020 0.400 0.250 -0.230 0.370 0.420 0.240 -0.180 EVA10200 -0.045 1953 -0.081 -0.053 -0.017 -0.049 0.391 0.104 0.438 0.414 0.266 -0.012 -0.121 EVB10170 -0.118 -0.063 -0.117 0.021 1953 -0.094 0.369 0.118 0.470 0.397 0.242 0.029 -0.186 EVB10070 1953 -0.137 -0.073 -0.123 -0.114 0.023 0.240 0.354 0.090 0.467 0.393 0.023 -0.199 EVF10005 1953 -0.127 -0.096 -0.127 -0.099 0.027 0.333 0.084 0.457 0.391 0.240 0.021 -0.230 EVA10340 -0.084 -0.092 -0.049 1953 -0.068 0.014 0.395 0.145 0.445 0.417 0.258 0.021 -0.178 -0.011 -0.043 EVA10240 1953 -0.085 -0.079 -0.096 0.392 0.131 0.450 0.414 0.255 0.020 -0.175 EVB10040 1953 -0.133 -0.081 -0.125 -0.109 0.025 0.347 0.088 0.463 0.393 0.240 0.023 -0.210 EVB10270 1953 -0.113 -0.066 -0.107 -0.065 -0.012 0.383 0.116 0.462 0.405 0.248 0.023 -0.174 EVOAD412 -0.070 0.280 1953 -0.090 -0.160 0.120 -0.210 0.390 0.040 0.380 0.440 -0.030 -0.200 EVOAD413 0.000 -0.110 -0.160 0.010 0.500 0.400 0.240 0.030 1953 -0.170 0.420 0.110 -0.100 EVOAD512 1953 0.050 -0.030 -0.090 0.040 0.080 0.420 0.330 0.490 0.410 0.250 0.080 -0.170 -0.090 0.020 EV 513 -0.120 -0.110 -0.130 0.030 0.320 0.080 0.450 0.390 0.240 -0.250 -0.142 EVA10200 1954 -0.091 0.179 0.234 0.088 0.499 0.487 0.627 0.383 -0.156 0.019 -0.042 EVB10170 1954 -0.117 0.204 0.245 0.084 -0.239 0.553 0.548 0.636 0.418 -0.310 -0.013 -0.076 EVB10070 1954 -0.120 0.196 0.233 0.086 -0.258 0.549 0.416 -0.281 -0.026 0.533 0.601 -0.084 EVF10005 1954 -0.114 0.243 0.217 0.119 -0.228 0.574 0.556 0.570 0.431 -0.238 -0.047

-0.063

F1/440240	4054					03_pit12	9.EVA					
EVA10340 -0.034	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.403	-0.308	0.042
EVA10240 -0.049	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037
EVB10040 -0.077	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034
EVB10270 -0.073	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015
EVQAD412 -0.020	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120
EVQAD413 -0.150	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040
EVQAD512 0.030	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010
EV 513 -0.050	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060
EVA10200 0.084	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179
EVB10170 0.069	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247
EVB10070 0.060	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227
EVF10005 0.060	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223
EVA10340 0.100	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290
EVA10240 0.093	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278
EVB10040 0.060	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225
EVB10270 0.078	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256
EVQAD412 0.120	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270
EVQAD413 0.060	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240
EVQAD512 0.120	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.450	0.100	0.390	0.420	0.380

cyp03 pit129.EVA EV 513 1955 -0.100 -0.140 0.210 0.140 -0.010 0.340 0.140 -0.050 0.220 0.280 0.220 0.060 EVA10200 -0.102 0.288 1956 0.005 0.143 0.095 0.120 0.389 0.460 0.414 0.191 -0.135 0.028 EVB10170 1956 -0.038 -0.1800.095 0.067 0.055 0.234 0.378 0.385 0.343 0.130 -0.122 -0.007 EVB10070 -0.043 -0.184 0.053 0.033 0.031 0.193 0.343 1956 0.317 0.297 0.100 -0.127 -0.023 EVF10005 1956 -0.053 -0.169 0.051 0.037 0.006 0.209 0.319 0.341 0.299 0.100 -0.129 -0.033 EVA10340 1956 -0.022 -0.130 0.226 0.182 0.162 0.366 0.575 0.553 0.512 0.225 -0.136 0.036 EVA10240 0.517 0.202 1956 -0.022 -0.142 0.195 0.153 0.148 0.328 0.526 0.473 -0.136 0.028 EVB10040 1956 -0.047 -0.179 0.053 0.035 0.022 0.199 0.317 0.343 0.297 0.100 -0.127 -0.027 EVB10270 -0.028 -0.167 0.130 0.096 0.102 0.259 0.436 0.390 0.154 -0.130 1956 0.428 0.008 -0.190 EVOAD412 0.000 0.230 0.290 0.390 0.680 0.610 0.260 1956 -0.060 0.270 0.640 0.050 EVOAD413 0.310 1956 -0.010 -0.230 0.060 0.020 0.110 0.140 0.350 0.290 0.100 -0.1200.010 EVQAD512 -0.040 -0.140 0.290 0.110 0.550 0.780 0.620 0.630 0.320 -0.080 1956 0.360 0.070 EV 513 1956 -0.060 -0.160 0.050 0.040 -0.010 0.220 0.320 0.340 0.300 0.100 -0.130 -0.040 -0.029 EVA10200 1957 -0.118 -0.114 -0.141 -0.201 0.065 0.170 0.285 0.304 -0.148 -0.176 0.007 0.251 -0.110 -0.392 EVB10170 1957 -0.191 -0.215 -0.224 0.088 0.047 0.240 -0.246 -0.4310.014 EVB10070 0.017 0.230 -0.117 -0.438 -0.257 1957 -0.204 -0.240 -0.234 -0.431 0.131 0.190 0.016 EVF10005 0.236 -0.101 -0.488 1957 -0.195 -0.246 -0.219 -0.412 0.216 0.019 0.196 -0.253 0.043 EVA10340 1957 -0.138 -0.122 -0.182 -0.281 0.066 0.171 0.420 0.327 -0.105 -0.231 -0.180 0.014 EVA10240 1957 -0.152 -0.140 -0.196 -0.303 0.060 0.143 0.377 0.307 -0.114 -0.253 -0.193 0.006

					сур	03_pit12	9.EVA					
EVB10040 0.026	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255
EVB10270 0.001	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225
EVQAD412 -0.010	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100
EVQAD413 -0.070	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270
EVQAD512 0.080	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190
EV 513 0.060	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250
EVA10200 0.046	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099
EVB10170 0.075	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087
EVB10070 0.077	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094
EVF10005 0.079	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073
EVA10340 0.043	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063
EVA10240 0.046	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075
EVB10040 0.077	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087
EVB10270 0.060	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092
EVQAD412 -0.030	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080
EVQAD413 0.070	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160
EVQAD512 0.100	1958	0.050	0.120	0.070	-0.060	0.380	0.260	0.390	0.340	-0.100	0.090	0.020
EV 513 0.080	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060
EVA10200 -0.115	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009

cyp03 pit129.EVA EVB10170 1959 0.043 -0.142 0.218 0.059 -0.024 0.132 -0.028 0.342 0.211 0.038 0.022 -0.233 EVB10070 1959 0.040 -0.144 0.209 0.047 -0.016 0.155 -0.044 0.346 0.203 0.056 0.007 -0.240 -0.129 EVF10005 0.201 1959 0.046 0.228 0.037 -0.031 -0.035 0.361 0.213 0.077 0.009 -0.246 EVA10340 1959 0.035 0.258 0.048 -0.128 0.241 0.106 -0.002 0.092 -0.019 0.327 0.070 -0.170 EVA10240 1959 0.092 0.044 -0.135 0.228 0.099 0.004 0.019 0.326 -0.012 0.246 0.057 -0.177 EVB10040 0.216 1959 0.042 -0.139 0.043 -0.021 0.172 -0.041 0.351 0.207 0.064 0.007 -0.242 EVB10270 1959 0.040 -0.145 0.213 0.078 -0.001 0.104 -0.014 0.012 0.330 0.222 0.033 -0.205 -0.130 0.210 0.120 0.300 EVQAD412 1959 0.030 0.150 0.080 0.070 0.300 -0.070 0.080 -0.060 EVOAD413 1959 0.020 -0.190 0.150 0.080 0.030 0.010 -0.070 0.300 0.170 -0.010 0.000 -0.220 EVQAD512 1959 0.090 -0.090 0.340 0.100 -0.160 0.100 0.090 0.280 0.360 -0.0100.130 -0.240 EV 513 0.230 0.090 1959 0.050 -0.1200.240 0.030 -0.040 -0.030 0.370 0.220 0.010 -0.250 EVA10200 1960 -0.024 0.001 0.173 0.249 0.182 0.222 0.316 0.242 0.052 0.121 0.021 -0.101 0.270 EVB10170 1960 -0.036 -0.042 0.188 0.334 0.144 0.410 0.216 -0.082 0.050 -0.009 -0.260 EVB10070 -0.040 -0.050 0.190 0.336 0.282 0.216 1960 0.146 0.426 -0.109 0.047 -0.032 -0.250 EVF10005 1960 -0.034 -0.056 0.196 0.345 0.324 0.161 0.453 0.231 -0.128 0.049 -0.062 -0.244 EVA10340 0.179 1960 -0.036 -0.012 0.307 0.247 0.174 0.348 0.213 -0.005 0.077 0.061 -0.189 EVA10240 1960 -0.040 -0.017 0.179 0.309 0.241 0.167 0.353 0.209 -0.019 0.072 0.053 -0.194 EVB10040 1960 -0.038 -0.052 0.192 0.339 0.297 0.151 0.436 0.221 -0.116 0.047 -0.043 -0.248 EVB10270 0.151 1960 -0.042 -0.030 0.207 0.182 0.319 0.244 0.377 -0.054 0.059 0.024 -0.224

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					cvpe	93 pit12	9. FVA					
EVQAD412 0.030	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120
EVQAD413 -0.270	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060
EVQAD512 -0.390	1960	0.020	-0.020	0.200	0.360	0.310	0.140	0.410	0.260	0.040	0.060	0.050
EV 513 -0.240	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080
EVA10200 -0.107	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204
EVB10170 -0.169	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219
EVB10070 -0.183	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224
EVF10005 -0.181	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215
EVA10340 -0.123	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214
EVA10240 -0.135	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219
EVB10040 -0.183	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221
EVB10270 -0.158	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224
EVQAD412 -0.110	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240
EVQAD413 -0.190	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250
EVQAD512 -0.070	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160
EV 513 -0.180	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210
EVA10200 0.053	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035
EVB10170 0.039	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122
EVB10070 0.030	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136

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cyp03 pit129.EVA 1962 -0.114 EVF10005 0.082 0.261 0.065 0.380 0.129 0.423 0.534 0.070 -0.025 -0.145 0.018 EVA10340 1962 -0.102 0.031 0.153 0.059 0.399 0.024 0.353 0.481 -0.023 -0.057 -0.017 0.051 EVA10240 1962 -0.108 0.021 0.151 0.064 0.394 0.030 0.361 0.477 -0.027 -0.082 -0.032 0.050 0.054 EVB10040 0.232 0.380 1962 -0.118 0.071 0.108 0.039 0.417 0.518 -0.070 -0.139 0.026 EVB10270 1962 -0.116 0.012 -0.023 0.163 0.072 0.388 0.047 0.483 0.381 -0.116 -0.079 0.046 EVQAD412 1962 -0.120 0.040 0.080 0.060 0.360 0.040 0.420 0.330 -0.030 -0.040 0.150 0.040 EVOAD413 1962 -0.140 -0.100 0.070 0.100 0.380 -0.010 0.380 0.430 -0.130 -0.320 -0.110 0.070 EVQAD512 1962 -0.050 0.070 0.240 0.030 0.470 -0.030 0.330 0.560 0.000 0.060 -0.1100.070 EV 513 0.290 0.380 0.150 1962 -0.110 0.110 0.060 0.430 0.550 0.100 0.020 -0.150 0.010 EVA10200 1963 0.033 0.124 0.141 -0.002 0.177 0.316 0.132 0.440 0.351 0.409 -0.004 -0.037 EVB10170 1963 0.023 0.131 0.161 -0.081 0.283 0.294 0.419 0.289 0.437 0.179 -0.025 -0.100 EVB10070 1963 0.017 0.127 0.168 -0.090 0.305 0.299 0.162 0.399 0.267 0.436 -0.037 -0.116 EVF10005 0.019 0.224 1963 0.123 -0.096 0.345 0.318 0.198 0.418 0.251 0.451 -0.039 -0.125 EVA10340 0.036 0.140 1963 0.181 -0.017 0.218 0.296 0.204 0.506 0.361 0.452 0.032 -0.044 EVA10240 1963 0.031 0.139 0.164 -0.025 0.222 0.292 0.182 0.482 0.349 0.446 0.022 -0.055 EVB10040 1963 0.017 0.125 0.188 -0.092 0.320 0.306 0.175 0.406 0.261 0.441 -0.037 -0.119 EVB10270 -0.005 1963 0.024 0.135 0.144 -0.054 0.246 0.288 0.160 0.436 0.317 0.436 -0.081 EVQAD412 1963 0.020 0.140 0.190 0.090 0.150 0.310 0.560 0.410 0.460 0.100 0.100 -0.010 EVQAD413 1963 0.010 0.140 -0.010 -0.070 0.180 0.240 0.050 0.340 0.320 0.390 -0.030 -0.090

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cyp03 pit129.EVA EVQAD512 1963 0.080 0.150 0.260 -0.080 0.300 0.260 0.430 0.580 0.380 0.480 0.020 -0.020 EV 513 1963 0.020 0.120 0.260 -0.100 0.370 0.330 0.220 0.430 0.240 0.460 -0.040 -0.130 EVA10200 1964 0.052 -0.017 0.001 -0.077 0.163 0.416 0.144 0.434 0.044 0.283 -0.016 0.005 EVB10170 1964 -0.031 0.037 -0.008 -0.095 0.220 0.418 0.474 0.086 0.012 0.305 0.006 -0.066 EVB10070 1964 0.030 -0.034 -0.010 -0.098 0.227 0.420 0.449 0.053 0.022 0.303 0.013 -0.103 EVF10005 1964 0.018 -0.025 -0.050 0.002 0.229 0.426 0.468 0.069 0.076 0.307 0.023 -0.126 EVA10340 1964 0.041 -0.026 -0.017 -0.052 0.190 0.417 0.567 0.173 -0.008 0.292 -0.006 0.038 EVA10240 -0.031 -0.021 1964 0.042 -0.073 0.195 0.416 0.540 0.143 -0.019 0.291 -0.005 0.018 EVB10040 1964 -0.031 -0.006 0.026 -0.081 0.227 0.422 0.456 0.059 0.305 0.041 0.017 -0.111 EVB10270 1964 0.041 -0.035 -0.020 -0.103 0.209 0.416 0.491 0.095 0.295 -0.021 -0.001 -0.029 EVOAD412 1964 0.030 -0.040 -0.070 -0.040 0.160 0.420 0.600 0.140 -0.070 0.240 0.000 0.080 EVQAD413 1964 0.070 -0.060 -0.050 -0.250 0.220 0.400 0.390 -0.150 0.000 0.290 -0.020 -0.030 EVQAD512 1964 0.050 0.010 0.060 0.050 0.190 0.420 0.680 0.370 0.110 0.350 -0.020 0.110 EV 513 1964 0.010 -0.020 0.010 -0.020 0.230 0.430 0.480 0.080 0.110 0.310 0.030 -0.140 EVA10200 1965 -0.043 -0.111 0.042 0.254 -0.106 0.254 0.438 0.446 0.139 0.274 0.032 -0.018 EVB10170 -0.015 1965 -0.129 -0.234 0.329 -0.216 0.218 0.546 0.437 0.072 0.283 0.087 -0.106 EVB10070 -0.146 -0.240 1965 -0.030 0.346 -0.212 0.206 0.552 0.426 0.070 0.296 0.096 -0.135 EVF10005 1965 -0.161 -0.246 -0.036 0.373 -0.254 0.221 0.600 0.441 0.070 0.311 0.105 -0.181 EVA10340 1965 -0.063 -0.168 0.033 0.297 -0.206 0.256 0.551 0.482 0.072 0.253 0.054 -0.034

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cyp03 pit129.EVA EVA10240 1965 -0.073 -0.175 0.023 0.300 -0.192 0.242 0.537 0.468 0.071 0.257 0.058 -0.040 EVB10040 -0.151 -0.242 -0.032 1965 0.356 -0.227 0.211 0.569 0.431 0.070 0.301 0.099 -0.152 EVB10270 0.311 -0.186 1965 -0.102 -0.204 0.001 0.220 0.526 0.443 0.071 0.270 0.073 -0.067 -0.040 EVQAD412 -0.100 1965 0.000 0.060 0.290 0.250 0.240 0.530 0.500 0.060 0.020 0.010 EVOAD413 1965 -0.100 -0.220 -0.010 0.260 -0.080 0.160 0.400 0.380 0.070 0.250 0.070 0.010 -0.260 0.290 EVQAD512 1965 -0.070 0.060 -0.390 0.340 0.640 0.540 0.090 0.240 0.060 -0.040 EV 513 1965 -0.170 -0.250 -0.040 0.390 -0.280 0.230 0.070 0.630 0.450 0.320 0.110 -0.210 -0.125 -0.111 EVA10200 0.251 0.025 0.162 0.493 0.299 0.071 0.124 0.153 0.089 -0.136 -0.210 EVB10170 1966 -0.164 -0.126 0.273 0.312 0.544 0.369 0.013 0.063 0.120 0.107 -0.208 EVB10070 1966 -0.173 -0.1140.280 -0.195 0.367 0.563 0.378 0.039 0.080 0.119 0.093 -0.221 1966 -0.177 -0.105 EVF10005 0.286 -0.235 0.449 0.579 0.428 0.076 0.092 0.144 0.103 -0.196 EVA10340 1966 -0.148 -0.190 0.262 -0.105 0.171 0.490 0.361 -0.035 0.023 0.142 0.171 -0.141 EVA10240 1966 -0.152 -0.180 0.264 -0.096 0.185 0.499 -0.031 0.031 0.131 0.350 0.155 -0.161 EVB10040 -0.175 -0.111 0.282 0.084 1966 -0.210 0.397 0.569 0.396 0.052 0.128 0.097 -0.212 EVB10270 1966 -0.160 -0.152 0.269 -0.131 0.239 0.522 0.344 -0.013 0.048 0.116 0.122 -0.199 EVOAD412 -0.040 1966 -0.160 -0.270 0.270 0.290 0.080 0.460 0.330 0.020 0.150 0.220 -0.100 EVQAD413 -0.160 -0.140 0.260 -0.070 0.110 0.510 0.220 -0.080 0.040 0.040 0.060 1966 -0.300 EVOAD512 -0.110 1966 -0.160 0.240 -0.560 0.180 0.470 0.450 -0.060 -0.020 0.190 0.210 -0.070 EV 513 1966 -0.180 -0.100 0.290 -0.260 0.500 0.590 0.460 0.100 0.100 0.160 0.110 -0.180

cyp03 pit129.EVA EVA10200 1967 0.095 0.053 0.218 0.007 -0.106 0.407 0.212 0.437 0.146 0.147 0.066 -0.142 EVB10170 1967 0.094 0.044 0.266 -0.027 -0.241 0.436 0.245 0.465 0.116 0.151 0.105 -0.295 EVB10070 1967 0.087 0.040 0.276 -0.024 -0.279 0.240 0.456 0.441 0.156 0.205 0.110 -0.313 EVF10005 0.089 1967 0.046 0.303 -0.009 -0.316 0.514 0.246 0.477 0.177 0.251 0.122 -0.311 EVA10340 1967 0.113 0.064 0.241 -0.004 -0.107 0.474 0.238 0.489 0.009 0.031 0.106 -0.172 EVA10240 1967 0.107 0.057 0.240 -0.009 -0.126 0.449 0.235 0.476 0.031 0.104 0.053 -0.194 EVB10040 1967 0.087 0.042 -0.019 0.286 -0.292 0.467 0.242 0.464 0.164 0.222 0.114 -0.313 EVB10270 1967 0.097 0.047 -0.022 0.246 -0.184 0.417 0.235 0.459 0.081 0.101 0.106 -0.252 EVQAD412 1967 0.110 0.070 0.210 0.050 0.020 0.490 0.180 0.460 -0.020 0.030 0.120 -0.010 EVQAD413 1967 0.080 0.020 0.190 -0.070 -0.160 0.210 0.220 0.390 0.090 0.060 0.070 -0.320 EVOAD512 1967 0.150 0.090 0.280 -0.030 -0.130 0.590 0.320 0.590 -0.090 -0.100 0.100 -0.220 EV 513 1967 0.090 0.050 0.320 0.000 -0.340 0.560 0.250 0.490 0.190 0.280 0.130 -0.310 EVA10200 1968 -0.026 -0.166 0.045 -0.028 0.055 0.086 0.236 0.389 -0.008 0.195 -0.190 0.035 EVB10170 -0.270 1968 0.028 0.049 -0.065 -0.104 0.272 0.052 0.389 -0.173 0.120 -0.246 0.001 EVB10070 1968 -0.302 0.072 -0.092 0.024 -0.073 0.062 0.266 0.373 -0.212 0.103 -0.256 -0.010 EVF10005 1968 -0.350 -0.003 0.120 -0.122 0.015 0.275 0.104 0.389 -0.242 0.113 -0.265 -0.016 EVA10340 -0.216 1968 0.016 -0.059 0.066 -0.037 0.029 0.270 -0.065 0.440 0.207 -0.207 0.037 EVA10240 1968 -0.220 -0.052 0.024 0.049 -0.058 0.022 0.265 0.422 -0.085 0.187 -0.213 0.030 EVB10040 1968 -0.319 0.014 -0.103 0.089 -0.041 0.077 0.269 0.379 -0.223 0.107 -0.259 -0.012

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cyp03 pit129.EVA EVB10270 1968 -0.239 0.035 -0.012 -0.007 -0.101 0.025 0.263 0.393 -0.133 0.143 -0.230 0.014 -0.230 EVOAD412 1968 -0.220 0.000 -0.020 0.240 0.190 0.220 0.430 -0.020 0.290 -0.170 0.060 1968 -0.150 EVOAD413 0.110 -0.080 0.000 -0.350 -0.070 0.240 0.320 -0.120 0.070 -0.230 0.010 EVQAD512 1968 -0.180 -0.010 0.080 -0.020 -0.170 0.110 0.230 -0.210 0.350 0.550 0.000 0.050 EV 513 1968 -0.380 -0.020 0.150 -0.140 0.070 0.130 0.280 0.400 -0.260 0.120 -0.270 -0.020 EVA10200 1969 0.021 -0.003 0.041 0.106 0.416 0.068 0.476 0.511 0.274 0.067 -0.071 -0.144 EVB10170 1969 0.003 -0.021 -0.003 0.089 0.447 0.006 0.104 0.548 0.518 0.258 -0.205 -0.242 -0.032 EVB10070 1969 0.008 -0.016 0.078 0.126 0.449 0.536 0.523 0.256 0.016 -0.252 -0.238 EVF10005 1969 -0.062 -0.049 0.064 0.036 0.135 0.480 0.551 0.521 0.265 0.025 -0.306 -0.208 EVA10340 -0.025 0.001 0.040 1969 0.048 0.095 0.450 0.590 0.515 0.252 -0.013 -0.039 -0.191 0.519 0.250 -0.009 EVA10240 1969 0.027 -0.021 0.005 0.102 0.054 0.440 0.576 -0.060 -0.204 -0.043 EVB10040 1969 0.028 -0.028 0.063 0.129 0.460 0.541 0.523 0.259 0.019 -0.271 -0.227 EVB10270 -0.004 -0.014 0.009 0.084 0.432 0.522 0.000 -0.129 1969 0.107 0.552 0.250 -0.232 EVQAD412 -0.070 -0.020 0.020 0.000 1969 0.100 0.100 0.420 0.590 0.550 0.220 0.130 -0.090 EVQAD413 -0.170 0.060 0.090 0.210 0.100 0.350 0.490 0.530 0.230 -0.010 -0.080 1969 -0.330 EVOAD512 1969 0.100 0.000 0.000 0.050 -0.020 0.530 0.670 0.460 0.300 -0.050 -0.090 -0.230 EV 513 1969 -0.080 -0.070 0.140 0.500 0.030 0.100 0.010 0.560 0.520 0.270 -0.340 -0.190 EVA10200 1970 0.077 -0.044 0.113 0.040 0.221 0.291 0.332 0.345 0.193 -0.057 0.043 0.040

0.292

0.335

0.167

-0.235

0.059

EVB10170

0.017

1970

0.101 - 0.153

0.082

0.019

0.274

0.268

					сур	03 pit129	9.EVA					
EVB10070 -0.003	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046
EVF10005 -0.007	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055
EVA10340 0.068	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112
EVA10240 0.055	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098
EVB10040 -0.005	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049
EVB10270 0.030	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071
EVQAD412 0.070	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140
EVQAD413 0.010	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020
EVQAD512 0.140	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.020	-0.280	0.160
EV 513 -0.010	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060
EVA10200 -0.278	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004
EVB10170 -0.285	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026
EVB10070 -0.261	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030
EVF10005 -0.236	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030
EVA10340 -0.388	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026
EVA10240 -0.374	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019
EVB10040 -0.252	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030
EVB10270 -0.330	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005
EVQAD412 -0.510	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120

cvp03 pit129.EVA EVQAD413 1971 0.070 -0.050 0.170 0.200 0.090 0.500 -0.240 0.120 0.270 0.060 -0.030 -0.340 EVQAD512 1971 0.200 0.060 0.330 0.300 0.190 0.550 0.140 0.280 0.210 -0.060 -0.030 -0.340 EV 513 1971 0.150 -0.040 0.240 0.250 0.200 0.470 0.090 0.130 0.200 0.120 -0.030 -0.220 EVA10200 1972 -0.038 0.171 0.202 0.206 0.210 0.246 0.299 0.440 0.114 -0.140 -0.176 -0.066 EVB10170 1972 -0.156 0.211 0.158 0.207 0.225 0.274 0.446 0.057 -0.245 0.268 -0.225 -0.136 EVB10070 1972 -0.182 0.210 0.187 0.207 0.276 0.138 0.053 -0.257 -0.240 0.240 0.446 -0.147 EVF10005 1972 -0.230 0.216 0.183 0.191 0.291 0.108 0.240 0.455 0.069 -0.259 -0.228 -0.143 EVA10340 1972 -0.078 0.208 0.254 0.265 0.271 0.213 0.452 0.379 0.067 -0.228 -0.155 -0.082 EVA10240 1972 -0.082 0.206 0.241 0.258 0.268 0.207 0.355 0.449 0.059 -0.235 -0.173 -0.094 1972 -0.199 EVB10040 0.185 0.201 0.281 0.127 -0.257 -0.236 0.212 0.240 0.449 0.059 -0.145 EVB10270 1972 -0.111 0.205 0.218 0.241 0.266 0.186 0.445 0.050 -0.244 -0.210 0.301 -0.120 EVOAD412 1972 0.010 0.180 0.240 0.270 0.260 0.250 0.460 0.040 -0.260 0.460 -0.110 -0.030 EVOAD413 1972 -0.030 0.190 0.260 0.230 0.230 0.420 0.000 -0.250 -0.280 0.200 0.240 -0.160 EVOAD512 1972 -0.140 0.250 0.340 0.300 0.300 0.210 0.430 0.460 0.140 -0.160 -0.100 -0.070 0.080 EV 513 1972 -0.260 0.220 0.180 0.180 0.300 0.090 0.240 0.460 -0.260 -0.220 -0.140 EVA10200 1973 -0.062 0.045 -0.047 -0.084 0.218 0.039 0.216 0.433 -0.130 -0.054 -0.005 0.015 EVB10170 -0.260 1973 -0.129 0.062 -0.081 -0.061 0.332 -0.074 0.159 0.460 -0.248 -0.001 0.016 EVB10070 1973 -0.140 0.069 -0.081 -0.036 0.349 -0.074 0.117 0.459 -0.251 -0.235 -0.014 0.007 EVF10005 1973 -0.152 0.094 -0.038 0.041 0.380 -0.065 0.094 0.484 -0.232 -0.189 0.019 0.009

cyp03 pit129.EVA EVA10340 1973 -0.097 0.051 -0.051 -0.090 0.275 -0.056 0.282 0.470 -0.274 -0.153 0.078 0.023 EVA10240 1973 -0.101 0.047 -0.069 -0.100 0.278 -0.060 0.258 0.460 -0.274 -0.171 0.053 0.018 EVB10040 1973 -0.144 0.078 -0.066 -0.008 0.360 -0.071 0.109 0.468 -0.244 -0.218 -0.002 0.007 EVB10270 -0.114 1973 0.048 -0.091 -0.100 0.300 -0.070 0.201 0.450 -0.271 -0.221 0.009 0.012 EVQAD412 1973 -0.070 0.030 -0.050 -0.110 0.200 -0.020 0.340 -0.270 0.450 0.090 0.130 -0.020 EVQAD413 1973 -0.100 -0.010 -0.220 -0.280 0.250 -0.100 0.190 0.380 -0.310 -0.380 -0.120 0.000 EVQAD512 1973 -0.100 0.090 0.040 -0.020 0.330 -0.070 0.360 0.540 -0.280 -0.310 0.160 0.100 EV 513 1973 -0.160 0.110 -0.010 0.090 0.400 -0.060 0.080 0.500 -0.220 -0.160 0.040 0.010 EVA10200 1974 -0.139 0.142 0.227 0.143 0.128 0.137 0.370 0.091 -0.208 0.076 -0.124 0.024 EVB10170 1974 -0.233 0.159 0.265 0.207 0.134 0.070 0.387 -0.331 -0.008 0.005 -0.119 0.061 EVB10070 1974 -0.263 0.150 0.266 0.197 0.136 0.057 0.356 -0.017 -0.343 0.000 -0.121 0.066 EVF10005 1974 -0.279 0.150 0.281 0.187 0.151 0.139 0.365 -0.019 -0.341 -0.006 -0.096 0.087 EVA10340 1974 -0.152 0.178 0.260 0.185 0.163 0.180 0.490 0.022 -0.330 0.020 -0.103 0.027 1974 -0.169 EVA10240 0.172 0.256 0.187 0.156 0.137 0.462 0.016 -0.336 0.018 -0.113 0.026 1974 -0.269 EVB10040 0.150 0.271 0.193 0.141 0.087 -0.017 -0.343 0.359 -0.002 -0.112 0.074 EVB10270 1974 -0.206 0.162 0.255 0.196 0.141 0.068 0.410 0.001 -0.340 0.012 -0.126 0.037 EVOAD412 1974 -0.130 0.170 0.230 0.090 0.220 0.240 0.520 0.040 -0.410 0.030 -0.110 -0.050 EVOAD413 1974 -0.210 0.150 0.220 0.230 0.090 -0.200 0.330 -0.010 -0.350 0.020 -0.200 0.000 EVQAD512 1974 -0.080 0.220 0.310 0.280 0.140 0.350 0.610 0.040 -0.210 0.020 -0.040 0.110

cyp03 pit129.EVA EV 513 1974 -0.290 0.150 0.290 0.180 0.160 0.190 -0.020 -0.340 0.370 -0.010 -0.080 0.100 EVA10200 1975 0.074 0.033 0.073 0.120 -0.021 0.171 0.357 0.316 0.303 0.286 -0.003 -0.022 EVB10170 1975 0.068 -0.051 0.342 0.080 0.103 0.009 0.110 0.354 0.299 0.218 -0.001 -0.037 EVB10070 1975 0.054 -0.073 0.070 0.097 0.009 0.094 0.346 0.343 0.303 0.194 -0.023 -0.041 EVF10005 1975 -0.077 0.039 0.070 0.087 0.034 0.079 0.373 0.359 0.319 0.173 -0.021 -0.022 EVA10340 1975 0.087 0.056 0.001 0.077 0.133 0.130 0.379 0.357 0.300 0.304 0.070 -0.020 EVA10240 1975 0.084 0.037 0.073 0.131 -0.006 0.126 0.364 0.351 0.296 0.291 0.052 -0.030 -0.075 EVB10040 0.049 1975 0.070 0.093 0.018 0.089 0.356 0.349 0.309 0.187 -0.023 -0.034 EVB10270 1975 -0.008 0.076 -0.014 0.072 0.119 0.117 0.346 0.340 0.293 0.253 0.016 -0.042 EVOAD412 1975 0.060 0.170 0.010 0.180 -0.050 0.100 0.350 0.370 0.300 0.380 0.090 -0.030 EVOAD413 1975 0.100 -0.060 0.070 -0.070 -0.030 0.130 0.140 0.260 0.290 0.250 0.260 -0.100 EVOAD512 1975 0.050 0.140 0.170 0.100 0.090 0.190 0.490 0.380 0.320 0.300 0.150 0.040 EV 513 -0.080 0.160 1975 0.030 0.070 0.080 0.050 0.070 0.390 0.370 0.330 -0.020 -0.010 EVA10200 1976 0.091 0.098 -0.118 0.059 -0.031 0.132 0.197 0.429 0.044 0.011 0.042 -0.045 -0.194 EVB10170 0.018 1976 0.087 0.098 -0.040 -0.034 0.160 0.385 -0.054 -0.030 0.071 -0.132 EVB10070 1976 -0.006 0.079 -0.217 0.127 -0.040 -0.054 0.141 0.364 -0.051 -0.018 0.060 -0.147 EVF10005 -0.021 0.098 -0.207 -0.040 1976 0.129 -0.045 0.110 0.337 -0.032 0.012 0.066 -0.143 EVA10340 1976 0.119 0.137 -0.127 0.001 -0.044 0.095 0.201 0.445 -0.043 -0.060 0.106 -0.049 EVA10240 0.102 1976 0.122 -0.148 0.023 -0.043 0.070 0.198 0.438 -0.049 -0.061 0.095 -0.066

					сур	03_pit12	9.EVA					
EVB10040 -0.145	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062
EVB10270 -0.106	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076
EVQAD412 0.040	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110
EVQAD413 -0.160	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040
EVQAD512 -0.050	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160
EV 513 -0.140	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070
EVA10200 0.093	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167
EVB10170 0.066	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176
EVB10070 0.053	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174
EVF10005 0.057	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147
EVA10340 0.124	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164
EVA10240 0.111	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173
EVB10040 0.055	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164
EVB10270 0.082	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184
EVQAD412 0.170	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160
EVQAD413 0.040	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260
EVQAD512 0.150	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120
EV 513 0.060	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.330	0.080	0.190	0.280	-0.130
EVA10200 -0.078	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371

cyp03 pit129.EVA EVB10170 1978 -0.242 -0.015 0.058 0.275 0.135 0.446 0.494 0.456 0.216 0.281 -0.414 -0.146 -0.004 EVB10070 1978 -0.263 0.059 0.137 0.453 0.276 0.481 0.447 0.207 0.264 -0.422 -0.167 EVF10005 1978 -0.273 0.011 0.084 0.297 0.139 0.463 0.456 0.431 0.197 0.255 -0.359 -0.169 EVA10340 -0.049 1978 -0.168 0.059 0.278 0.115 0.430 0.553 0.501 0.269 0.359 -0.355 -0.078 EVA10240 1978 -0.182 -0.045 0.051 0.271 0.118 0.431 0.549 0.497 0.263 0.346 -0.385 -0.094 EVB10040 1978 -0.267 0.001 0.068 0.261 -0.400 0.284 0.137 0.457 0.472 0.441 0.203 -0.167 EVB10270 1978 -0.216 -0.031 0.046 0.265 0.126 0.437 0.526 0.480 0.240 0.310 -0.426 -0.127 EVOAD412 1978 -0.110 -0.080 0.030 0.260 0.080 0.420 0.640 0.570 0.350 0.440 -0.360 -0.050 EVQAD413 1978 -0.230 -0.050 -0.020 0.210 0.130 0.420 0.560 0.500 0.240 0.290 -0.620 -0.160 0.430 EVOAD512 1978 -0.150 -0.040 0.130 0.140 0.330 0.490 0.450 0.220 0.350 -0.190 -0.020 EV 513 1978 -0.280 0.020 0.470 0.100 0.310 0.140 0.440 0.420 0.190 0.250 -0.320 -0.170 EVA10200 -0.081 1979 -0.142 0.012 0.043 -0.046 0.283 0.022 0.267 0.140 0.141 -0.007 -0.061 EVB10170 1979 -0.341 -0.140 -0.054 0.046 0.003 0.261 -0.053 0.286 0.022 0.128 -0.014 -0.099 EVB10070 1979 -0.392 -0.147 -0.061 0.045 0.025 0.239 -0.078 0.302 0.014 0.123 -0.046 -0.100 -0.137 EVF10005 1979 -0.446 -0.024 0.091 0.065 0.258 -0.042 0.350 0.005 0.146 -0.061 -0.100 EVA10340 -0.166 -0.099 0.023 0.089 -0.062 0.323 0.066 0.250 0.069 0.140 0.068 1979 -0.097 EVA10240 -0.190 -0.109 -0.058 1979 0.000 0.070 0.301 0.031 0.245 0.063 0.129 0.050 -0.098 0.040 EVB10040 1979 -0.411 -0.143 -0.048 0.062 0.246 -0.065 0.319 0.011 0.131 -0.051 -0.100 EVB10270 1979 -0.264 -0.131 -0.044 0.040 -0.034 0.265 -0.034 0.253 0.043 0.117 0.011 -0.099

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cyp03 pit129.EVA EVQAD412 1979 0.000 -0.060 0.100 0.120 -0.130 0.300 0.130 0.200 0.140 0.100 0.080 -0.100 EVOAD413 1979 -0.220 -0.180 -0.180 -0.100 -0.100 0.180 -0.190 0.150 0.040 0.050 0.000 -0.100 EVOAD512 1979 -0.200 -0.080 0.070 0.160 -0.020 0.470 0.190 0.320 0.030 0.240 0.160 -0.090 EV 513 -0.480 1979 -0.130 0.000 0.120 0.090 0.270 -0.020 0.380 0.000 0.160 -0.070 -0.100 EVA10200 1980 -0.074 0.115 0.112 0.100 0.034 0.282 0.582 0.589 0.115 0.167 0.003 0.076 EVB10170 1980 -0.077 0.160 0.067 0.111 0.062 0.300 0.654 0.597 0.152 0.111 -0.005 0.084 EVB10070 1980 -0.074 0.162 0.044 0.090 0.034 0.299 0.657 0.590 0.128 0.149 -0.013 0.090 EVF10005 1980 -0.047 0.192 0.035 0.078 0.013 0.330 0.659 0.584 0.197 0.174 -0.017 0.102 EVA10340 1980 -0.091 0.155 0.138 0.148 0.087 0.293 0.669 0.636 0.081 0.166 0.033 0.074 EVA10240 -0.097 1980 0.147 0.123 0.139 0.079 0.283 0.631 0.668 0.070 0.156 0.027 0.074 EVB10040 1980 -0.064 0.173 0.041 0.086 0.027 0.310 0.657 0.588 0.153 0.158 -0.015 0.094 EVB10270 1980 -0.096 0.143 0.089 0.121 0.067 0.279 0.661 0.614 0.071 0.143 0.010 0.076 EVQAD412 1980 -0.140 0.120 0.170 0.000 0.120 0.220 0.720 0.690 0.150 0.020 0.080 0.070 EVOAD413 1980 -0.160 0.070 0.070 0.130 0.100 0.200 0.650 0.610 -0.090 0.070 0.000 0.050 EVQAD512 1980 -0.010 0.230 0.190 0.230 0.230 0.420 0.620 0.610 0.200 0.240 0.020 0.080 ΕV 513 -0.030 1980 0.210 0.030 0.070 0.000 0.350 0.660 0.580 0.240 0.190 -0.020 0.110 EVA10200 1981 0.120 0.027 0.116 0.197 -0.223 0.246 0.247 0.337 0.317 -0.166 0.080 0.168 EVB10170 1981 0.099 -0.018 0.078 0.229 -0.308 0.127 0.256 0.271 0.236 -0.329 0.054 0.180 EVB10070 1981 0.094 -0.034 0.070 0.224 -0.314 0.117 0.245 0.243 0.217 -0.322 0.034 0.173

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cyp03 pit129.EVA 1981 0.085 -0.025 EVF10005 0.076 0.215 -0.281 0.107 0.291 0.253 0.201 -0.266 0.019 0.171 EVA10340 1981 0.124 0.054 0.123 0.237 -0.239 0.198 -0.256 0.332 0.385 0.307 0.143 0.202 0.121 EVA10240 1981 0.037 0.113 0.236 -0.260 0.190 0.357 0.296 0.304 -0.278 0.129 0.197 EVB10040 1981 0.091 -0.031 0.262 0.072 0.221 -0.302 0.113 0.247 0.211 -0.302 0.029 0.173 EVB10270 1981 0.111 0.000 0.090 0.234 -0.299 0.159 0.259 0.300 0.265 -0.321 0.090 0.187 0.230 -0.170 0.380 EVOAD412 1981 0.160 0.110 0.170 0.320 0.370 0.460 -0.120 0.240 0.210 EVOAD413 1981 0.120 -0.060 0.050 0.250 -0.420 0.150 0.100 0.210 0.270 -0.500 0.080 0.180 -0.200 0.250 0.290 EVOAD512 1981 0.100 0.090 0.130 0.120 0.440 0.460 -0.280 0.120 0.220 EV 513 1981 0.080 -0.020 0.080 -0.260 0.100 0.320 0.260 0.190 -0.230 0.010 0.210 0.170 EVA10200 -0.033 -0.018 0.158 0.057 0.071 0.068 0.311 0.341 0.368 0.032 1982 -0.335 -0.348 0.148 EVB10170 1982 -0.076 -0.050 0.001 -0.003 -0.050 0.371 0.343 -0.062 -0.393 0.368 -0.448 EVB10070 1982 -0.084 -0.057 0.143 -0.020 -0.011 -0.044 0.369 0.369 0.330 -0.077 -0.408 -0.491 0.336 -0.073 EVF10005 1982 -0.069 -0.047 0.141 -0.026 0.008 -0.011 0.388 0.394 -0.378 -0.466 EVA10340 1982 -0.034 -0.017 0.162 0.090 0.103 -0.007 0.358 0.362 0.390 -0.004 -0.334 -0.330 EVA10240 1982 -0.047 -0.027 0.159 0.073 0.083 -0.019 0.354 0.354 0.377 -0.018 -0.356 -0.369 EVB10040 -0.053 -0.022 -0.004 -0.032 0.376 0.378 0.332 -0.075 -0.397 1982 -0.079 0.143 -0.482 EVB10270 1982 -0.070 -0.045 0.153 0.032 0.031 -0.045 0.354 0.352 0.353 -0.047 -0.391 -0.435 0.280 EVOAD412 1982 -0.010 0.080 0.410 0.030 -0.330 0.000 0.170 0.170 0.320 0.290 -0.360 EVOAD413 1982 -0.130 -0.090 0.150 0.000 -0.070 -0.150 0.310 0.290 0.310 -0.090 -0.500 -0.570

cyp03 pit129.EVA EVQAD512 1982 0.010 0.020 0.170 0.030 -0.030 0.100 0.420 0.480 0.440 0.040 -0.220 -0.080 EV 513 1982 -0.060 -0.040 0.140 -0.030 0.020 0.010 0.400 0.410 0.340 -0.070 -0.360 -0.450 EVA10200 1983 0.067 -0.032 0.121 0.186 -0.057 0.143 0.294 0.345 0.375 0.158 -0.077 -0.145 EVB10170 1983 0.066 -0.166 0.114 0.248 -0.103 0.037 0.328 0.285 0.342 0.146 -0.131 -0.237 EVB10070 1983 0.056 -0.196 0.117 0.246 -0.113 0.036 0.325 0.277 0.333 0.146 -0.156 -0.266 EVF10005 1983 -0.223 0.065 0.119 0.279 -0.129 0.051 0.383 0.254 0.155 -0.165 0.331 -0.275 EVA10340 1983 0.093 -0.039 0.105 0.264 -0.076 0.081 0.386 0.312 0.377 0.132 -0.036 -0.150 EVA10240 1983 0.083 -0.057 0.106 0.251 -0.078 0.072 0.360 0.313 0.370 0.131 -0.054 -0.169 EVB10040 1983 -0.206 0.059 0.117 0.258 -0.119 0.041 0.346 0.269 0.333 0.149 -0.159 -0.269 EVB10270 1983 0.067 -0.112 0.110 0.236 -0.088 0.049 0.305 0.321 0.354 0.135 -0.099 -0.211 EVQAD412 1983 0.080 0.110 0.100 0.240 -0.050 0.160 0.420 0.360 0.410 0.090 0.040 -0.120 EVQAD413 1983 0.030 -0.110 0.110 -0.060 0.140 -0.010 0.140 0.350 0.340 0.120 -0.130 -0.240 EVQAD512 1983 0.160 -0.090 0.100 -0.090 0.360 0.050 0.490 0.260 0.380 0.180 -0.010 -0.070 EV 513 1983 0.070 -0.240 0.120 0.300 -0.140 0.060 0.420 0.240 0.330 0.160 -0.170 -0.280 EVA10200 1984 -0.005 -0.045 -0.010 0.207 0.062 0.397 0.223 0.327 0.193 -0.424 -0.068 -0.034 EVB10170 -0.170 1984 -0.022 -0.056 0.281 0.111 0.374 0.253 0.280 0.145 -0.163 -0.660 -0.049 EVB10070 -0.020 -0.197 -0.048 1984 0.285 0.115 0.373 0.238 0.262 0.125 -0.707 -0.196 -0.060 EVF10005 1984 -0.014 -0.193 0.006 0.331 0.173 0.377 0.294 0.292 0.165 -0.684 -0.205 -0.048 EVA10340 1984 -0.027 -0.026 -0.019 0.289 0.131 0.395 0.327 0.372 0.224 -0.484 -0.011 -0.023

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					сур	03_pit129	9.EVA					
EVA10240 -0.035	1984	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040
EVB10040 -0.056	1984	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199
EVB10270 -0.051	1984	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110
EVQAD412 -0.050	1984	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140
EVQAD413 -0.100	1984	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170
EVQAD512 0.070	1984	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010
EV 513 -0.040	1984	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210
EVA10200 -0.031	1985	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221
EVB10170 -0.067	1985	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337
EVB10070 -0.060	1985	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347
EVF10005 -0.048	1985	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343
EVA10340 -0.066	1985	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245
EVA10240 -0.067	1985	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260
EVB10040 -0.056	1985	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345
EVB10270 -0.069	1985	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303
EVQAD412 -0.040	1985	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100
EVQAD413 -0.100	1985	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360
EVQAD512 -0.090	1985	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310
EV 513 -0.040	1985	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340

cyp03 pit129.EVA EVA10200 1986 0.172 0.043 0.230 -0.076 0.012 0.055 0.403 0.429 0.130 -0.025 -0.234 -0.096 EVB10170 1986 0.194 0.058 0.280 -0.115 -0.054 -0.132 0.480 0.370 -0.015 -0.138 -0.364 -0.208 EVB10070 1986 0.190 0.063 0.285 -0.098 -0.056 -0.195 0.479 0.351 -0.028 -0.156 -0.393 -0.223 EVF10005 1986 0.184 0.061 0.325 -0.056 -0.071 -0.259 0.504 0.332 0.020 -0.177 -0.391 -0.227 EVA10340 1986 0.195 0.023 0.282 -0.109 -0.014 0.025 0.446 0.486 0.122 -0.097 -0.218 -0.123 EVA10240 1986 0.195 0.030 -0.115 0.271 -0.014 0.002 0.477 0.436 0.087 -0.102 -0.247 -0.138 EVB10040 1986 0.188 0.063 -0.083 -0.061 0.300 -0.218 0.488 0.344 -0.011 -0.164 -0.393 -0.225 EVB10270 1986 0.195 0.047 0.263 -0.124 -0.029 -0.065 0.469 0.403 0.013 -0.119 -0.317 -0.177 EVQAD412 1986 0.180 -0.020 0.260 -0.050 0.090 0.090 0.530 0.460 0.290 -0.080 -0.070 -0.020 EVQAD413 1986 0.210 0.070 0.160 -0.230 -0.010 0.010 0.400 0.410 -0.180 -0.090 -0.400 -0.210 EVQAD512 1986 0.210 0.030 0.360 -0.140 -0.120 0.100 0.560 0.420 0.140 -0.080 -0.210 -0.150 EV 513 1986 0.180 0.060 -0.030 0.350 -0.080 -0.300 0.320 0.520 -0.190 0.050 -0.390 -0.230 EVA10200 1987 -0.120 0.030 0.244 0.312 0.034 0.120 0.231 0.442 0.181 0.112 -0.357 -0.220 EVB10170 1987 0.027 -0.283 0.393 0.362 0.045 0.066 0.228 0.434 0.133 0.065 -0.538 -0.352 EVB10070 1987 0.026 -0.316 0.390 0.389 0.074 0.038 0.213 0.417 0.127 0.053 -0.591 -0.377 EVF10005 1987 0.047 -0.337 0.408 0.402 0.065 0.008 0.413 0.229 0.076 -0.572 0.129 -0.367 EVA10340 1987 0.038 -0.134 0.237 0.402 0.015 0.029 0.289 0.482 0.138 0.115 -0.305 -0.240 EVA10240 1987 0.030 -0.158 0.256 0.395 0.027 0.037 0.271 0.471 0.134 0.097 -0.359 -0.266 EVB10040 1987 0.034 -0.324 0.396 0.394 0.071 0.027 0.219 0.415 0.127 0.061 -0.584 -0.373

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cyp03 pit129.EVA EVB10270 1987 0.020 -0.225 0.312 0.388 0.052 0.049 0.237 0.447 0.130 0.068 -0.475 -0.322 EVQAD412 0.030 0.030 1987 0.090 0.380 -0.040 -0.010 0.310 0.490 0.110 0.120 -0.120 -0.150 -0.250 0.100 EVQAD413 -0.040 1987 0.330 0.350 0.130 0.160 0.430 0.120 -0.020 -0.650 -0.410 0.280 0.030 EVOAD512 1987 0.090 -0.170 0.460 0.010 0.190 0.210 0.370 0.540 -0.200 -0.190 EV 513 1987 0.060 -0.350 0.420 0.410 0.060 -0.010 0.240 0.410 0.130 0.090 -0.560 -0.360 0.191 0.328 EVA10200 1988 0.147 0.035 0.044 0.446 0.157 0.233 0.305 -0.009 -0.335 -0.085 EVB10170 1988 0.197 0.029 0.031 0.247 0.424 0.445 0.240 0.203 0.312 -0.075 -0.353 -0.172 0.199 0.020 0.027 EVB10070 1988 0.249 0.433 0.446 0.252 0.166 0.323 -0.087 -0.352 -0.190 EVF10005 1988 0.218 0.020 0.029 0.455 0.268 0.449 0.306 0.193 0.339 -0.083 -0.277 -0.190 EVA10340 0.181 0.047 0.028 0.407 0.274 1988 0.243 0.457 0.191 0.305 -0.055 -0.314 -0.094 0.025 0.453 EVA10240 1988 0.177 0.041 0.238 0.407 0.184 0.269 0.278 -0.064 -0.342 -0.111 0.256 EVB10040 1988 0.206 0.020 0.027 0.439 0.449 0.271 0.176 0.329 -0.085 -0.325 -0.190 0.293 EVB10270 0.181 0.032 0.026 0.236 0.413 0.447 0.195 0.211 -0.076 -0.376 1988 -0.148 EVQAD412 1988 0.130 0.030 -0.010 0.220 0.400 0.480 0.070 0.270 0.230 -0.090 -0.330 -0.030 EVOAD413 1988 0.140 0.020 0.020 0.190 0.380 0.420 0.080 0.080 0.270 -0.100 -0.590 -0.190 EVOAD512 0.450 0.300 0.030 1988 0.250 0.100 0.080 0.290 0.410 0.350 0.540 -0.150 -0.070 EV 513 1988 0.230 0.020 0.030 0.280 0.460 0.210 0.350 -0.080 0.460 0.340 -0.230 -0.190 EVA10200 1989 -0.064 -0.007 -0.002 0.230 -0.092 0.053 0.048 0.274 0.284 0.217 0.139 0.109 EVB10170 1989 -0.137 -0.096 -0.119 0.303 -0.087 -0.250 0.057 0.233 0.274 0.175 0.167 0.087

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					сур	03 pit12	9.EVA					
EVB10070 0.070	1989	-0.163	-0.110	-0.153	0.309	-0.064		0.042	0.216	0.273	0.167	0.154
EVF10005 0.058	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145
EVA10340 0.136	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213
EVA10240 0.127	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205
EVB10040 0.066	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151
EVB10270 0.105	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184
EVQAD412 0.160	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250
EVQAD413 0.110	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180
EVQAD512 0.160	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220
EV 513 0.050	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140
EVA10200 -0.100	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175
EVB10170 -0.123	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206
EVB10070 -0.121	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227
EVF10005 -0.084	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229
EVA10340 -0.109	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154
EVA10240 -0.121	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168
EVB10040 -0.108	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227
EVB10270 -0.136	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194
EVQAD412 -0.120	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160

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cyp03 pit129.EVA -0.290 -0.220 EVOAD413 1990 -0.340 -0.130 -0.320 0.040 -0.210 0.250 0.140 0.390 0.030 -0.240 EVOAD512 -0.410 0.080 -0.100 -0.040 1990 0.260 0.410 0.330 0.440 0.120 0.070 -0.070 -0.030 EV 513 1990 -0.4200.040 -0.030 0.220 -0.110 0.070 0.360 0.190 0.310 -0.100 -0.230 -0.060 EVA10200 0.264 0.193 -0.010 -0.083 1991 0.002 -0.017 0.162 -0.276 -0.009 0.294 0.228 0.009 EVB10170 0.159 -0.465 1991 -0.067 -0.042 0.001 0.174 0.278 0.129 0.114 -0.070 -0.122 -0.189 EVB10070 0.250 1991 -0.077 -0.053 0.146 -0.540 -0.033 0.154 0.100 0.099 -0.059 -0.147 -0.219 EVF10005 1991 -0.061 -0.051 0.155 -0.552 -0.043 0.133 0.262 0.100 0.118 0.020 -0.124 -0.256 0.009 EVA10340 -0.215 0.359 1991 -0.014 0.200 0.058 0.271 0.238 0.186 -0.032 -0.007 -0.015 EVA10240 1991 -0.009 -0.023 0.187 -0.270 0.040 0.259 0.334 0.214 0.165 -0.057 -0.038 -0.034 EVB10040 1991 -0.071 -0.053 0.149 -0.544 -0.037 0.147 0.254 0.106 -0.031 -0.139 0.100 -0.232 EVB10270 0.165 -0.391 0.290 1991 -0.048 -0.038 0.011 0.217 0.160 0.127 -0.089 -0.098 -0.108 EVOAD412 1991 0.100 -0.020 0.200 -0.090 -0.0100.400 0.350 0.310 0.230 0.010 0.070 0.260 0.120 0.210 0.100 -0.310 EVOAD413 1991 -0.130 -0.060 -0.500 0.000 0.220 0.040 -0.220 -0.100 EVOAD512 1991 0.010 0.040 0.270 -0.030 0.230 0.210 0.510 0.300 0.250 0.050 0.080 -0.190 0.070 EV 513 1991 -0.050 -0.050 0.160 -0.560 -0.050 0.120 0.270 0.100 0.130 -0.110 -0.280 EVA10200 1992 0.048 0.020 0.124 0.114 0.069 0.043 0.098 0.375 0.026 0.182 -0.178 -0.072 EVB10170 -0.075 0.051 -0.050 0.346 -0.061 0.048 1992 -0.011 0.107 0.154 0.242 -0.207 -0.130 EVB10070 1992 -0.099 -0.017 0.037 0.267 0.093 0.152 -0.064 0.337 -0.079 0.018 -0.227 -0.147 EVF10005

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-0.143

1992 -0.124 -0.013

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0.033 -0.031

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-0.012 -0.211

					cvp	03_pit12	9.EVA					
EVA10340 -0.072	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139
EVA10240 -0.087	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160
EVB10040 -0.145	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221
EVB10270 -0.116	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198
EVQAD412 -0.050	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130
EVQAD413 -0.160	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280
EVQAD512 -0.010	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030
EV 513 -0.140	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200
EVA10200 0.059	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054
EVB10170 0.027	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074
EVB10070 0.015	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103
EVF10005 0.055	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101
EVA10340 0.114	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020
EVA10240 0.087	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004
EVB10040 0.030	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103
EVB10270 0.038	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051
EVQAD412 0.190	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050
EVQAD413 -0.110	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110
EVQAD512 0.180	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120

cyp03 pit129.EVA ΕV 513 1993 -0.030 0.020 0.020 0.090 0.090 -0.320 0.670 0.360 0.250 -0.130 -0.100 0.080 EVA10200 1994 -0.051 -0.029 0.150 0.110 0.016 0.318 0.123 0.325 0.376 -0.172 0.003 -0.104 EVB10170 1994 -0.122 -0.127 0.097 0.168 -0.090 0.251 0.119 0.249 0.378 -0.453 0.006 -0.239 EVB10070 1994 -0.147 -0.153 0.373 0.093 0.160 -0.112 0.230 0.099 0.218 -0.483 0.011 -0.267 EVF10005 -0.131 -0.169 1994 0.116 0.160 -0.142 0.242 0.136 0.188 0.377 -0.506 0.078 -0.269 EVA10340 1994 -0.019 -0.026 0.171 0.152 0.018 0.347 0.192 0.335 0.383 -0.279 0.077 -0.108 EVA10240 1994 -0.046 -0.043 0.154 0.150 0.006 0.323 0.163 0.322 0.379 -0.303 0.051 -0.133 EVB10040 -0.141 -0.159 1994 0.101 0.160 -0.123 0.234 0.112 0.207 0.375 -0.491 0.035 -0.267 EVB10270 -0.088 1994 -0.100 0.116 0.155 -0.039 0.274 0.119 0.284 0.375 -0.380 0.006 -0.195 0.170 EVOAD412 1994 0.040 0.070 0.280 0.060 0.420 0.380 0.360 0.180 -0.030 0.180 0.030 EVQAD413 -0.200 1994 -0.100 0.020 0.160 -0.020 0.190 -0.020 0.360 0.310 -0.410-0.200 -0.260 EVOAD512 1994 0.070 -0.030 0.150 0.260 -0.070 0.400 0.360 0.370 0.430 -0.400 0.110 -0.110 EV 513 1994 -0.120 -0.180 0.120 0.130 0.160 -0.160 0.250 0.160 0.170 0.380 -0.520 -0.270 EVA10200 1995 0.150 0.055 0.130 -0.034 0.033 0.294 0.278 0.425 0.102 0.281 0.099 -0.051 EVB10170 1995 0.209 0.086 0.068 -0.103 0.033 0.283 0.289 0.397 0.062 0.261 0.141 -0.135 EVB10070 1995 0.216 0.096 0.057 -0.127 0.048 0.289 0.273 0.390 0.056 0.243 0.129 -0.175 EVF10005 1995 0.243 0.117 0.059 -0.111 0.104 0.326 0.277 0.396 0.077 0.259 0.148 -0.215 EVA10340 1995 0.183 0.054 0.009 0.057 0.289 0.140 0.337 0.444 0.063 0.333 0.191 -0.040 EVA10240 1995 0.055 0.180 0.126 -0.019 0.043 0.279 0.054 0.324 0.434 0.312 0.175 -0.056

cyp03\_pit129.EVA EVB10040 1995 0.226 0.104 0.057 -0.121 0.068 0.302 0.275 0.392 0.064 0.249 0.136 -0.190 EVB10270 1995 0.187 0.066 0.092 -0.076 0.023 0.269 0.299 0.410 0.273 0.047 0.146 -0.096 EVOAD412 1995 0.130 0.010 0.230 0.090 0.130 0.290 0.340 0.500 0.360 0.000 0.210 -0.020 EVQAD413 1995 0.130 0.030 -0.180 0.050 -0.130 0.170 0.260 0.370 -0.010 0.190 0.070 -0.050 EVQAD512 1995 0.250 0.090 0.120 0.080 0.050 0.340 0.410 0.440 0.180 0.420 0.260 0.030 EV 513 1995 0.260 0.130 0.060 -0.100 0.350 0.140 0.280 0.400 0.090 0.270 0.160 -0.240 EVA10200 1996 0.052 0.219 0.124 0.132 0.132 0.096 -0.031 0.064 0.001 0.098 -0.105 -0.007 EVB10170 1996 0.050 0.205 0.134 0.138 0.016 0.220 0.011 -0.035 -0.147 0.023 -0.165 -0.024 EVB10070 1996 0.040 0.190 0.123 0.130 0.231 -0.015 0.001 -0.041 -0.196 0.013 -0.179 -0.024 EVF10005 0.040 1996 0.202 0.146 0.142 0.031 0.304 0.062 -0.022 -0.217 0.036 -0.204 -0.015 EVA10340 1996 0.067 0.296 0.182 0.167 0.222 0.122 0.002 -0.017 0.025 0.089 -0.115 -0.022 EVA10240 1996 0.060 0.275 0.151 0.169 0.203 0.084 -0.002 -0.010 -0.046 0.070 -0.118 -0.025 EVB10040 1996 0.194 0.131 0.040 0.134 0.257 0.002 0.023 -0.034 -0.204 0.021 -0.188 -0.021 EVB10270 1996 0.051 0.230 0.129 0.146 0.188 0.020 -0.022 -0.032 -0.108 0.034 -0.137 -0.028 EVQAD412 1996 0.040 0.390 0.140 0.210 0.190 0.150 -0.130 0.030 0.000 0.140 -0.050 -0.030 EVOAD413 0.040 1996 0.150 0.050 0.090 0.000 -0.160 -0.100 -0.190 -0.130 -0.060 -0.100 -0.050 EVQAD512 1996 0.130 0.310 0.280 0.220 0.300 0.350 0.330 0.040 0.130 0.140 -0.160 0.000 EV 513 1996 0.040 0.210 0.150 0.160 0.350 0.060 -0.010 -0.230 0.100 0.050 -0.220 -0.010 EVA10200 1997 0.012 -0.120 -0.110 0.120 0.156 0.085 0.334 0.207 0.333 -0.089 -0.117 -0.112

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cyp03 pit129.EVA EVB10170 1997 -0.054 -0.203 0.083 -0.263 0.161 0.077 0.344 0.140 0.277 -0.217 -0.143 -0.203 EVB10070 -0.067 -0.210 1997 0.062 -0.310 0.069 0.159 0.320 0.126 0.266 -0.247 -0.161 -0.217 EVF10005 1997 -0.069 -0.204 0.092 -0.298 0.094 0.190 0.332 0.135 0.293 -0.237 -0.142 -0.201 EVA10340 0.009 1997 -0.144 0.182 -0.057 0.152 0.130 0.433 0.191 0.360 -0.115 -0.068 -0.119 EVA10240 -0.143 -0.002 -0.156 1997 0.153 -0.104 0.142 0.113 0.409 0.177 0.338 -0.090 -0.140 EVB10040 -0.067 -0.208 0.129 0.276 -0.243 -0.154 1997 0.073 -0.306 0.170 0.078 0.324 -0.211 EVB10270 1997 -0.032 -0.184 0.099 -0.206 0.138 0.083 0.363 0.150 0.293 -0.195 -0.130 -0.183 EVOAD412 0.240 0.210 -0.080 1997 0.080 -0.060 0.100 0.070 0.170 0.470 0.440 -0.030 -0.040 EVOAD413 1997 -0.060 -0.230 -0.030 -0.350 0.060 -0.010 0.280 0.100 0.180 -0.280 -0.220 -0.270 EVQAD512 1997 0.000 -0.170 0.280 0.040 0.290 0.180 0.530 0.250 0.400 0.000 0.010 -0.090 -0.070 0.110 EV 513 1997 -0.200 0.110 -0.290 0.210 0.340 0.140 0.310 -0.230 -0.130 -0.190 EVA10200 1998 -0.119 -0.101 0.198 0.222 0.178 0.467 0.471 0.321 -0.072 -0.058 -0.056 0.008 EVB10170 -0.187 -0.160 1998 0.198 0.282 0.230 0.479 0.529 0.261 -0.281 -0.212 -0.161 -0.053 EVB10070 1998 -0.179 -0.178 0.188 0.276 0.222 0.476 0.515 0.242 -0.324 -0.200 -0.169 -0.073 0.270 EVF10005 1998 -0.118 -0.148 0.146 0.285 0.503 0.561 0.284 -0.309 -0.188 -0.194 -0.096 EVA10340 1998 -0.137 -0.079 0.185 0.289 0.292 0.514 0.619 0.379 -0.097 -0.181 -0.079 0.003 EVA10240 -0.158 -0.105 1998 0.195 0.283 0.266 0.500 0.588 0.344 -0.140 -0.183 -0.083 -0.004 EVB10040 1998 -0.157 -0.167 0.173 0.279 0.239 0.486 0.532 0.257 -0.319 -0.196 -0.178 -0.081 EVB10270 1998 -0.191 -0.150 0.208 0.277 0.478 0.227 0.536 0.280 -0.232 -0.197 -0.115 -0.027

					сур	03_pit129	9.EVA					
EVQAD412 0.040	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100
EVQAD413 0.000	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090
EVQAD512 0.010	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240
EV 513 -0.110	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210

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cyp03\_pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INOAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 

cyp03\_pit129.FLO

TNE10000	1958	100760	46101	40000	122422	cypos_pi			4020	10710	12222	0104	15010
INE10000 INF10000	1958	406688	46191 163390	48988 220487	122422	258968 1006168	29587 162859	35359 168828	4028 33292	10719 53686	12323 50017	8184 51627	15019 69190
INQAD412	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1958	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1958	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1959	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1959	3592	22580	30981	30696	8110	3717	5523	1692	1389	1301	2868	35067
INB10000	1959	16004	70047	83001	112234	45291	27214	14969	8320	3473	4950	6289	55152
INC10000	1959	8250	28915	33924	58852	39468	24297	6599	3481	979	2168	2996	21731
IND10000	1959	7919	27755	32564	56492	37885	23322	6334	3342	940	2081	2876	20859
INE10000	1959	14124	49503	58080	100758	67571	41597	11298	5960	1676	3711	5129	37204
INF10000	1959	56674	219242	258433	401439	224948	137495	48534	26229	9050	15991	21286	168474
INQAD412	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1959	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1959	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1960	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1960	64111	25252	25532	4205	3388	8325	12483	504	5546	5487	5374	70491
INB10000	1960	155989	56577	91723	18213	17439	10582	31757	753	8254	16378	17132	210302
INC10000	1960	61651	30869	52451	10422	7095	4185	2060	187	967	4143	8345	121797
IND10000	1960	59179	29631	50348	10004	6810	4017	1977	180	928	3977	8010	116913
INE10000	1960	105550	52850	89800	17843	12147	7164	3527	321	1655	7093	14287	208524
INF10000	1960	477262	207177	345514	68636	54167	32386	55145	1863	16062	40778	58721	798350
INQAD412	1960	100	100	100	100	100	100	100	100	100	100	100	100
INOAD413	1960	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1960	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1961	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1961	34285	30639	35695	14373	3950	19421	7537	1591	1699	1114	12849	34310
INB10000	1961	84572	91522	116979	61979	19411	44289	34486	2032	3308	4762	19562	107170
INC10000	1961	52864	47946	57301	52215	7961	11581	23998	1878	3648	4119	11233	55312
IND10000	1961	50744	46023	55003	50121	7642	11116	23035	1803	3502	3953	10783	53094
INE10000	1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697
INF10000	1961	336605	327172	402232	300644	60550	111783	147035	10521	19496	23527	73876	379781
INQAD412	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD412 INQAD413	1961	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413 INQAD512	1961	100	100	100	100	100	100	100	100	100	100	100	100
TINÓNDETS	1301	TOO	TAA	100	100	100	100	100	100	100	100	TAA	100

cyp03 pit129.FLO IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INOAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INOAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 

cyp03 pit129.FLO INE10000 INF10000 INOAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 2482 178898 IND10000 INE10000 INF10000 30821 1117124 INQAD412 INQAD413 INQAD512 ΙN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 IN INA10000 INB10000 INC10000 IND10000 INE10000 INF10000 INQAD412 INQAD413 INQAD512 

TN 542	4040					cyp03_pi	t129.FL0						
IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1969	9862	71203	68764	34682	64871	2377	608	359	356	395	2048	4942
INB10000	1969	26700	141236	157880	114767	114352	11219	608	683	3271	751	12770	28641
INC10000	1969	15590	46757	66884	75155	35604	6193	177	7	2	6	8176	15521
IND10000	1969	12224	56748	75881	57363	35774	3775	197	0	9	ø	5324	15430
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	8065	18077
INF10000	1969	97361	373614	546786	462407	311753	37727	1786	1046	4880	1134	42842	91910
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1970	8790	17815	55225	41060	6893	3566	673	597	262	1566	1983	1733
INB10000	1970	38886	43529	126894	93678	32796	14829	3576	916	678	1809	8287	9724
INC10000	1970	36824	24865	53935	28189	22029	14220	2233	467	254	898	4520	4697
IND10000	1970	28773	20003	54323	35341	15269	2731	253	0	274	1453	3388	2517
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	336	312	1540	6689	5843
INF10000	1970	179943	145320	382337	235549	144848	50460	13721	2539	1838	6271	28792	29924
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1971	2661	7903	6276	1956	1490	294	5324	2912	224	582	4790	47949
INB10000	1971	14069	19441	17139	9723	3632	401	6208	13993	224	2355	5612	71949
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580
IND10000	1971	2586	5109	6226	3161	1631	54	721	2611	0	225	2571	20267
INE10000	1971	6234	9192	12339	6995	3765	254	767	3209	444	273	2617	20207
INF10000	1971	38969	55657	62549	34250	20448	1537	10498	32324	1630	4425	14908	160873
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100	100873
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1972	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1972	35778	9851	7109	2513	1692	5897	11293	398	0	2635	12900	22253
INB10000	1972	79469	29439	24340	12145	4433	9308	11293	398	8259	2635	30463	51060
INC10000	1972	32462	16336	10713	7863	6312	695	489	99	506	2189	18942	31893
IND10000	1972	44226	13021	8530	3954	2374	3379	353	0	497	2201	12034	23601
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INE10000	1979	68957	52198	87681	168728	122150	36226	17277	35301	55955	15810	25167	43596
INF10000	1979	293805	187274	419217	580681	378453	135681	64296	178024	212478	39450	96057	181826
INQAD412	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1979	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1979	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1980	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1980	53071	29725	17586	45364	39960	3877	0	0	2649	1518	1786	5547
INB10000	1980	126757	77108	59289	108543	75932	17295	0	0	3311	5563	6823	10895
INC10000	1980	55729	42670	30979	48528	35624	8831	692	29	28	916	4269	6494
IND10000	1980	43734	41024	26885	41703	36805	4408	243	0	0	708	1374	2148
INE10000	1980	98383	88464	41292	74496	72221	9671	772	0	0	685	2406	3809
INF10000	1980	414764	307515	194277	341961	271388	52863	2162	43	4931	10579	19933	31304
INQAD412	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1980	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1980	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1981	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1981	2689	7604	9699	1530	48644	92577	8942	0	0	26846	9591	1677
INB10000	1981	8939	15943	25752	11344	100836	144608	8942	0	0	37274	16622	7752
INC10000	1981	6541	8667	13465	7289	45600	45539	3305	267	324	10430	8629	7489
IND10000	1981	2317	3696	7684	3697	38040	38572	4016	300	40	4272	5387	5102
INE10000	1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7594	10941
INF10000	1981	28913	45241	74018	39160	282497	364854	27127	1510	1639	76747	48503	38663
INQAD412	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1981	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1981	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1982	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1982	7152	13787	14215	17450	49290	28343	4103	0	0	0	8920	102460
INB10000	1982	18892	30960	30526	33162	81879	35067	4659	0	0	0	15955	164549
INC10000	1982	10787	23282	<b>1</b> 5937	15645	20075	17458	5408	1617	4	0	2430	619 <b>0</b> 6
IND10000	1982	6995	12869	12884	8877	11579	2221	1367	0	0	34	2161	32555
INE10000	1982	10636	24253	21939	14184	21720	5489	3275	313	0	29	2156	57993
INF10000	1982	59532	115915	101010	93020	182631	85672	19702	2851	5	43	30334	420051
INQAD412	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1982	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1982	100	100	100	100	100	100	100	100	100	100	100	100

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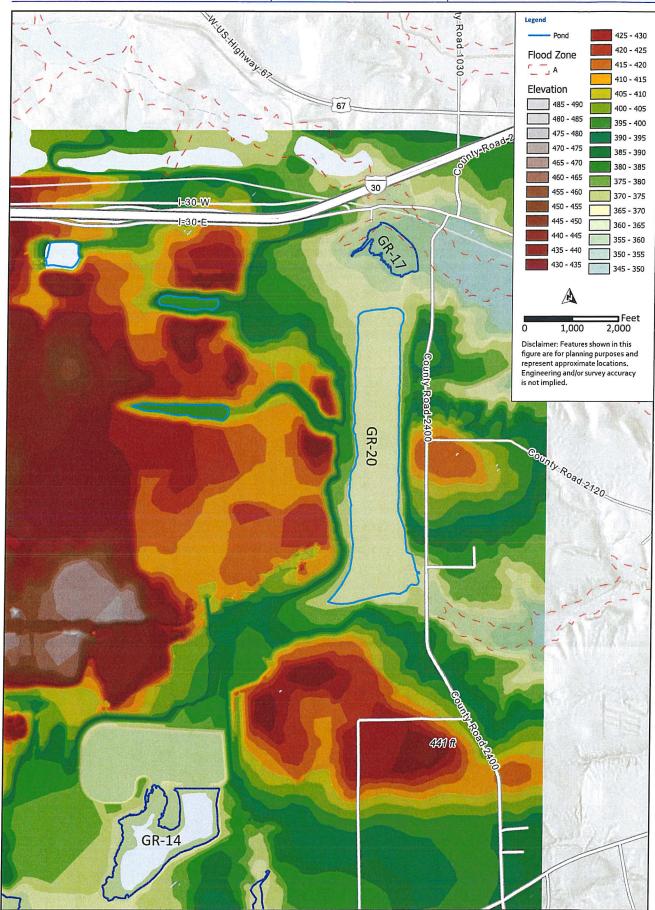
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INE10000	1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	21639	15661
INF10000	1993	483274	233388	399517	196845	111821	176598	19599	11926	3509	193964	84101	104301
INQAD412	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1993	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1993	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1994	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1994	14521	37547	41106	11205	20128	5360	28275	0	0	19406	65106	76704
INB10000	1994	34066	88084	96434	26288	47219	12573	66332	0	0	45526	152736	179946
INC10000	1994	17832	38992	46845	16024	25159	29823	23390	1794	514	25408	44849	70600
IND10000	1994	10971	36397	35467	8674	17011	0	20721	0	0	13125	40261	72924
INE10000	1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523
INF10000	1994	100005	257725	347790	108697	168819	77121	176987	5622	<b>172</b> 3	163872	369013	533198
INQAD412	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1994	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1994	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1995	72221	8138	24730	49422	46270	5872	2882	71	316	0	0	1399
INB10000	1995	169429	19093	58015	115942	108548	13774	6762	166	740	0	0	3282
INC10000	1995	86675	35166	33980	46460	52865	7381	3830	243	523	329	966	4044
IND10000	1995	54302	20107	16345	51746	39960	8070	3279	655	498	857	596	786
INE10000	1995	110561	57811	46682	84669	61351	12427	4813	608	665	825	1636	4209
INF10000	1995	541463	165495	204787	364854	328958	49592	22748	1501	2848	1704	3843	17034
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1996	4795	2678	3259	6685	2478	4493	1137	8848	6956	12454	28555	26864
INB10000	1996	11249	6283	7646	15683	5812	10540	2667	20757	16318	29216	66990	63022
INC10000	1996	6472	4000	6638	10147	4472	7786	1542	5188	11529	21123	24489	40490
IND10000	1996	2428	2416	3330	4140	3759	4164	410	1721	2643	3442	8501	21277
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	33922	21287	27852	49708	22230	41186	8462	46250	71112	106468	163947	232805
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100
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IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1997	19718	84766	59257	73556	14927	25331	9426	3203	0	1699	4996	20292
INB10000	1997	46259	198858	139016	172560	35018	59425	22113	7515	ø	3986	11721	47604
INC10000	1997	34726	74263	69844	67281	53779	34287	7765	1238	96	1734	7715	21475
IND10000	1997	20358	83597	60259	62467	35476	15273	14738	5202	1005	4075	5063	32643
INE10000	1997	48119	138138	123156	62596	90294	31642	27906	5202	1021	4088	7181	32654
INF10000	1997	190650	607314	490294	446614	264467	185113	85331	20608	1649	14483	39307	150230
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1998	100	100	100	100	100	100	100	100	100	100	100	100
INA10000	1998	60894	39273	29136	10891	361	0	0	0	12114	15658	13922	100
INB10000	1998	142855	92133	68352	25550	847	0	ø	0	28419	36732	32660	38400
INC10000	1998	59944	48938	44590	16678	3608	102	ø	0	12752	21081	19833	90087
IND10000	1998	78855	50112	38323	10245	2418	732	0	0	14059	18101	21884	42941
INE10000	1998	141708	78165	69530	21772	4050	906	0	50	13991	43164	39459	45247
INF10000	1998	508739	323750	269460	94510	12558	1490	0	73	81459	149115		70919
INQAD412	1998	100	100	100	100	100	100	100	100	100	100	135787	301173
INQAD413	1998	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1998	100	100	100	100	100	100	100	100	100	100	100	100
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# DEVELOPMENT AGREEMENT BETWEEN LUMINANT GENERATION COMPANY LLC, LUMINANT MINING COMPANY LLC, AND NORTHEAST TEXAS MUNICIPAL WATER DISTRICT

**DATED JUNE 7, 2021** 

#### TABLE OF CONTENTS

RECIT	ALS	5
	ON 1. AUTHORITY, CONSIDERATION, TERM	
1.1.	Authority	7
1.2.	Consideration	7
1.3.	Effective Date	7
1.4.	Term	7
SECTION	ON 2. PROJECT; RIGHTS AND RESPONSIBILITIES; REPRESENTATI	IONS8
2.1.	Project	
2.2.	Luminant's Rights and Responsibilities	8
2.3.	NETMWD's	11
SECTION	ON 3. RECLAMATION, DISCLAIMER; DISCLOSURES RELATED TO	THE
PITS		13
3.1.	Reclamation Standards and Requirements	13
3.2.	Environmental Disclaimer	13
3.3.	Disclosures	13
3.4.	No Indemnification	14
SECTION	ON 4. CONDITIONS TO CLOSE	14
SECTION	ON 5. CLOSING; REPRESENTATIONS & COVENANTS	15
5.1.	Closing Date	15
5.2.	Closing Deliverables	15
SECTION	ON 6. NETMWD'S WAIVER OF GOVERNMENTAL IMMUNITY	16
6.1.	Chapter 271 of the Texas Local Government Code	16
6.2.	Other Law	16
SECTION	ON 7. ASSIGNMENT	16
SECTION	ON 8. EVENTS OF DEFAULT; REMEDIES	17
	ON 9. RECORDATION	
SECTION	ON 10. NO PROTEST	17
SECTION	ON 11. GENERAL PROVISIONS	18
11.1.	Recitals	18
11.2.	Notices	18
11.3.	Further Assurances; Cooperation	19
11.4.	Severability	19
11.5.	No Third-Party Beneficiary	19
11.6	Litigation	19

11.7.	Interpretation	19
11.8.	Authority and Enforceability	19
11.9.	Enforcement; No Waiver	19
11.10.	Law; Venue	20
11.11.	Execution	20
11.12.	Construction	20
11.13.	No Partnership or Joint Venture	20
11.14.	Multiple Originals	20
11.15.	Amendment	20
11.16.	Time is of the Essence	20
11.17.	Entire Agreement	20
11.18.	Coordination of Parties	20

#### LIST OF EXHIBITS

Exhibit A	The Property
Exhibit B	The Ponds
Exhibit C	G-129/Pond GR-20 Impoundment
Exhibit D	Easement Area
Exhibit E	Pumping Facilities
Exhibit F	Form of Easement
Exhibit G	Environmental Permits
Exhibit H	NETMWD Board Authorization to Execute
Exhibit I	Form of Water Storage Agreement

#### DEVELOPMENT AGREEMENT

This Development Agreement (the "<u>Agreement</u>") is entered into between the Northeast Texas Municipal Water District, a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution ("<u>NETMWD</u>"), whose address is 4180 Highway 250 South, Hughes Springs, Texas, and Luminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together, "<u>Luminant</u>"), with principal offices at 6555 Sierra Drive, Irving, Texas (NETMWD and Luminant are sometimes individually referred to as a "Party", and together as the "Parties").

#### RECITALS

**WHEREAS**, Luminant is the owner of the property known as the Monticello Winfield South Mine, located in or near Winfield Texas, as more particularly described on <u>Exhibit A</u> attached hereto and made a part hereof (the "<u>Property</u>" or the "<u>Land</u>");

WHEREAS, NETMWD was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines;

WHEREAS, NETMWD seeks additional water supply in the upper end of the Basin for beneficial downstream uses including industrial, environmental, water quality and supply during critical low-flow and drought conditions within the Basin;

WHEREAS, the Property is located within the Tankersley Creek region of the Basin ("Tankersley Creek"), said Property having been permitted for mining operations by Luminant and now being subject to the reclamation requirements of the Railroad Commission of Texas ("RRC"), which requirements are codified in 16 Texas Administrative Code § 12.1 et seq. (the "Coal Mining Regulations") and governed by Permit No. 34F, issued by RRC to Luminant, as amended from time to time (together with the other permits listed herein, the "Permits") and secured by a reclamation performance bond (the "Bond"), posted by Luminant, until completion of all mine reclamation obligations (the "Reclamation");

WHEREAS, the Property is also subject to the rules and regulations of various other regulatory agencies, including but not limited to, the Texas Commission on Environmental Quality ("TCEQ") for water quality and water supply authorizations and the United States Army Corps of Engineers ("USACE") with regard to impacts on jurisdictional wetlands from Luminant's prior mining activities and mitigation of the same (the regulations, collectively, the "Environmental Regulations");

**WHEREAS**, within the Property lies that certain final mining pit G-129 (henceforth referred to as proposed "<u>Pond GR-20</u>") that will be interconnected by hydrology and/or pumping operations with Pond GR-17 and proposed Ponds GR-18 and GR-19, as shown on <u>Exhibit B</u> attached hereto and made a part hereof (the "Ponds"):

WHEREAS, Pond GR-18 is part of an approximately 145-acre watershed and Pond GR-19 is part of an approximately 135-acre watershed, both of which drain by gravity into Pond GR-20 in addition to the approximately 535-acre watershed that includes Pond GR-20; and

WHEREAS, upon completion of the Reclamation, the parties anticipate that Pond GR-20 will have the capacity to impound and store approximately 6,810 acre-feet of water on approximately 143 surface acres of land with a total watershed of approximately 815 acres, as more particularly described on *Exhibit C* attached hereto and made a part hereof (the proposed "GR-20");

WHEREAS, water from the proposed Pond GR-20 will have the ability to be pumped into pit GR-17 or directly into upstream tributaries of the Basin; and

WHEREAS, Pond GR-17 is a part of a 147-acre watershed that drains into Pond GR-17 and contains a concrete spillway from which water can be released into Tankersley Creek; and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface mine pits for use as water storage reservoirs to enhance the state's available water supply;

WHEREAS, NETMWD has found that the water from the proposed Pond GR-20, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interests and welfare of the public, and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks & Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin;

WHEREAS, NETMWD desires to acquire the right to store water in and release water from the proposed Pond GR-20 and Pond GR-17 to tributaries of the Basin for the furtherance of the above purposes;

WHEREAS, Luminant desires to grant, upon completion of the Reclamation, to NETMWD access to Pond GR-20 for water storage, management, water quality testing and release into tributaries of the Basin, provided that 1) NETMWD obtains the necessary water rights from TCEQ (the "Water Rights") for such project and 2) the RRC declares the Ponds permanent for purposes of Reclamation, which is subject to: (a) Luminant's ability to remain in compliance with the Coal Mining Regulations, the Permits, the Environmental Regulations and any other rules and regulations covering its reclamation obligations or its occupancy of the Land; and (b) the final approval by the RRC of all necessary permit revisions, release of reclamation performance Bond obligations and the closure of the Land from all other environmental Permits, the Environmental Regulations and from any other programs or permits covering the Reclamation obligations (the "Releases");

WHEREAS, NETMWD could be a beneficiary of the Reclamation activities undertaken by Luminant if these approvals from the TCEQ and RRC are obtained, which would facilitate improved quality and seasonal quantity of environmental flows in the Basin;

- **WHEREAS**, NETMWD is authorized to enter into this Agreement pursuant to its enabling legislation in Section 14, Chapter 78, Acts of the 53<sup>rd</sup> Legislature, Regular Session, 1953 (article 8280-147, Vernon's Texas Civil Statutes) and other applicable laws;
- WHEREAS, the NETMWD Board of Directors authorized the execution of this Agreement on May 24, 2021;
- WHEREAS, NETMWD is located in the Region D Regional Water Planning Group area pursuant to designations made by the Texas Water Development Board to implement the provisions of Senate Bill 1 of the Texas Legislature, Regular Session, 1997, which requires all regions of the state and all water supply agencies within such regions to develop viable water supply plans over a fifty (50) year planning cycle;
- WHEREAS, Luminant and NETMWD acknowledge that this Agreement is binding upon the NETMWD and Luminant, and their respective heirs, successors and assigns for the Term (defined herein) of this Agreement; and
- WHEREAS, a memorandum of this Agreement is to be recorded in the Real Property Records of Titus County.
- **NOW, THEREFORE**, in consideration of the mutual covenants contained herein and other good and valuable consideration, the parties agree as follows:

#### SECTION 1. AUTHORITY, CONSIDERATION, TERM

- 1.1. <u>Authority.</u> Authority for NETMWD to enter into this Agreement exists under its enabling legislation in Section 14, Chapter 78, Acts of the 53<sup>rd</sup> Legislature, Regular Session, 1953 (article 8280-147, Vernon's Texas Civil Statutes), and such other statutes as may be applicable.
- 1.2. <u>Consideration</u>. The benefits to the Parties set forth in the Recitals and herein, plus the mutual promises expressed herein, are good and valuable consideration for this Agreement, the sufficiency of which is acknowledged by the Parties.
- 1.3. <u>Effective Date</u>. This Agreement shall be effective on the date this Agreement is fully executed by both Parties.
- 1.4. <u>Term.</u> The term of this Agreement will commence on the Effective Date and continue for twenty-five (25) years (the "<u>Term</u>").
  - 1.4.1. Extensions to Term. Prior to the termination of the Term, and with one hundred eighty (180) days written notice to the other Party or any of its respective successors or assigns, either Party may extend this Agreement for additional periods of five (5) years each if either (i) the obligations associated with the Permits, the Bond, the Environmental Regulations and other rules and regulations covering Reclamation have not been fully and finally met, or (ii) NETMWD has not successfully obtained the necessary Water Rights; provided, however, that (i) neither party is in material breach of the

Agreement, and (ii) such additional periods do not cumulatively exceed the limitations of State law.

1.4.2. Termination Right. In the event that, prior to the termination of the Term, a Party has used commercially reasonable efforts to satisfy the Conditions Precedent, as defined herein, for which such Party is responsible, but such Party is unable to do so due to no fault of its own, then with thirty (30) days prior written notice to the other Party or any of its respective successors or assigns, such Party may terminate this Agreement. The Parties contemplate that such a termination right event could include, without limitation, (a) a state or federal agency's failure to approve an application or request by Luminant in pursuit of the Project that will allow Luminant to remain in compliance with the Coal Mining Regulations, the Permits, the Environmental Regulations and any other rules and regulations covering its reclamation obligations or its occupancy of the Land and to obtain the Releases; (b) failure by the TCEQ to grant NETMWD the necessary Water Rights under terms substantially sufficient for the Project, as described in Section 2.1 below, and (c) the discovery of any water quality impairment in Ponds GR-17 or GR-20 that would prevent NETMWD from releasing or discharging water into the Basin under applicable TCEQ water quality standards. For purposes of this Section 1.4.2, a Party is not required to file a lawsuit to appeal a decision of a state or federal agency related to an the agency's action on an application or request in furtherance of the Project in order for the Party to be considered under this Agreement to have engaged in "commercially reasonable efforts"; provided, however, that a Party may in its sole discretion so appeal an agency decision.

#### SECTION 2. PROJECT; RIGHTS AND RESPONSIBILITIES; REPRESENTATIONS

- 2.1. Project. The "Project" established by the Agreement will be 1) the Reclamation of Pit G-129 and associated areas to leave in place the Ponds in a manner that will allow for the capture and storage of approximately 6,810 acre-feet of water in and the release of such water from the Ponds GR-17 and GR-20 to tributaries of the Basin by NETMWD, and 2) the acquisition of the necessary Water Rights by NETMWD for the storage of approximately 6,810 acre-feet of water and the release of an annual yield of at least 500 acre-feet of water per year from that storage into tributaries of the Basin as and when NETMWD deems appropriate, all in accordance with applicable law.
- 2.2. <u>Luminant's Rights and Responsibilities</u>. Luminant shall have the following obligations and responsibilities related to the Project:
  - 2.2.1. <u>Reclamation</u>. So long as any portion of the Property is under the Bond or otherwise subject to an Environmental Regulation or a Permit, Luminant shall have the following rights and responsibilities related to the Ponds or Pond GR-20:
    - 2.2.1.1. performance of the Reclamation, at its sole cost and in accordance with Coal Mining Regulations, the Permits, the Bond and any other rules

- and regulations covering Reclamation obligations on the Property (including pit G-129);
- 2.2.1.2. full and sole authority and liability over the Reclamation operations and to make any regulatory decisions regarding the Ponds, including those related to their development;
- 2.2.1.3. sole, exclusive authority to consult with RRC, TCEQ, USACE or any other agency or entity with jurisdiction over the mining and Reclamation obligations on the Land, with the exception of NETMWD's authority to consult with TCEQ regarding water rights and permitting matters related to the Project; and
- 2.2.1.4. no real property title to or liability for the Ponds or associated properties or any portion thereof will transfer to the NETMWD; and
- 2.2.1.5. no access or inundation easement interest in Pond GR-20 or Pond GR-17 or any portion thereof will transfer to NETMWD until Closing, and such will not transfer except as expressly stipulated in this Agreement.
- 2.2.2. Existing Structures. Luminant shall leave in place any existing concrete infrastructure associated with Pond GR-20 or Pond GR-17, including but not limited to concrete spillways that allow for the transportation of stored water into the Basin.
- 2.2.3. <u>Water Rights</u>. Luminant shall coordinate with and not impede NETMWD's efforts to secure the Water Rights.
- 2.2.4. NETMWD's Access and Inundation Easement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, Luminant shall grant to NETMWD and NETMWD's successors and assigns: (a) a perpetual, permanent non-exclusive easement on, over, across and through that portion of the Property more particularly described on Exhibit D attached hereto and made a part hereof (the "Easement Area") for 1) the inundation, overflow, flood, and submersion of the land within the perimeters of Pond GR-20 and Pond GR-17, and of any land within the Easement Area used for the transportation of water between Pond GR-20 and Pond GR-17 or for the transportation of water from Pond GR-20 or Pond GR-17 to tributaries in the Basin, the use of any existing infrastructure associated with Pond GR-20 and Pond GR-17, including but not limited to concrete spillways that allow for the transportation of stored water into tributaries of the Basin, 2) pedestrian and vehicular ingress and egress to the Pond GR-20 and Pond GR-17, together with the right to install, operate and maintain, at NETMWD's sole discretion, (i) certain pumping facilities at Pond GR-20 and Pond GR-17 including a pump station and discharge line, as more particularly set forth on Exhibit E attached hereto and made a part hereof (collectively, the "Pumping Facilities"), at NETMWD's sole cost and expense, and (ii) a power line for the operation of such pumping facilities within the Easement Area, and 3) water quality monitoring and testing of the Ponds, with any such monitoring and testing to Ponds GR-18 or GR-19 to occur only after NETMWD provides

reasonable notice to Luminant that such testing will occur (the "<u>Easement</u>"). Such Easement will be in the form attached hereto as <u>Exhibit F</u>, recorded in the Real Property Records of Titus County, Texas, and will run with the Land. The granting of this Easement does not create an obligation by NETMWD to store or release water from the Pond GR-20 or Pond GR-17 or to maintain existing pumping structures associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.

- 2.2.5. <u>Luminant's Access</u>. Subject to NETMWD's rights under the Easement and NETMWD's right to store water covered by the Water Rights within Pond GR-20 pursuant to Section 2.3.4 below, Luminant shall have ongoing, full and unrestricted access to the Ponds and Pond GR-20.
- 2.2.6. Maintenance. Upon completion of the Reclamation, Luminant shall, at Luminant's sole cost and expense, maintain the Pond GR-20 and the Ponds in compliance with all applicable laws for the purposes expressed herein; provided, however, that NETMWD shall be responsible, at NETMWD's sole cost and expense, for all maintenance related to the intake, release and/or use of the water contained in Pond GR-20 and all repairs resulting from NETMWD's negligence in operation of Pond GR-20. Luminant shall not alter the Ponds or Pond GR-20 in any manner that would prevent either 1) water being stored in and flowing from ponds GR-18 and GR-19 into Pond GR-20, or 2) water from Pond GR-20 being transferred to, stored in, and released from Pond GR-17 into the Basin. Luminant shall not divert water from the Ponds, Pond GR-20 or the watersheds serving the Ponds and Pond GR-20 for any purpose. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. This paragraph shall survive Closing.
- 2.2.7. Preserving the Watersheds. Luminant shall have an ongoing obligation to help preserve the 815-acre watershed that serves Pond GR-20 and the 147-acre watershed that serves pit GR-17. Luminant shall not take any action to alter the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17 so as to prevent water within these watersheds from reaching Pong GR-20 and Pond GR-17, respectively. Luminant shall not take any action that would cause water quality contamination of the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. This paragraph shall survive Closing.
- 2.2.8. Water Storage Agreement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, Luminant shall execute a Water Storage Agreement with NETMWD and NETMWD's successors and assigns, authorizing NETMWD the right to store approximately 6,810 acre-feet of water in Pond GR-20 and subsequently discharge such water into tributaries of the Basin or into Pond GR-17 for storage before subsequently discharging such water from Pond GR-17 into tributaries of the Basin (the "Water Storage Agreement"). The Water Storage Agreement will be in accordance with the Water Rights issued by TCEQ, will obligate Luminant (or its successors) to abide by the terms specified in Sections 2.2.6 (Maintenance) and 2.2.7

(Preserving the Watershed) above, will be for a term of not less than 50 years, and will only be enforceable so long as 1) sufficient water is available to allow for the storage of approximately 6,810 acre-feet of water and 2) water reaching Ponds GR-17 and GR-20 is of a quality that meets applicable TCEQ water quality standards and can be released into the Basin for a beneficial use. The Water Storage Agreement will be in the form attached hereto as *Exhibit I*, recorded in the Real Property Records of Titus County, Texas, and will run with the Land.

- 2.3. <u>NETMWD's Rights and Responsibilities</u>. NETMWD shall have the following obligations and responsibilities related to the Project:
  - 2.3.1. Reclamation. NETMWD shall coordinate with and not impede Luminant's efforts to obtain approval from the RRC to undertake the Project. NETMWD will use Best Management Practices ("BMPs") in the installation and operation of its Pumping Facilities at Pond GR-20 or Pond GR-17 to ensure minimal impacts to the water quality and to the stability or productivity of surrounding vegetated landscape. NETMWD assumes no liability for any Reclamation activities, now or in the future; except that NETMWD shall assume liability for any actions performed by NETMWD with regard to the Ponds and related Pumping Facilities that are inconsistent with this Agreement and that impede with Luminant's release of the Reclamation obligations or would constitute a violation of the Coal Mining Regulations.
  - 2.3.2. <u>Water Use Permit</u>. NETMWD shall consult with and secure from TCEQ the necessary Water Rights for the Project, and shall deliver to Luminant a copy of the Water Use Permit issued by TCEQ for the Water Rights. In its attempts to obtain the Water Rights, NETMWD shall ensure that Luminant is apprised of and has the opportunity to participate in all meetings with the TCEQ or any other governmental agency.
  - 2.3.3. <u>NETMWD-Added Improvements</u>. NETMWD shall own and maintain, at NETMWD's sole cost and expense, any improvements added to the Land or that NETMWD otherwise installs on the Land, including but not limited to the Pumping Facilities necessary or appropriate for the transfer of water from Pond GR-20 for the benefit of the Basin (the "<u>NETMWD-Added Facilities</u>"). Any such NETMWD-Added Facilities shall be installed only within the Easement Area and in accordance with all terms and conditions of the Easement. This paragraph shall survive Closing.
  - 2.3.4. Water Storage Agreement. Upon completion of the Reclamation and subject to the Conditions Precedent, as defined herein, NETMWD shall execute the Water Storage Agreement addressed in Section 2.2.8 above, committing to pay Luminant \$100,000 per year for the right to store approximately 6,810 acre-feet of water within Pond GR-20 and subsequently discharge such water directly into tributaries of the Basin from the north, east, or south sides of the perimeter of Pond GR-20 and the adjacent property lines of the Property on each of those sides of such perimeter, or after first discharging such water into Pond GR-17 for temporary storage prior to discharge into tributaries of the Basin. The execution of such Water Storage Agreement does not create an obligation by NETMWD to store or release water from Pond GR-20 or to maintain existing pumping

structures (specifically excluding any NETMWD-Added Facilities) associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.

- 2.3.5. <u>Utilities</u>. NETMWD shall, at NETMWD's sole cost and expense, procure all required power for the operation of the Pumping Facilities and shall cause any necessary powerlines to be installed within the Easement Area and in accordance with the terms and conditions of the Easement. This paragraph shall survive Closing.
- 2.3.6. <u>TPDES Permit</u>. If required by the TCEQ, NETMWD shall secure and maintain a TPDES discharge wastewater permit for NETMWD's discharge of water from Pond GR-20 and from Pond GR-17 into tributaries of the Basin. This paragraph shall survive Closing.
- 2.3.7. <u>Water Quality</u>. During the course of NETMWD infrastructure development and normal operations, NETMWD shall employ Best Management Practices to minimize negative impacts to water quality within its control and will not impede the necessary surface water discharge monitoring from the Impoundment conducted by Luminant until release of all RRC and TCEQ obligations. NETMWD will support as needed Luminant's efforts to address all Impoundment and discharge water quality concerns.
- 2.3.8. <u>Water Quality Testing</u>. NETMWD will perform, as needed, water quality testing of the water in Ponds GR-17 and GR-20 to ensure that there is no water quality impairment that would prevent NETMWD from releasing or discharging water into the Basin that meets applicable TCEQ water quality standards.
- 2.4. <u>Miscellaneous</u>. For clarity, NETMWD shall not be required to provide any financial support to Luminant for the development of the natural elements of the Reclamation plan which are regulated by the RRC and will not have any authority or ability to direct the development or change those aspects which are regulated by the RRC.

For clarity, Luminant shall not be responsible for the costs or expenses associated with constructing, nor be required to provide any financial support to NETMWD to construct or maintain, any NETMWD-Added Facilities such as power supply, pump stations or pipeline infrastructure. Further, Luminant shall not be responsible for the costs or expenses associated with completing the application for or procuring of the Water Rights.

Notwithstanding Luminant's regulatory control of the Ponds and those portions of the Property covered by the Permits or the Bond and that Luminant can design Pond GR-20 and amend such design from time to time at its sole discretion, Luminant will allow the NETMWD to review the design and any subsequent changes to it, and will endeavor, to the extent Luminant determines to be feasible in its sole judgment, to accommodate NETMWD's desires and future uses of Pond GR-20 in finalizing Pond GR-20 design and in the developing of Pond GR-20

# SECTION 3. RECLAMATION, DISCLAIMER; DISCLOSURES RELATED TO THE PITS

3.1. Reclamation Standards and Requirements. All Reclamation of the Ponds undertaken by Luminant will be in accordance with the Coal Mining Regulations, the Permits, the Bond, the Environmental Regulations and any other rules and regulations of other governmental agencies covering reclamation obligations, including but not limited to the Environmental Regulations related to former mining land or other real property impacted in the course of mining operations. The Parties acknowledge that there are currently open and active environmental permits attached to the Land, a complete listing of which is attached hereto as *Exhibit G*. Luminant's compliance with applicable regulations shall be determined solely by the governmental agency with enforcement jurisdiction over those regulations.

The timing and sequencing of the Reclamation will be determined and completed at the sole discretion of Luminant consistent with the Permits, the Coal Mining Regulations and the Environmental Regulations.

- 3.2. Environmental Disclaimer. EXCEPT AS SET FORTH HEREIN, LUMINANT DOES NOT AND HAS NOT MADE ANY REPRESENTATION OR WARRANTY REGARDING THE PRESENCE OR ABSENCE OF ANY HAZARDOUS SUBSTANCES (AS HEREINAFTER DEFINED) ON, UNDER OR ABOUT THE PROPERTY OR THE COMPLIANCE OR **NONCOMPLIANCE** OF THE **PROPERTY** WITH COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT, THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT, THE RESOURCE CONSERVATION RECOVERY ACT, THE FEDERAL WATER POLLUTION CONTROL ACT, THE FEDERAL ENVIRONMENTAL PESTICIDES ACT, THE CLEAN WATER ACT, THE TEXAS NATURAL RESOURCES CODE, THE TEXAS WATER CODE, THE TEXAS SOLID WASTE DISPOSAL ACT, THE TEXAS HAZARDOUS SUBSTANCES SPILL PREVENTION AND CONTROL ACT, ANY FEDERAL, STATE OR LOCAL "SUPERFUND" OR "SUPER LIEN" STATUTE, OR ANY OTHER STATUTE, LAW, ORDINANCE, CODE, RULE, REGULATION, ORDER OR DECREE REGULATING, RELATING TO OR IMPOSING LIABILITY (INCLUDING STRICT LIABILITY) OR STANDARDS OF CONDUCT CONCERNING ANY HAZARDOUS SUBSTANCES (COLLECTIVELY, THE "HAZARDOUS SUBSTANCE LAWS"). For purposes of this Agreement, the term "Hazardous Substances" shall mean and include those elements or compounds which are contained on the list of hazardous substances adopted by the United States Environmental Protection Agency and the list of toxic pollutants designated by Congress or the Environmental Protection Agency or under any Hazardous Substance Laws. NETMWD is advised that the agronomic or silvicultural practices applicated to Pond GR-20 watershed, or the presence of a threatened or endangered species or its habitat may affect NETMWD's intended use of Pond GR-20. The acknowledgments and agreements of NETMWD set forth in this Section shall survive Closing and shall not be merged therein.
- 3.3. <u>Disclosures</u>. Luminant hereby discloses to NETMWD, and NETMWD hereby acknowledges, that portions of the Property have been used for a variety of functions related to the operation and maintenance of a mine and the equipment associated with such operation and maintenance. As well, portions of the Land have been used historically by prior owners and/or tenants for farming, hunting and ranching, and in connection with such uses prior owners and/or

tenants may have used on the Land fertilizers, insecticides, pesticides, and other potentially hazardous materials commonly used in connection with such operations, and may have operated on the Land gasoline and diesel powered farm equipment and vehicles that typically result in incidental deposits of oil, gasoline, diesel or other hydrocarbons on the Land.

The information referred to in this Section 3.3 is made available without representation by Luminant or recourse to Luminant. NETMWD relies on such information at its own risk. Without limiting the generality of the of the foregoing, NETMWD acknowledges that Luminant has made no representations (expressed or implied) regarding the accuracy of such information, the qualifications of the parties preparing such information, or the conclusions set forth therein.

3.4. <u>No Indemnification</u>. Luminant shall have no obligation to indemnify or hold NETMWD harmless from and against claims, suits, liabilities, costs, losses, DAMAGES, or expenses for bodily injury, death, or property damage caused by, arising from, or relating to the use of Pond GR-20 or Pond GR-17, the Easement Area, or the Pumping Facilities by NETMWD, NETMWD's successors or assigns, or their employees, agents, guests, lessees, licensees or invitees. NETMWD shall have no obligation to indemnify or hold Luminant harmless from and against claims, suits, liabilities, costs, losses, DAMAGES, or expenses for bodily injury, death, or property damage caused by, arising from, or relating to the use of Pond GR-20 or Pond GR-17, the Easement Area, or the Pumping Facilities by Luminant, Luminant's successors or assigns, or their employees, agents, guests, lessees or invitees.

#### **SECTION 4. CONDITIONS TO CLOSE**

- 4.1. Luminant shall have no obligation to grant NETMWD the Easement or execute the Water Storage Agreement and NETMWD shall have no obligation to execute the Water Storage Agreement until the following conditions have been satisfied (the "Conditions Precedent"):
  - 4.1.1. Luminant has received full approval for the Project from the RRC (i.e., approval of a final pit "Reclamation Plan" and approval to make Pond GR-20 permanent);
    - 4.1.2. [Reserved];
  - 4.1.3. NETMWD has secured from TCEQ the Water Rights and provided a copy of the same to Luminant;
  - 4.1.4. NETMWD has determined that the water quality of the water to be collected and stored in Ponds GR-17 and GR-20 will be sufficient to meet applicable TCEQ water quality standards for discharge into the Basin; and
  - 4.1.5. NETMWD has received due authorization and approval from its Board of Directors to enter into this Agreement and the Water Storage Agreement.
- 4.2. Notwithstanding any other provision of this Agreement, if the Conditions Precedent are not satisfied within the Term of this Agreement, then this Agreement shall terminate and be of

no force and effect, and the Parties shall have no further obligations to one another hereunder, except with respect to the obligations described herein as surviving termination of the Agreement.

4.3. The Parties may, by mutual written agreement, extend the Term in accordance with Section 1.4.1 to satisfy any of the Conditions Precedent.

#### **SECTION 5. CLOSING; REPRESENTATIONS & COVENANTS**

- 5.1. <u>Closing Date</u>. The closing shall occur within thirty (30) days after all Conditions Precedent are satisfied (the "<u>Closing</u>"); provided that each Party may, at its option and in its sole discretion and upon written notice to the other Party, waive, on its own behalf but not for the other Party, any Condition Precedent and proceed to Closing.
- 5.2. <u>Closing Deliverables</u>. At Closing, Luminant and NETMWD shall cause to be delivered the following items, as applicable:
  - 5.2.1. Luminant shall deliver the Easement and the Water Storage Agreement and record the same in the Real Property Records of Titus County;
  - 5.2.2. NETMWD shall deliver its countersignature to the Easement and the Water Storage Agreement; and
  - 5.2.3. NETMWD shall deliver to Luminant the first annual payment under the Water Storage Agreement.
  - 5.3. <u>Luminant's Representations</u>. Luminant represents and warrants to NETMWD:
  - 5.3.1. Luminant has full authority and approval to enter into this Agreement and perform the obligations of Luminant set forth herein.
  - 5.3.2. There are no existing contracts or agreements entered into by Luminant, either recorded or unrecorded, written or oral, affecting the Ponds or the Easement Area, or any portion thereof or the use thereof, except for that certain deed-recorded TCEQ registered landfill footprint; and
  - 5.3.3. Luminant has no knowledge of any pending or threatened condemnation proceedings with respect to the Ponds or the Easement Area.
- 5.4. <u>NETMWD's Representations and Covenants</u>. NETMWD represents and warrants to Luminant:
  - 5.4.1. NETMWD has full authority and approval to enter into this Agreement and perform the obligations of NETMWD set forth herein.
  - 5.4.2. NETMWD will make every effort to secure the Water Rights from TCEQ in an expeditious manner, and will allow Luminant to participate in the process;

5.4.3. NETMWD agrees that it shall not use Pond GR-20 or allow any use of Pond GR-20 in a manner that is inconsistent with, interferes with, impairs or impedes Luminant's ability to satisfy its reclamation obligations.

#### SECTION 6. NETMWD'S WAIVER OF GOVERNMENTAL IMMUNITY

- 6.1. <u>Chapter 271 of the Texas Local Government Code</u>. To the maximum extent allowed by applicable law, NETMWD hereby expressly waives any claim to sovereign or governmental immunity from liability or from suit for purposes of this Agreement, or in any attempt by Luminant to enforce this Agreement or to adjudicate and obtain any appropriate remedies, including but not limited to those available under Texas Local Government Code Section 271.151, et seq., for any claim arising hereunder. NETMWD and Luminant acknowledge and agree that this Agreement is a written agreement stating the essential terms for NETMWD and Luminant to provide goods and services to each other within the meaning of the Texas Local Government Code, Section 271.151. By execution of this Agreement, NETMWD represents that it is authorized to enter into this Agreement.
- 6.2. Other Law. The Parties do not intend the foregoing waivers to be an exclusive list. It is the Parties' intention that NETMWD waive its governmental immunity for any issues, disputes, suits, actions at law or equity, or actions for declaratory relief, injunctive relief, or mandamus arising from or relating to this Agreement to the fullest extent permitted by the Texas Constitution or any other law of the State of Texas.

#### **SECTION 7. ASSIGNMENT**

This Agreement may be assigned by Luminant without the consent of NETMWD to any Luminant affiliated or related entity and Luminant will be released from its obligations under this Agreement upon delivery of a notice of such assignment to NETMWD. Any assignment of Luminant's rights and obligations hereunder to an entity that is not affiliated with or related to Luminant will not release Luminant of its respective obligations under this Agreement until NETMWD has approved the assignment in writing; provided, however, NETMWD shall not unreasonably deny, delay, or condition its approval of the assignment.

Any assignment of NETMWD's rights and obligations hereunder will not be effective unless first agreed to in writing by Luminant, whose consent and agreement shall not be unreasonably withheld.

Prior to the future sale, conveyance or transfer of any portion of the Water Rights, the NETMWD shall give written notice of this Agreement to the prospective purchaser, grantee or transferee, and shall also give Luminant at least ten (10) days' prior written notice of the sale or conveyance.

This Agreement shall be binding upon the Parties, their grantees, successors, assigns, or subsequent purchasers. Any reference to Luminant or NETMWD shall be deemed to and will include the successors or assigns thereof, and all the covenants and agreements in this Agreement

shall bind and inure to the benefit of the respective successors and assigns thereof whether so expressed or not.

#### SECTION 8. EVENTS OF DEFAULT; REMEDIES

No Party shall be in default under this Agreement until notice of the alleged failure of such Party to perform has been given (which notice shall set forth in reasonable detail the nature of the alleged failure) and until such Party has been given a reasonable time to cure the alleged failure (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given); provided, however, in the event of any default by a Party hereunder, the failure to promptly cure of which could lead to an imminent risk of personal injury, loss of life, or damage to property, such Party shall take such immediate action as is reasonably necessary to avoid or mitigate such consequences. In addition, no Party shall be in default under this Agreement if, within the applicable cure period, the Party to whom the notice was given begins performance and thereafter diligently and continuously pursues performance until the alleged failure has been cured.

The provisions of this Section 8 shall not apply to Section 4 and shall not operate to lengthen the time for performance of the Conditions Precedent or limit the ability of the parties to terminate this Agreement on the date stipulated in Section 4 if the Conditions Precedent have not been satisfied on or before said date.

IF A PARTY IS IN DEFAULT, THE AGGRIEVED PARTY MAY, AT ITS OPTION AND WITHOUT PREJUDICE TO ANY OTHER RIGHT OR REMEDY UNDER THIS AGREEMENT, SEEK ANY RELIEF AVAILABLE AT LAW OR IN EQUITY, INCLUDING, BUT NOT LIMITED TO, AN ACTION UNDER THE UNIFORM DECLARATORY JUDGMENTS ACT, SPECIFIC PERFORMANCE, MANDAMUS, AND INJUNCTIVE RELIEF.

#### **SECTION 9. RECORDATION**

This Agreement shall run with the Land, shall be recorded in the real property records of Titus County, Texas after the Effective Date, and shall be binding on Luminant, NETMWD, and their respective successors in title.

#### **SECTION 10. NO PROTEST**

As a part of the consideration supporting this Agreement, NETMWD agrees and covenants not to contest, protest, or otherwise challenge any application that Luminant or any subsidiary, affiliate or assignee of Luminant or Vistra Energy Corp., formerly known as Energy Future Holdings Corp. and TXU Corp. (collectively referred to as "Applicant"), may file or make to any local, state or federal agency, including but not limited to the RRC, TCEQ, USACE, and/or the United States Environmental Protection Agency, for any environmental, development, construction, or operation authorization, including, but not limited to any local, state or federal permit, registration or any other authorization for any facility or any portion of a facility, or any other structure or process in Titus County, Texas on the Property and related to the Project, or otherwise take a position adverse to Applicant, in any proceeding, in any form or forum, including, but not limited to, before or to the RRC, the TCEQ, the Texas State Office of Administrative

Hearings, and/or state or federal court related to the Property and/or the Project, save and except any action related to breach, specific performance, or other legal or equitable actions or remedies related to this Agreement or any other acts of Luminant that are contrary to the provisions of this Agreement. NETMWD's agreement and covenant not to contest, protest, or otherwise challenge any such actions or applications includes NETMWD's express agreement and covenant not to file any public comments, requests for opposing party status, motions to overturn, motions for reconsideration, objections or any other administrative or judicial appeals regarding such application or any authorization that Applicant obtains as a result of such application. NETMWD's agreement and covenant not to contest, protest, or otherwise challenge such application also extends to any subsequent amendment or modification of any authorization that Applicant obtains as a result of any such application. NETMWD further agrees and covenants not to seek or pursue revocation of any authorization that Applicant obtains as a result of such application, or to attempt to enjoin, cease or restrain operations under such authorization, or take a position adverse to Applicant in any such revocation or injunction action, or in any other way attempt to otherwise constrain operations under such authorization, in any form or forum whatsoever. The provisions of this Section shall survive Closing, and Luminant may enforce the provisions hereof by any appropriate legal action.

#### SECTION 11. GENERAL PROVISIONS

- 11.1. Recitals. The recitals contained in this Agreement: (a) are true and correct as of the Effective Date; (b) form the basis upon which the Parties negotiated and entered into this Agreement; and (c) reflect the final intent of the Parties with regard to the subject matter of this Agreement. In the event it becomes necessary to interpret any provision of this Agreement, the intent of the Parties, as evidenced by the recitals, shall be taken into consideration and, to the maximum extent possible, given full effect. The Parties have relied upon the recitals as part of the consideration for entering into this Agreement and, but for the intent of the Parties reflected by the recitals, would not have entered into this Agreement.
- 11.2. <u>Notices</u>. Any notice required or permitted to be delivered hereunder shall be in writing and shall be deemed received on the actual receipt by mail, Federal Express or other delivery service, fax, email or hand delivery, addressed to Luminant or NETMWD, as the case may be, at the addresses provided below:

NETMWD:	Luminant:
P.O. Box 955	6555 Sierra Drive
Hughes Springs, Texas 75656	Irving, TX 75039
Attn: Executive Director	Attn: General Counsel (Real Estate)
E-mail:	E-mail:

- 11.3. <u>Further Assurances: Cooperation</u>. Each Party shall, from time to time, upon written request, execute and deliver such further instruments and documents as may be reasonably necessary to perform its obligations hereunder or to give full effect to this Agreement.
- 11.4. <u>Severability</u>. The provisions of this Agreement are severable. If a court of competent jurisdiction finds that any provision of this Agreement is unenforceable, the unenforceable provision shall be replaced, to the extent possible, with a legal, enforceable and valid provision that is similar in tenor to the unenforceable provisions as is legally possible, and the Agreement as so-modified shall be enforced to the greatest extent permitted by law, except when such construction would constitute a substantial deviation from the general intent and purchase of the Parties as reflected in this Agreement.
- 11.5. <u>No Third-Party Beneficiary</u>. This Agreement is not intended, nor will it be construed to create any third-party beneficiary rights in any person or entity who is not a Party, unless expressly otherwise provided herein.
- 11.6. <u>Litigation</u>. In the event of any third-party lawsuit or other claim relating to the validity of this Agreement or any actions taken by the Parties hereunder, Luminant and NETMWD intend to cooperate in the defense of such suit or claim, and to use their respective best efforts to resolve the suit or claim without diminution of their respective rights and obligations under this Agreement. The filing of any third-party lawsuit relating to this Agreement will not delay, stop or otherwise affect this Agreement, unless otherwise required by a court of competent jurisdiction.
- 11.7. <u>Interpretation</u>. The Parties acknowledge that each of them has been actively involved in negotiating this Agreement. Accordingly, the rule of construction that any ambiguities are to be resolved against the drafting Party will not apply to interpreting this Agreement. In the event of any dispute over the meaning or application of any provision of this Agreement, the provision will be interpreted fairly and reasonably and neither more strongly for or against any Party, regardless of which Party originally drafted the provision.
- 11.8. <u>Authority and Enforceability</u>. NETMWD represents and warrants that this Agreement has been approved by appropriate action of NETMWD, and that the individual executing this Agreement on behalf of the NETMWD has been duly authorized to do so. Luminant represents and warrants that this Agreement has been approved by appropriate action of Luminant, and that the individual executing this Agreement on behalf of Luminant has been duly authorized to do so. Each Party acknowledges and agrees that this Agreement is binding upon such Party and enforceable against such Party in accordance with its terms and conditions.
- 11.9. Enforcement; No Waiver. This Agreement may be enforced by Luminant or NETMWD by any proceeding at law or in equity. The remedies herein provided shall not be deemed to be exclusive, but shall be cumulative and shall be in addition to all other remedies in its favor existing in law, in equity or in bankruptcy. No subsequent change in the law regarding annexation shall affect the enforceability of this Agreement. The failure of either Party to insist at any time upon the strict performance or any covenant or agreement in this Agreement or to exercise

any right, power or remedy contained in this Agreement will not be construed as a waiver or a relinquishment thereof for the future.

- 11.10. <u>Law; Venue</u>. This Agreement is subject to all applicable state and federal laws and any applicable permits, ordinances, rules, orders and regulations of any local, state or federal governmental authority having or asserting jurisdiction; but nothing contained herein shall be construed as a waiver of any right to question or contest any such law, ordinance, order, rule or regulation in any forum having jurisdiction. The venue for any legal proceeding to enforce or interpret the provisions of this Agreement shall be in Dallas County, Texas, on agreement of the Parties and pursuant to Section 15.020 of the Civil Practice and Remedies Code.
- 11.11. Execution. This Agreement may be separately executed in individual counterparts and, upon execution, shall constitute one and the same instrument.
- 11.12. <u>Construction</u>. This Agreement shall be construed fairly and simply, and not strictly for or against either Party. Headings used throughout this Agreement are for convenience and reference only, and the words contained therein shall in no way be held to explain, restrict, modify, amplify or aid in the interpretation or construction of the meaning of the provisions of this Agreement.
- 11.13. No Partnership or Joint Venture. Nothing in this Agreement or any related document should be construed to create any form of partnership or joint venture among the Parties.
- 11.14. <u>Multiple Originals</u>. The Parties may execute this Agreement in one or more duplicate originals, each of equal dignity.
- 11.15. <u>Amendment</u>. This Agreement may only be amended as mutually agreed in a writing duly executed by the Parties.
- 11.16. <u>Time is of the Essence</u>. It is acknowledged and agreed by the Parties that time is of the essence in the performance of this Agreement.
- 11.17. Entire Agreement. This Agreement, together with any exhibits attached hereto, constitutes the entire agreement between the Parties with respect to its subject matter, and may not be amended except by a writing signed by all Parties with authority to sign and dated subsequent to the date hereof. There are no other agreements, oral or written, except as expressly set forth herein.
- 11.18. Coordination of Parties. After this Agreement is fully executed, the Parties agree to continue to regularly communicate and coordinate regarding the development of Pond GR-20 as a water supply and the implementation of the provisions of this Agreement. The Parties agree to execute, acknowledge, and deliver or cause to be executed, acknowledged, and delivered, such instruments and take such other actions as may be necessary, advisable, or convenient to carry out their obligations under this Agreement and under any document, certificate, or other instrument delivered pursuant hereto or required by law. The Parties further acknowledge that it is difficult to anticipate all of the activities, situations, and other factors which may be relevant to them in

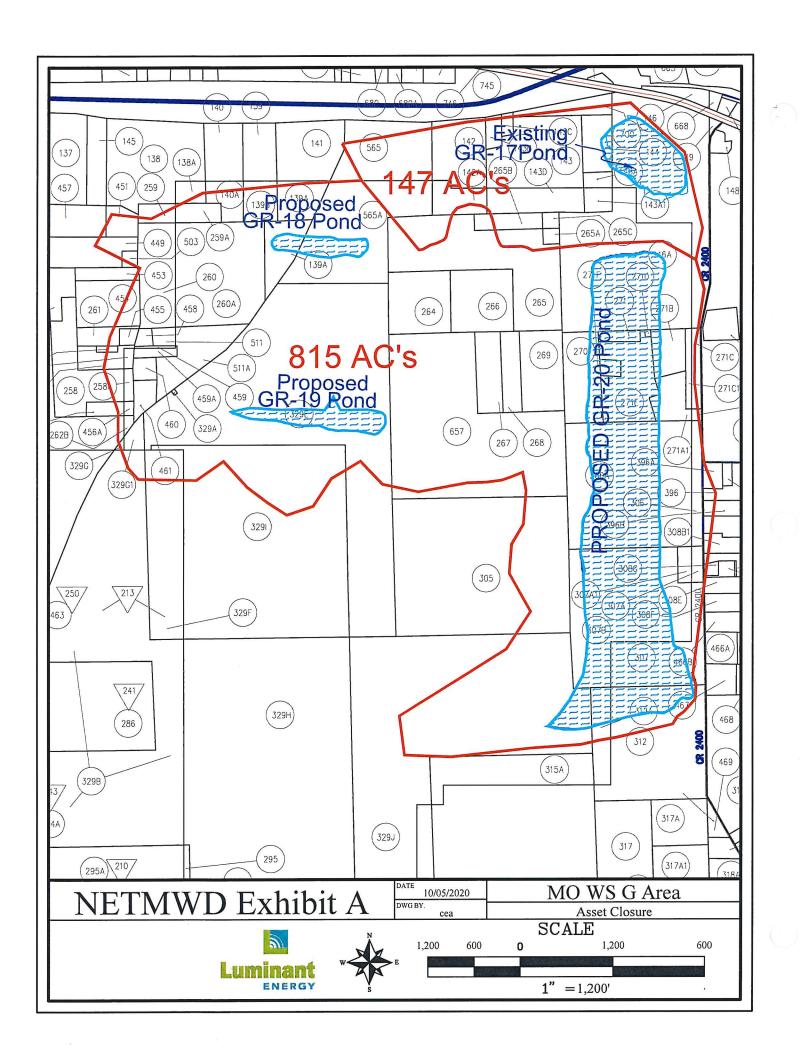
satisfying their respective obligations under this Agreement. Therefore, the Parties acknowledge that it will be necessary for them to cooperate with each other relative to any unforeseen situation and work together in good faith to address such situation.

[Remainder of the page intentionally left blank.]

The parties have executed this Agreement on the day and year written below.

# The District:

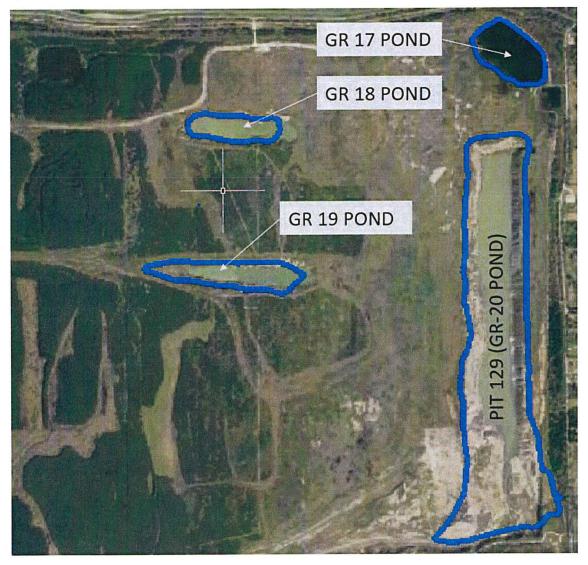
# EXHIBIT A THE PROPERTY

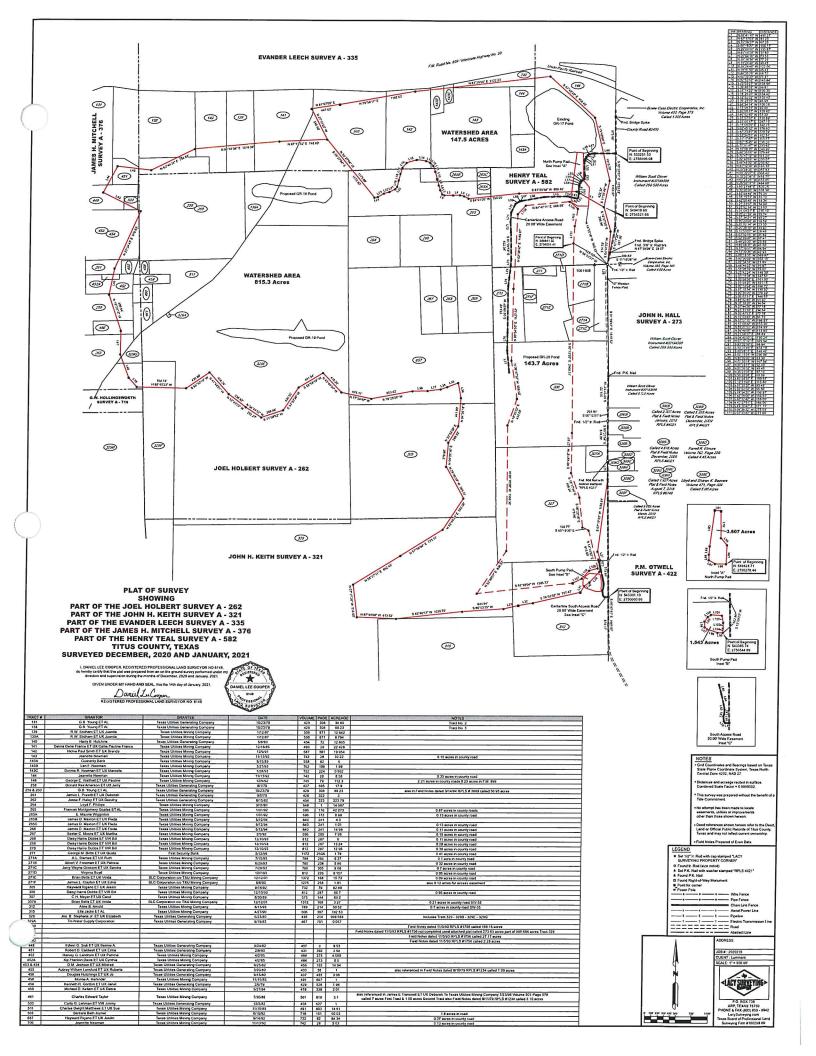


### **EXHIBIT B**

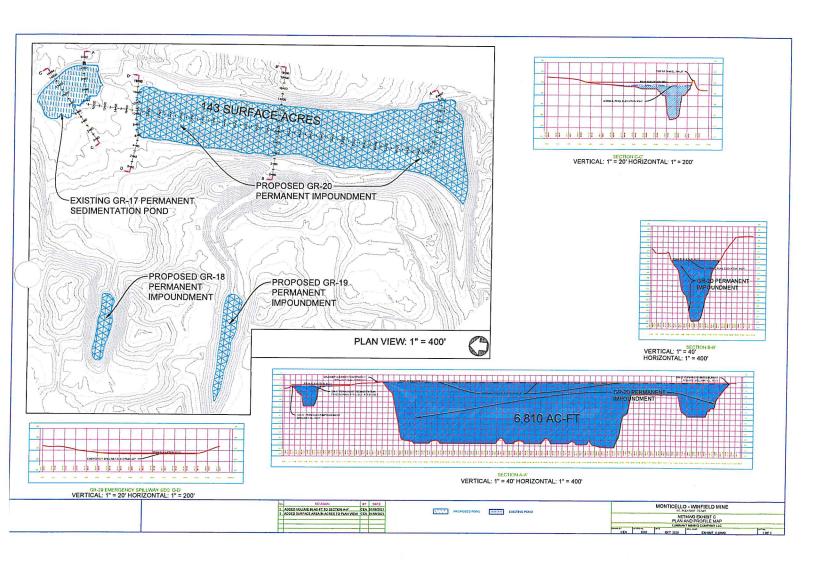
## THE PONDS

# G AREA Pit 129 POND NAMES AND LOCATIONS





## EXHIBIT C G-129/POND GR-20 IMPOUNDMENT



## EXHIBIT D

## EASEMENT AREA



# EXHIBIT E PUMPING FACILITIES

## **EXHIBIT E**

Two Facility Pump Pads will be constructed at the northeast and southeast ends of the Proposed GR-20 Permanent Impoundment to locate pumping equipment for the controlled release of the contained water. The centroid location of the northeast Facility Pump Pad is approximately, N: 549,766, E: 2,756,140. The centroid location of the southeast Facility Pump Pad is approximately, N: 543,528, E: 2,756,415. Within each of the Facility Pump Pad areas shown in Exhibit D, a "Pump Pad" measuring approximately 40 Ft. X 40 Ft., will be constructed at a relatively flat sloping grade of 1.0% or less for proper drainage. The Pump Pad will be constructed with a 6-inch soil compacted subgrade and approximately 4 inches of crushed limestone surfacing.



January 14, 2021
Field Notes for Luminant Mining Company LLC
1.543 Acres
South Pump Pad
John H. Keith Survey A-321
Titus County, Texas

#### **GENERAL DESCRIPTION**

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321, Titus County, Texas and being a part of that that certain called 50.52 acre (Luminant Mining Tract #312) that is described in a deed dated August 13, 1993 from Aline B. Arnold to Texas Utilities Mining Company that is recorded in Volume 789, Page 214 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

#### METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears South 12 degrees 28 minutes and 23 seconds West, 502.86 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 543,385.74) (E: 2,756,544.09);

Thence across said tract as follows;

North 90 degrees 00 minutes 00 seconds West, for a distance of 83.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 71 degrees 50 minutes 18 seconds West, for a distance of 167.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 50 degrees 33 minutes 17 seconds West, for a distance of 52.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 35 degrees 01 minutes 05 seconds East, for a distance of 87.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 56 degrees 20 minutes 08 seconds East, for a distance of 60.09 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 85 degrees 58 minutes 32 seconds East, for a distance of 169.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 10 degrees 51 minutes 02 seconds East, for a distance of 113.86 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 02 minutes 50 seconds West, for a distance of 66.66 feet, to the place of beginning, and containing **1.543 acres**.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

DANIEL LEE COOPER
6148
60 FESSIONE



January 14, 2021
Field Notes for Luminant Mining Company LLC
3.607 Acres
North Pump Pad
Henry Teal Survey A-582
Titus County, Texas

### GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the Henry Teal Survey A-582, Titus County, Texas and being a part of that certain called 112.3 acre (Luminant Mining Tract 146) that is described in a deed dated December 9, 1992 from George E. Walthall, et ux Pauline, to Texas Utilities Mining Company that is recorded in Volume 745, Page 79 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

## METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears North 18 degrees 55 minutes and 16 seconds West, 960.33 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 549,424.71) (E: 2,756,278.44);

Thence across said tract as follows;

North 89 degrees 27 minutes 51 seconds West, for a distance of 174.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 49 minutes 55 seconds West, for a distance of 113.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 04 minutes 17 seconds East, crossing a 20.00 feet wide easement surveyed this same date, for a distance of 88.69 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 46 minutes 05 seconds East, for a distance of 130.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 07 degrees 17 minutes 12 seconds East, for a distance of 569.04 feet, to a point for corner in the edge of a pond;

South 83 degrees 32 minutes 09 seconds East, along the edge of said pond, for a distance of 98.84 feet, to a point for corner;

South 00 degrees 33 minutes 49 seconds East, crossing said easement, for a distance of 424.19 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 40 degrees 48 minutes 11 seconds East, for a distance of 148.41 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 15 minutes 08 seconds West, for a distance of 296.04 feet, to the place of beginning, and containing **3.607 acres**.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, DANIEL LEE COOPER, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020

GIVEN UNDER MY HAND AND SEAL, this the 14th day of December, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

Daniel Lu Cooper

SURVE

# $\label{eq:exhibit} \mbox{EXHIBIT F}$ FORM OF EASEMENT

NOTICE OF CONFIDENTIALITY RIGHTS: If you are a natural person, you may remove or strike any or all of the following information from any instrument that transfers an interest in real property before it is filed for record in the public records: your Social Security number or your driver's license number.

## EASEMENT AGREEMENT FOR ACCESS AND INUNDATION

Grantor:	Luminant Generation Company LLC and Luminant Mining Company LLC	
Grantor's Address:	6555 Sierra Drive Irving, Texas	
Grantee:	Northeast Texas Municipal Water District	
Grantee's Address:	4180 Highway 250 South Hughes Springs, Texas	
Easement Property:	The real property located in Titus County, Texas, more fully described in the attached Exhibit A, and as depicted in the attached Exhibit B.	
<b>Easement Purposes:</b>	1) For the inundation, overflow, flood and submersion of the land within the perimeters of Ponds GR-20 and GR-17, and of any land within the Easement Property used for the transportation of water between Ponds GR-20 and GR-17 or for	

2) For the use of any existing infrastructure associated with Ponds GR-20 and GR-17, including without limitation concrete spillways, to allow for the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin; and

the transportation of water from Ponds GR-20 or GR-17 to

tributaries in the Big Cypress Creek Basin; and

3) For providing free and uninterrupted pedestrian and vehicular ingress to and egress from Ponds GR-20 and GR-17 from Interstate Highway 30, County Road 2400, and FM 899 for accessing and facilitating the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin and conducting water quality monitoring and testing, including roadway and parking area access; and

Date:

4) For placing, constructing, operating, repairing, maintaining, rebuilding, replacing, relocating, and removing utility lines, mains, cables, and systems for electric and any other utilities that may become reasonably necessary in the future for facilitating the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin.

#### Consideration:

The sum of Ten Dollars (\$10.00) and other good and valuable consideration, including the conveyance of other property, the receipt and sufficiency of which are acknowledged by Grantor.

Grant of Easement: Grantor, for the Consideration and subject to the Reservations from Conveyance and Exceptions to Warranty, grants, sells, and conveys to Grantee and Grantee's heirs, successors, and assigns an easement over, on, and across the Easement Property for the Easement Purposes, together with all related rights and appurtenances (collectively, "Easement"), to have and to hold the Easement to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds itself and its heirs, successors, and assigns to warrant and forever defend the title to the Easement in Grantee and Grantee's heirs, successors, and assigns against every person lawfully claiming or to claim the Easement or any part of it, except as to the Reservations from Conveyance and Exceptions to Warranty.

**Terms and Conditions:** The following terms and conditions apply to the Easement granted by this Easement Agreement for Access and Inundation ("Agreement"):

- 1. <u>Character of Easement.</u> The Easement is nonexclusive and irrevocable. The Easement is for the benefit of Grantee and Grantee's heirs, successors, and assigns.
- 2. **Duration of Easement.** The duration of this Easement is perpetual.
- 3. <u>Reservation of Rights.</u> Grantor reserves for itself and its heirs, successors, and assigns the right to continue to use and enjoy the surface of the Easement Property for all purposes that do not interfere with or interrupt the use or enjoyment of the Easement by Grantee for the Easement Purposes.

## 4. Improvement and Maintenance of Easement Property.

a. <u>Improvements.</u> Improvements will be at the sole expense of the Grantee. Grantee has the right to construct, install, maintain, replace, and remove pumping facilities, water quality monitoring equipment, concrete spillways, discharge lines and power lines under or across any portion of the Easement Property to allow for the transportation of stored water in Ponds GR-20 and GR-17 into tributaries of the Big Cypress Creek Basin. All matters concerning the configuration, construction, installation, maintenance, replacement and removal of such improvements are at the sole discretion of the Grantee. Grantee also has the right to construct and maintain roadways and parking areas within the Easement Property, subject to Grantor's reasonable approval of the locations thereof, for access to Ponds GR-20 and GR-17.

- b. <u>Maintenance</u>. Grantor shall maintain the Easement Property for the Easement Purposes. Grantee shall be responsible for all maintenance related to the pumping facilities, concrete spillways, power lines, roadways and parking areas installed by Grantee on the Easement Property.
- 5. <u>Notice.</u> Before accessing the Easement Property for the Easement Purpose of conducting water quality monitoring and testing of Ponds GR-20 and GR-17, Grantee will provide reasonable written notice to Grantor that such testing will occur.
- 6. <u>Indemnification</u>. GRANTEE HEREBY AGREES TO INDEMNIFY AND HOLD GRANTOR HARMLESS FROM AND AGAINST ANY THIRD-PARTY CLAIM OR LIABILITY OR LOSS FROM PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE OF THE EASEMENT BY GRANTEE, ITS SERVANTS, AGENTS OR INVITEES, AS WELL AS THE INSTALLATION, USE, MAINTENANCE, REPAIR OR REMOVAL OF THE FACILITIES DESCRIBED HEREIN BY GRANTEE, ITS SERVANTS, AGENTS OR INVITEES, EXCEPTING, HOWEVER, SUCH CLAIMS, LIABILITIES OR LOSSES TO THE EXTENT DUE TO OR CAUSED BY THE GRANTOR OR GRANTOR'S SERVANTS, AGENTS OR INVITEES.
- 7. Equitable Rights of Enforcement. This Agreement may be enforced by restraining orders and injunctions (temporary or permanent) prohibiting interference and commanding compliance with its terms. The act of obtaining an injunction or a restraining order will not be deemed to be an election of remedies or a waiver of any other rights available at law or in equity.
- 8. <u>Amendment.</u> This Agreement may be amended or terminated only by a written agreement.
- 9. <u>Binding Agreement.</u> This Agreement and all of its terms, provisions, and covenants will apply to, be binding on, and inure to the benefit of the parties and their respective heirs, executors, legal representatives, and assigns.
- 10. <u>Governing Law.</u> This Agreement will be governed by and interpreted under the laws of the State of Texas, regardless of any conflict-of-law rules. Venue is in the county in which the Easement Property is located.
- 11. <u>Counterparts.</u> This Agreement may be executed in two or more counterparts, each of which will be deemed an original and all of which together will constitute one agreement.
- 12. <u>Further Assurances.</u> Each signatory party agrees to execute and deliver any additional documents and instruments and to perform any additional acts as are reasonably necessary or appropriate to perform the terms, provisions, and conditions of this Agreement and all transactions contemplated by this Agreement.

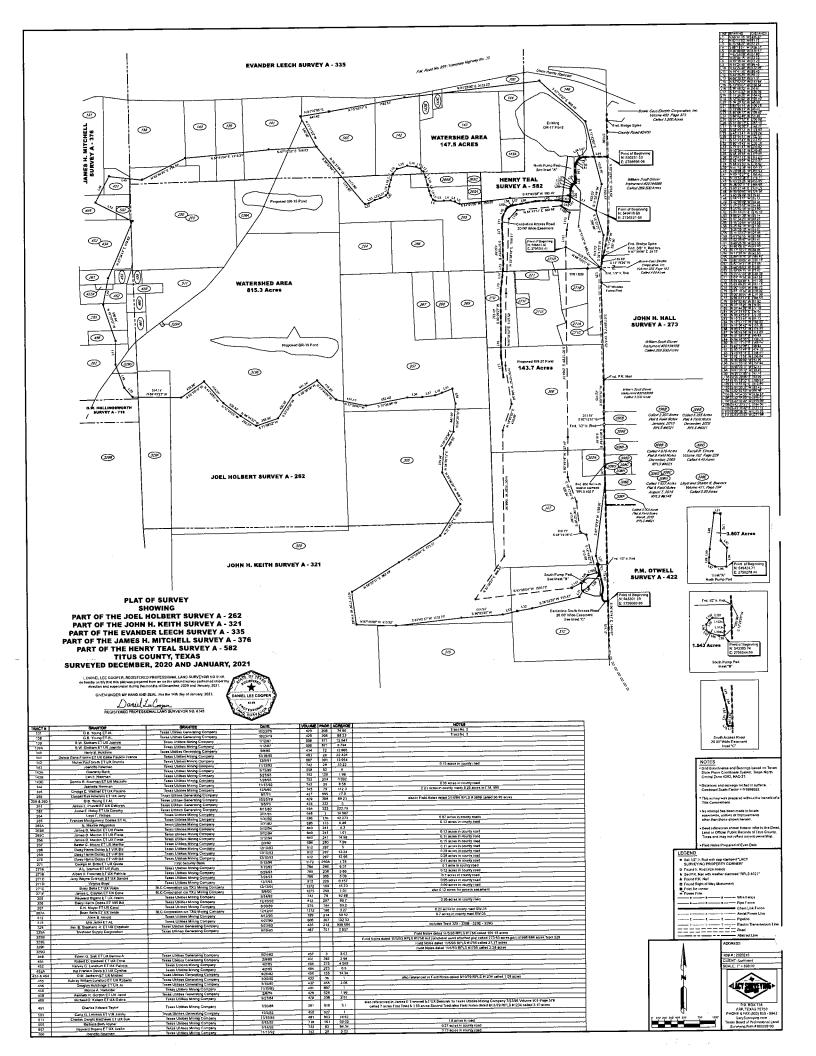
13. Severability; Construction. If any provision in this Agreement is for any reason unenforceable, to the extent the unenforceability does not destroy the basis of the bargain among the parties, the unenforceability will not affect any other provision of this Agreement, and this Agreement will be construed as if the unenforceable provision had never been a part of it. Whenever context requires, the singular will include the plural and the neuter will include the masculine or feminine gender, and vice versa. Article and section headings in this Agreement are for reference only and are not intended to restrict or define the text of any section. This Agreement will not be construed more or less favorably between the parties by reason of authorship or origin of language.

EXECUTED as of		, 20
		GRANTOR:
		a(n),
		By:
		Name:Title:
		GRANTEE:
		a(n),
		By: Name:
		Title:
STATE OF TEXAS	<i>9</i>	
COUNTY OF	<b>§</b>	
This instrument was acl	knowledged l	before me on, 20, , as, of
Luminant Generation Company person personally appeared by:	y LLC and L	, as
physically appearing	ig before me.	
		e-way audio and video communication that meets the exas Government Code chapter 406, subchapter C.
[Seal]		
		Notary Public, State of Texas

STATE OF TEXAS §	
COUNTY OF §	
This instrument was acknowledged befo	re me on
by, as Executive Dire	ector of Northeast Texas Municipal Water District.
The acknowledging person personally appeared	by:
physically appearing before me.	
appearing by an interactive two-warequirement for online notarization under Texas	y audio and video communication that meets the s Government Code chapter 406, subchapter C.
[Seal]	
	Notary Public, State of Texas

Attach:

Exhibit A (Legal Description of Easement Property)
Exhibit B (depiction of Easement Property and same as Exhibit D in the Development Agreement)





January 14, 2021
Field Notes for Luminant Mining Company LLC
1.543 Acres
South Pump Pad
John H. Keith Survey A-321
Titus County, Texas

### GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321, Titus County, Texas and being a part of that that certain called 50.52 acre (Luminant Mining Tract #312) that is described in a deed dated August 13, 1993 from Aline B. Arnold to Texas Utilities Mining Company that is recorded in Volume 789, Page 214 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

## METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears South 12 degrees 28 minutes and 23 seconds West, 502.86 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 543,385.74) (E: 2,756,544.09);

Thence across said tract as follows;

North 90 degrees 00 minutes 00 seconds West, for a distance of 83.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 71 degrees 50 minutes 18 seconds West, for a distance of 167.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 50 degrees 33 minutes 17 seconds West, for a distance of 52.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 35 degrees 01 minutes 05 seconds East, for a distance of 87.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 56 degrees 20 minutes 08 seconds East, for a distance of 60.09 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 85 degrees 58 minutes 32 seconds East, for a distance of 169.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 10 degrees 51 minutes 02 seconds East, for a distance of 113.86 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 01 degrees 30 minutes 32 seconds West, for a distance of 90.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 02 minutes 50 seconds West, for a distance of 66.66 feet, to the place of beginning, and containing **1.543 acres**.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

DANIEL LEE COOPER
6148



January 14, 2021
Field Notes for Luminant Mining Company LLC
3.607 Acres
North Pump Pad
Henry Teal Survey A-582
Titus County, Texas

## **GENERAL DESCRIPTION**

All that certain tract, lot or parcel of land, a part of the Henry Teal Survey A-582, Titus County, Texas and being a part of that certain called 112.3 acre (Luminant Mining Tract 146) that is described in a deed dated December 9, 1992 from George E. Walthall, et ux Pauline, to Texas Utilities Mining Company that is recorded in Volume 745, Page 79 of the Deed Records of Titus County, Texas and being more completely described as follows to wit;

## METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner, which bears North 18 degrees 55 minutes and 16 seconds West, 960.33 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres and in the centerline of County Road #2400 and said beginning iron rod has a Texas North Central Coordinate value of (N: 549,424.71) (E: 2,756,278.44);

Thence across said tract as follows;

North 89 degrees 27 minutes 51 seconds West, for a distance of 174.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 49 minutes 55 seconds West, for a distance of 113.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 01 degrees 04 minutes 17 seconds East, crossing a 20.00 feet wide easement surveyed this same date, for a distance of 88.69 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 46 minutes 05 seconds East, for a distance of 130.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 07 degrees 17 minutes 12 seconds East, for a distance of 569.04 feet, to a point for corner in the edge of a pond;

South 83 degrees 32 minutes 09 seconds East, along the edge of said pond, for a distance of 98.84 feet, to a point for corner;

South 00 degrees 33 minutes 49 seconds East, crossing said easement, for a distance of 424.19 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 40 degrees 48 minutes 11 seconds East, for a distance of 148.41 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 02 degrees 15 minutes 08 seconds West, for a distance of 296.04 feet, to the place of beginning, and containing **3.607 acres**.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020

GIVEN UNDER MY HAND AND SEAL, this the 14th day of December, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

6148 POFESSIONE SURVEYOR



January 14, 2021
Field Notes for Luminant Mining Company LLC
147.5 Acres
Watershed Area

Joel Holbert Survey A-262 Evander Leech Survey A-335 Henry Teal Survey A-582 Titus County, Texas

## **GENERAL DESCRIPTION**

All that certain tract, lot or parcel of land, a part of the Joel Holbert Survey A-262, a part of the Evander Leech Survey A-335 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #141 Delma Gene France, et ux Callie Pauline France, to Texas Utilities Mining Company, December 18, 1985, Volume 493, Page 28, called 22.428 acres;
- Luminant Mining Tract #142 Nickie Paul Smith, et ux Brenda, to Texas Utilities Mining Company, December 9, 1991, Volume 687, Page 301, called 19.954 acres;
- Luminant Mining Tract #143 Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 33.22 acres;
- Luminant Mining Tract #143A Guaranty Bank to Texas Utilities Mining Company, May 15, 1989, Volume 558, Page 82, called 6 acres;
- Luminant Mining Tract #143B Len F. Newman to Texas Utilities Mining Company, March 27, 1993, Volume 762, Page 106, called 1.99 acres;
- Luminant Mining Tract #143C Donnie R. Newman, et ux Marzelle, to Texas Utilities Mining Company, January 28, 1993, Volume 752, Page 224, called 0.992 acres;
- Luminant Mining Tract #144 Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 6.58 acres;
- Luminant Mining Tract #146 George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;



- Luminant Mining Tract #265 Frances Montgomery Goates, et al, to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 176, called 42.273 acres;
- Luminant Mining Tract #265A E. Maxine Wigginton to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 173, called 0.99 acres;
- Luminant Mining Tract #265B, 265C James D. Maxton, et ux Fleda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 4.3 acres (Tract 265B) called 1.01 acres (Tract 265C);
- Luminant Mining Tract #565 Barbara Beth Joyner to Texas Utilities Mining Company, June 15, 1992, Volume 718, Page 161, called 60.03 acres;
- Luminant Mining Tract #700 Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 5.03 acres and being more completely described as follows to wit;

## METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYINIG PROPERTY CORNER" (LSPC) set for corner, which bears North 04 degrees 41 minutes and 23 seconds East, 514.70 feet and North 16 degrees 07 minutes and 25 seconds West, 396.96 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of the above mentioned 112.3 acre Luminant Mining Tract #146 and in the centerline of County Road #2400 and said point of beginning has a Texas North Central Coordinate value of (N: 549,410.60) (E: 2,756,521.66);

Thence across said tracts and along the Easterly North boundary line of a 815.3 acre tract surveyed this same date as follows;

North 60 degrees 41 minutes 15 seconds West, for a distance of 495.27 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 87 degrees 55 minutes 38 seconds West, for a distance of 900.46 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 84 degrees 01 minutes 05 seconds West, for a distance of 790.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 62 degrees 17 minutes 03 seconds West, for a distance of 81.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 75 degrees 58 minutes 27 seconds West, for a distance of 67.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 88 degrees 18 minutes 27 seconds West, for a distance of 106.17 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 90 degrees 00 minutes 00 seconds West, for a distance of 135.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 65 degrees 56 minutes 28 seconds West, for a distance of 37.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 26 degrees 04 minutes 16 seconds West, for a distance of 73.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 18 degrees 16 minutes 34 seconds West, for a distance of 77.29 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 14 degrees 24 minutes 48 seconds West, for a distance of 98.45 feet, to a point for corner;

North 14 degrees 24 minutes 48 seconds West, for a distance of 122.06 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 19 degrees 41 minutes 50 seconds West, for a distance of 95.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 44 degrees 35 minutes 29 seconds West, for a distance of 68.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 66 degrees 39 minutes 33 seconds West, for a distance of 71.31 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 82 degrees 52 minutes 52 seconds West, for a distance of 143.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



South 73 degrees 03 minutes 07 seconds West, for a distance of 168.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 39 degrees 46 minutes 32 seconds West, for a distance of 99.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 17 degrees 14 minutes 22 seconds West, for a distance of 100.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 14 degrees 26 minutes 20 seconds West, for a distance of 104.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 12 degrees 52 minutes 02 seconds West, for a distance of 105.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 39 degrees 20 minutes 15 seconds West, for a distance of 46.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 64 degrees 54 minutes 14 seconds West, for a distance of 100.28 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 73 degrees 08 minutes 31 seconds West, for a distance of 90.44 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 60 degrees 08 minutes 17 seconds West, for a distance of 109.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 80 degrees 02 minutes 40 seconds West, for a distance of 53.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and North 39 degrees 27 minutes 04 seconds West, for a distance of 1173.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner at a Northeast corner of said 815.3 acres;

Thence continuing across said tracts as follows;

North 27 degrees 31 minutes 22 seconds West, for a distance of 540.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 81 degrees 07 minutes 05 seconds East, for a distance of 447.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 79 degrees 56 minutes 11 seconds East, for a distance of 1192.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 83 degrees 26 minutes 00 seconds East, for a distance of 2122.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 47 degrees 43 minutes 33 seconds East, for a distance of 956.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 13 degrees 42 minutes 00 seconds East, for a distance of 1015.70 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 11 degrees 55 minutes 48 seconds West, for a distance of 422.32 feet, to the place of beginning, and containing **147.5** acres.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January 2021.

Daniel Lee Cooper R.P.L.S. No. 6148





January 14, 2021
Field Notes for Luminant Mining Company LLC
815.3 Acres

## Watershed Area

John Holbert Survey A-262 John H. Keith Survey A-321 Evander Leech Survey A-335 James H. Mitchell Survey A-376 Henry Teal Survey A-582 Titus County, Texas

#### GENERAL DESCRIPTION

All that certain tract, lot or parcel of land, a part of the John Holbert Survey A-262, a part of the John H. Keith Survey A-321, a part of the Evander Leech Survey A-335, a part of the James H. Mitchell Survey A-376 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #131 G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 34.86 acres, Tract No. 2;
- Luminant Mining Tract #138 G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 88.23 acres, Tract No. 3;
- Luminant Mining Tract #139 & 139A R.W. Stidham, et ux Juanita, to Texas Utilities Mining Company, January 12, 1987, Volume 508, Page 871, called 12.642 acres (Tract 139) called 8.794 acres (Tract 139A);
- Luminant Mining Tract #140 Harry B. Hutchins to Texas Utilities Generating Company, May 8, 1980, Volume 434, Page 72, called 12.865 acres;
- Luminant Mining Tract #141 Delma Gene France, et ux Callie Pauline France, to Texas Utilities Mining Company, December 18, 1985, Volume 493, Page 28, called 22.428 acres;
- Luminant Mining Tract #142 Nickie Paul Smith, et ux Brenda, to Texas Utilities Mining Company, December 9, 1991, Volume 687, Page 301, called 19.954 acres;



- Luminant Mining Tract 143 Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 33.22 acres;
- Luminant Mining Tract #146 George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;
- Luminant Mining Tract #258 Donald Rex Amerson, et ux Jerry, to Texas Utilities Generating Company, August 1, 1979, Volume 427, Page 695, called 17.9 acres:
- Luminant Mining Tract #259 & 260 G.B. Young, et al, to Texas Utilities Generating Company, October 23, 1979, Volume 429, Page 308, called 88.23 acres, further described as 56.95 acres (Field Notes dated March 14, 1984, R.P.L.S. #3889;
- Luminant Mining Tract #261 James L. Prewitt, et ux Deborah, to Texas Utilities Generating Company, September 5, 1979, Volume 428, Page 322, called 3 acres;
- Luminant Mining Tract #262 Jesse F. Haley, et ux Dorothy, to Texas Utilities Generating Company, June 15, 1982, Volume 454, Page 323, called 223.79 acres;
- Luminant Mining Tract 264 Loyd F. Phillips to Texas Utilities Mining Company, March 11, 1991, Volume 648, Page 1, called 14.987 acres;
- Luminant Mining Tract #265 Frances Montgomery Goates, et al, to Texas Utilities Mining Company, January 31, 1992, Volume 696, Page 176, called 42.273 acres;
- Luminant Mining Tract #265B James D. Maxton, et ux Fieda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 4.3 acres;
- Luminant Mining Tract #266 James D. Maxton, et ux Fleda, to Texas Utilities Mining Company, May 12, 1994, Volume 840, Page 241, called 14.98 acres;
- Luminant Mining Tract #267 Baxter C. Moore, et ux Martha, to Texas Utilities Mining Company, February 3, 1992, Volume 696, Page 280, called 7.99 acres;
- Luminant Ming Tract #268 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 6 acres;



- Luminant Mining Tract #269 Daisy Harris Dobbs, et vir, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 13.24 acres;
- Luminant Mining Tract #270 Daisy Harris Dobbs, et vir, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres;
- Luminant Mining Tract #271 George M. Betts, et ux Quida, to First Security Bank, May 12, 1998, Volume 1172, Page 260A, called 1.79 acres;
- Luminant Mining Tract #271A A.L. Starnes, et ux Ruth, to Texas Utilities Mining Company, July 15, 1993, Volume 784, Page 266, called 6.37 acres;
- Luminant Mining Tract #271B Albert V. Freeman, et ux Patricia, to Texas Utilities Mining Company, June 29, 1993, Volume 780, Page 238, called 5.86 acres;
- Luminant Mining Tract #271C Jerry Wayne Grissom, et ux Sandra, to Texas Utilities Mining Company, July 28, 1993, Volume 786, Page 305, called 5.08 acres;
- Luminant Mining Tract #271D Virginia Boyd to Texas Utilities Mining Company, December 7, 1993, Volume 812, Page 226, called 0.157 acres;
- Luminant Mining Tract #271E Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 15.73 acres;
- Luminant Mining Tract #271F James L. Clayton, et ux Edna, to BLC Corporation c/o TXU Mining Company, September 8, 2000, Volume 1275, Page 258, called 1.01 acres;
- Luminant Mining Tract #305 Hayward Rigano, et ux Jesilin, to Texas Utilities Mining Company, September 14, 1992, Volume 732, Page 79, called 92.89 acres;
- Luminant Mining Tract #306 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;
- Luminant Mining Tract #307 C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;
- Luminant Mining Tract #307A Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 3.27 acres;



- Luminant Mining Tract #312 Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993, Volume 789, Page 214, called 50.52 acres;
- Luminant Mining Tract #315 Ella Jacks, et al, to Texas Utilities Mining Company, April 27, 1990, Volume 606, Page 307, called 102.53 acres;
- Luminant Mining Tract #329 Jno. B. Stephens, Jr., et ux Elizabeth, to Texas Utilities Generating Company, June 23, 1980, Volume 435, Page 214, called 998.684 acres (includes tracts 329B, 329E, 329F & 329 G);
- Luminant Mining Tract #329A Tri-Water Supply Corporation to Texas Utilities Generating Company, September 19, 1983, Volume 467, Page 751, called 0.057 acres;
- Luminant Mining Tract #449 Edwin G. Sisk, et ux Bennie A., to Texas Utilities Generating Company, September 24, 1982, Volume 457, Page 3, called 9.53 acres;
- Luminant Mining Tract #451 Robert D. Caldwell, et ux Erma, to Texas Utilities Generating Company, February 8, 1980, Volume 431, Page 392, called 3.64 acres;
- Luminant Mining Tract #452 Harvey G. Landrum, et ux Patricia, to Texas Utilities Mining Company, April 2, 1985, Volume 484, Page 275, called 4.588 acres;
- Luminant Mining Tract #452A Kip Franklin Davis, et ux Cynthia, to Texas Utilities Mining Company, April 2, 1985, Volume 484, Page 273, called 0.5 acres;
- Luminant Mining Tract #453 & 454 O.M. Jackson, et ux Mildred, to Texas Utilities Generating Company, August 25, 1982, Volume 456, Page 155, called 14.94 acres;
- Luminant Mining Tract #455 Aubrey William Lunsford, et ux Roberta, to Texas Utilities Generating Company, March 20, 1980, Volume 433, Page 36, called 1 acre;
- Luminant Mining Tract #456 Douglas Hutchings, et ux Jo, to Texas Utilities Generating Company, September 15, 1980, Volume 437, Page 455, called 3.06 acres;
- Luminant Mining Tract #458 Montie A. Harkrider to Texas Utilities Mining Company, November 15, 1985, Volume 491, Page 807, called 1 acre;



- Luminant Mining Tract #459 Kenneth R. Gordon, et ux Janet, to Texas Utilities Generating Company, February 6, 1979, Volume 429, Page 528, called 1.96 acres;
- Luminant Mining Tract #460 Michael D. Kellam, et ux Debra, to Texas Utilities Mining Company, September 27, 1984, Volume 478, Page 338, called 2.01 acres;
- Luminant Mining Tract #461 Charles Edward Taylor to Texas Utilities Mining Company, July 30, 1986, Volume 501, Page 810, called 3.1 acres;
- Luminant Mining Tract #503 Carla G. Lehman, et vir Jimmy, to Texas Utilities Generating Company, December 2, 1982, Volume 458, Page 627, called 1 acre;
- Luminant Mining Tract #511 Charles Dwight Matthews, et ux Sue, to Texas Utilities Mining Company, November 15, 1985, Volume 491, Page 803, called 14.61 acres;
- Luminant Mining Tract #565 Barbara Beth Joyner to Texas Utilities Mining Company, June 15, 1992, Volume 718, Page 161, Called 60.03 acres;
- Luminant Mining Tract #657 Hayward Rigano, et ux Jesilin, to Texas Utilities Mining Company, September 14, 1992, Volume 732, Page 82, called 84.34 acres;
- Luminant Mining Tract #700 Jeanette Newman to Texas Utilities Mining Company, November 13, 1992, Volume 742, Page 28, called 5.03 acres;

## METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set for corner at the Southeast corner of a 147.5 acre tract surveyed this same date, which has a Texas North Central Coordinate value of (N: 549,410.60) (E: 2,756,521.66);

Thence South 16 degrees 07 minutes 25 seconds East, across the above mentioned 112.3 acre (Tract 146) for a distance of 396.96 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

Thence South 04 degrees 41 minutes 23 seconds West, for a distance of 514.70 feet, to a 1/2 inch iron rod found for corner at the Southeast corner of said 112.3 acres, at the Northeast corner of the above mentioned 5.08 acre (Tract 271C) in the West boundary line of the Bowie-Cass Electric



Cooperative, Inc., called 4.00 acre tract (Volume 385, Page 183) and being in the centerline of County Road #2400;

Thence South 01 degrees 07 minutes 32 seconds East, along the East boundary line of said 5.08 acres and along said West boundary line, for a distance of 230.89 feet, to a 10 inch wooden fence corner post found for corner at the Southwest corner of said 4.00 acres, at a Northwest corner of the William Scott Glover called 269.500 acre tract (Instrument #20194568) and being in the East right-of-way (R.O.W.) line of said County Road;

Thence South 01 degrees 09 minutes 41 seconds East, continuing along said East boundary line, the East boundary line of the above mentioned 6.37 acre (Tract 271A) the East boundary line of the above mentioned 66.7 acre (Tract 306) along the Southerly West boundary line of said 269.500 acres and along said road, for a distance of 1518.52 feet, to a P.K. nail found for corner at the Southwest corner of said 269.500 acres and at the Northwest corner of the William Scott Glover called 5.720 acre tract (Instrument #20180898 and being in the pavement of said County Road;

Thence South 00 degrees 31 minutes 51 seconds West, continuing along the East boundary line of said 66.7 acres and along the West boundary line of said 5.720 acres, for a distance of 501.72 feet, to a 1/2 inch iron rod found for corner at the Southwest corner of said 5.720 acres, at the Northwest corner of a 2.307 acre tract (Plat and Field Notes dated January, 2010, R.P.L.S. #4021) and being in the centerline of said County Road;

Thence South 00 degrees 12 minutes 51 seconds East, continuing along said East boundary line and along the West boundary line of said 2.307 acres and along said centerline, for a distance of 201.91 feet, to a 1/2 inch iron rod found for corner at the Southwest corner of said 2.307 acres and at the Northwest corner of a called 5.355 acre tract (Plat and Field Notes dated December, 2009, R.P.L.S. #4021);

Thence South 00 degrees 21 minutes 54 seconds East, continuing along said East boundary line, the East boundary line of the above mentioned 3.27 acre (Tract 307A) and along said centerline, for a distance of 618.39 feet, to a 60d nail with a Washer stamped "RPLS 4021" found for corner at the Southwest corner of the Farrell R. Elmore called 4.45 acre tract (Volume 762, Page 229) and at the Northwest corner of a 1.927 acre tract (Plat and Field Notes dated August 7, 2018, R.P.L.S. #6148);

Thence South 01 degrees 00 minutes 17 seconds East, continuing along said East boundary line, along the East boundary line of the above mentioned 69.2 acre (Tract 307) and along said centerline, for a distance of 287.13 feet, to a P.K. Nail with a washer stamped "RPLS 4021" set for corner;



Thence across the above mentioned tracts as follows;

South 07 degrees 17 minutes 33 seconds West, for a distance of 1156.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 18 degrees 06 minutes 20 seconds East, for a distance of 142.71 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 02 degrees 45 minutes 12 seconds West, for a distance of 178.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 42 degrees 23 minutes 41 seconds West, for a distance of 229.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 53 degrees 54 minutes 51 seconds West, for a distance of 102.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 31 degrees 17 minutes 47 seconds West, for a distance of 113.57 feet, to a point for corner;

South 76 degrees 53 minutes 35 seconds West, for a distance of 757.47 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 80 degrees 15 minutes 45 seconds West, for a distance of 235.26 feet, to a point for corner;

South 77 degrees 01 minutes 47 seconds West, for a distance of 233.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 86 degrees 03 minutes 35 seconds West, for a distance of 644.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 83 degrees 40 minutes 17 seconds West, for a distance of 1035.70 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 87 degrees 45 minutes 00 seconds West, for a distance of 613.52 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 07 degrees 17 minutes 26 seconds West, for a distance of 514.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 58 degrees 07 minutes 11 seconds East, for a distance of 862.49 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 57 degrees 50 minutes 04 seconds East, for a distance of 773.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 32 degrees 49 minutes 24 seconds East, for a distance of 582.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 29 degrees 00 minutes 39 seconds West, for a distance of 569.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 26 minutes 16 seconds East, for a distance of 379.96 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 30 degrees 52 minutes 38 seconds East, for a distance of 299.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 04 degrees 36 minutes 18 seconds East, for a distance of 441.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 10 degrees 58 minutes 15 seconds West, for a distance of 240.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 68 degrees 35 minutes 58 seconds West, for a distance of 179.48 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 70 degrees 47 minutes 12 seconds West, for a distance of 111.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 82 degrees 40 minutes 08 seconds West, for a distance of 203.07 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 88 degrees 45 minutes 30 seconds West, for a distance of 235.82 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



South 79 degrees 28 minutes 08 seconds West, for a distance of 653.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 77 degrees 59 minutes 47 seconds West, for a distance of 476.11 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 43 degrees 44 minutes 09 seconds West, for a distance of 418.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 58 degrees 59 minutes 19 seconds West, for a distance of 441.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 33 degrees 32 minutes 36 seconds West, for a distance of 430.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 71 degrees 08 minutes 02 seconds West, for a distance of 358.06 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 56 degrees 44 minutes 52 seconds West, for a distance of 292.27 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 52 degrees 43 minutes 20 seconds West, for a distance of 336.82 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 41 degrees 46 minutes 01 seconds West, for a distance of 454.24 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 55 degrees 10 minutes 18 seconds West, for a distance of 436.88 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 88 degrees 45 minutes 23 seconds West, for a distance of 764.14 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 41 degrees 12 minutes 38 seconds West, for a distance of 193.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 20 degrees 08 minutes 35 seconds West, for a distance of 387.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 00 degrees 32 minutes 27 seconds East, for a distance of 368.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 18 degrees 20 minutes 15 seconds West, for a distance of 599.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 10 degrees 52 minutes 38 seconds East, for a distance of 416.71 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 23 degrees 34 minutes 43 seconds East, for a distance of 979.63 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 63 degrees 25 minutes 26 seconds West, for a distance of 653.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 28 degrees 02 minutes 11 seconds East, for a distance of 464.68 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 83 degrees 21 minutes 48 seconds East, for a distance of 520.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 63 degrees 44 minutes 24 seconds East, for a distance of 754.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 84 degrees 41 minutes 04 seconds East, for a distance of 1318.39 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and North 87 degrees 15 minutes 52 seconds East, for a distance of 746.83 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner in the Northerly Northwest boundary line of said 147.5 acres;

Thence continuing across said tracts and along the Northwest and South boundary lines of said 147.5 acres as follows;

South 39 degrees 27 minutes 04 seconds East, for a distance of 1173.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 80 degrees 02 minutes 40 seconds East, for a distance of 53.30 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



North 60 degrees 08 minutes 17 seconds East, for a distance of 109.62 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 73 degrees 08 minutes 31 seconds East, for a distance of 90.44 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 64 degrees 54 minutes 14 seconds East, for a distance of 100.28 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 39 degrees 20 minutes 15 seconds East, for a distance of 46.90 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 12 degrees 52 minutes 02 seconds East, for a distance of 105.40 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 14 degrees 26 minutes 20 seconds East, for a distance of 104.42 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 17 degrees 14 minutes 22 seconds East, for a distance of 100.35 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 39 degrees 46 minutes 32 seconds East, for a distance of 99.81 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 73 degrees 03 minutes 07 seconds East, for a distance of 168.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 82 degrees 52 minutes 52 seconds East, for a distance of 143.64 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 66 degrees 39 minutes 33 seconds East, for a distance of 71.31 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 44 degrees 35 minutes 29 seconds East, for a distance of 68.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 19 degrees 41 minutes 50 seconds East, for a distance of 95.43 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;



South 14 degrees 24 minutes 48 seconds East, for a distance of 122.06 feet, to a point for corner;

South 14 degrees 24 minutes and 48 seconds East, for a distance of 98.45 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 18 degrees 16 minutes 34 seconds East, for a distance of 77.29 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 26 degrees 04 minutes 16 seconds East, for a distance of 73.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 65 degrees 56 minutes 28 seconds East, for a distance of 37.80 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 90 degrees 00 minutes 00 seconds East, for a distance of 135.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 88 degrees 18 minutes 27 seconds East, for a distance of 106.17 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 75 degrees 58 minutes 27 seconds East, for a distance of 67.25 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

South 62 degrees 17 minutes 03 seconds East, for a distance of 81.23 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 84 degrees 01 minutes 05 seconds East, for a distance of 790.05 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

North 87 degrees 55 minutes 38 seconds East, for a distance of 900.46 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set for corner;

and South 60 degrees 41 minutes 15 seconds East, for a distance of 495.27 feet, to the place of beginning, and containing **815.3 acres**.

Plat prepared of even date.



Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

DANIEL LEE COOPER
6148

OF ESSION
SURVEY



January 14, 2021
Field Notes for Luminant Mining Company LLC
Access Easement
20.00 Feet in Width
John H. Keith Survey A-321
Henry Teal Survey A-582
Titus County, Texas

#### **GENERAL DESCRIPTION**

Being an easement 20.00 feet in width, 10.00 feet each side of the following described line, located in the John H. Keith Survey A-321 and in the Henry Teal Survey A-582, Titus County, Texas, upon over and across those certain tracts of land listed below and being more completely described as follows to wit;

- Luminant Mining Tract #146 George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, Called 112.3 acres;
- Luminant Mining Tract #270 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres;
- Luminant Mining Tract #306 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;

#### **CENTERLINE DESCRIPTION**

Beginning at a point for corner in the East boundary line of the above mentioned 112.3 acre (Tract 146) in the West boundary line of the William Scott Glover called 269.500 acre tract (Instrument #20194568) and in County Road #2400, which bears South 00 degrees 26 minutes and 01 seconds East, a distance of 573.95 feet, from a bridge spike found for corner in the East boundary line of said 112.3 acres, at a Northwest corner of said 269.500 acres and at the Southwest corner of the Bowie-Cass Electric Cooperative, Inc. called 1.500 acre tract (Volume 400, Page 373) and said point also bears North 00 degrees 26 minutes and 01 seconds West, a distance of 1159.57 feet, from a 1/2 inch iron rod found for corner at an angle corner in the East line of said 12.96 acres, and said beginning point has a Texas North Central Coordinate value of (N:550,251.50) (E: 2,756,696.08);

Thence across said tracts as follows;



North 90 degrees 00 minutes 00 seconds West, for a distance of 328.36 feet, to a point at an angle point;

South 83 degrees 09 minutes 49 seconds West, for a distance of 76.24 feet, to a point at an angle point;

South 58 degrees 15 minutes 51 seconds West, for a distance of 35.12 feet, to a point at an angle point;

South 42 degrees 00 minutes 49 seconds West, for a distance of 39.34 feet, to a point at an angle point;

South 25 degrees 29 minutes 02 seconds West, for a distance of 34.99 feet, to a point at an angle point;

South 25 degrees 02 minutes 14 seconds West, for a distance of 23.60 feet, to a point at an angle point;

South 01 degrees 08 minutes 21 seconds East, for a distance of 235.10 feet, to a point at an angle point;

South 05 degrees 21 minutes 39 seconds West, for a distance of 55.74 feet, to a point at an angle point;

South 57 degrees 34 minutes 21 seconds West, for a distance of 40.27 feet, to a point at an angle point;

South 56 degrees 20 minutes 04 seconds West, for a distance of 19.59 feet, to a point at an angle point;

South 25 degrees 02 minutes 14 seconds West, for a distance of 23.30 feet, to a point at an angle point;

South 26 degrees 35 minutes 10 seconds West, for a distance of 33.92 feet, to a point at an angle point;

South 11 degrees 53 minutes 57 seconds West, for a distance of 28.46 feet, to a point at an angle point;



South 03 degrees 52 minutes 55 seconds West, for a distance of 91.89 feet, to a point at an angle point;

South 02 degrees 09 minutes 47 seconds West, for a distance of 87.41 feet, to a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set at an angle point;

South 49 degrees 25 minutes 30 seconds West, for a distance of 23.55 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 80 degrees 08 minutes 35 seconds West, for a distance of 41.60 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 77 degrees 19 minutes 51 seconds West, for a distance of 64.94 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 73 degrees 30 minutes 36 seconds West, for a distance of 42.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 88 degrees 18 minutes 35 seconds West, for a distance of 369.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 80 degrees 00 minutes 09 seconds West, for a distance of 355.16 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 82 degrees 34 minutes 31 seconds West, for a distance of 21.85 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 68 degrees 46 minutes 03 seconds West, for a distance of 16.87 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 58 degrees 08 minutes 39 seconds West, for a distance of 75.02 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 25 degrees 42 minutes 24 seconds West, for a distance of 148.39 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 03 degrees 18 minutes 34 seconds West, for a distance of 147.51 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;



South 03 degrees 08 minutes 38 seconds East, for a distance of 161.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 01 degrees 09 minutes 53 seconds East, for a distance of 422.34 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 03 degrees 09 minutes 25 seconds West, for a distance of 101.15 feet, to a 1/2 inch iron rod with a c ap stamped (LSPC) set at an angle point;

South 06 degrees 14 minutes 04 seconds West, for a distance of 188.72 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 07 degrees 10 minutes 34 seconds West, for a distance of 130.92 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 00 degrees 09 minutes 27 seconds West, for a distance of 733.49 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

South 00 degrees 36 minutes 06 seconds West, for a distance of 278.99 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

and South 06 degrees 03 minutes 31 seconds East, for a distance of 346.53 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at the end of said easement.

Plat Prepared of Even Date.

Grid coordinates and bearings based on Texas State Plane Coordinates, North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

Daniel Le Cooper

DANIEL LEE COOPER

6148

60 FESSIONE

SURVEYOR

**Ild Notes for Access Easement** 



January 14, 2021
Field Notes for Luminant Mining Company LLC
South Access Road Easement
20.00 Feet in Width
John H. Keith Survey A-321
Titus County, Texas

#### **GENERAL DESCRIPTION**

Being an easement 20.00 feet in width, 10.00 feet each side of the following described line, located in the John H. Keith Survey A-321, Titus County, Texas, upon over and across those certain tracts of land listed below and being more completely described as follows to wit;

- Luminant Mining Tract #307 C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;
- Luminant Mining Tract #312 Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993. Volume 789, Page 214, called 50.52 acres;

#### CENTERLINE DESCRIPTION

Beginning at a point in the East boundary line of the above mentioned 50.52 acre (Tract 312) and in the centerline of County Road #2400, which bears South 00 degrees 47 minutes and 41 seconds East, a distance of 575.69 feet, from a 1/2 inch iron rod found for corner at the Northeast corner of said 50.52 acres and at the Southeast corner of said 69.2 acres and said beginning point has a Texas North Central Coordinate value of (N: 543,301.10) (E: 2,756,660.66);

Thence across said 50.52 acres as follows:

South 88 degrees 52 minutes 40 seconds West, for a distance of 61.92 feet, to a 1/2 inch iron rod with a cap stamped "LACY SURVEYING PROPERTY CORNER" (LSPC) set at an angle point;

North 37 degrees 10 minutes 20 seconds West, for a distance of 34.04 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 07 degrees 44 minutes 26 seconds West, for a distance of 77.18 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;



North 21 degrees 31 minutes 10 seconds East, for a distance of 34.54 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 05 degrees 47 minutes 53 seconds East, for a distance of 72.78 feet, to a 1/2 inch iron rod with a cap stamped 9LSPC) set at an angle point;

North 10 degrees 53 minutes 43 seconds West, for a distance of 81.73 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

North 12 degrees 57 minutes 15 seconds West, for a distance of 166.93 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at an angle point;

and North 15 degrees 00 minutes 42 seconds West, continuing across said 50.52 acres and across said 69.2 acres, for a distance of 153.36 feet, to a 1/2 inch iron rod with a cap stamped (LSPC) set at the end of said easement.

Plat Prepared of Even Date.

Grid coordinates and bearings based on Texas State Plane Coordinates, North Central Zone 4202, NAD 27, Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision during the month of December, 2020.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

Daniel Le Cooper

DANIEL LEE COOPER

POFESSIONAL SURVEY



January 14, 2021
Field Notes for Luminant Mining Company LLC

143.7 Acres

GR-20 Pond

John H. Keith Survey A-321

Henry Teal Survey A-582

Titus County, Texas

#### **GENERAL DESCRIPTION**

All that certain tract, lot or parcel of land, a part of the John H. Keith Survey A-321 and a part of the Henry Teal Survey A-582, Titus County, Texas and also being all or a part of the following tracts of land;

- Luminant Mining Tract #146 George E. Walthall, et ux Pauline, to Texas Utilities Mining Company, December 9, 1992, Volume 745, Page 79, called 112.3 acres;
- Luminant Mining Tract #270 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 12.96 acres:
- Luminant Mining Tract #271 George M. Betts, et ux Quida, to First Security Bank, May 12, 1998, Volume 1172, Page 260A, called 1.779 acres;
- Luminant Mining Tract #271A A.L. Starnes, et ux Ruth, to Texas Utilities Mining Company, July 15, 1993, Volume 784, Page 266, called 6.37 acres;
- Luminant Mining Tract #271B Albert V. Freeman, et ux Patricia, to Texas Utilities Mining Company, June 29, 1993, Volume 780, Page 238, called 5.86 acres;
- Luminant Mining Tract #271C Jerry Wayne Grissom, et ux Sandra, to Texas Utilities Mining Company, July 28, 1993, Volume 786, Page 305, called 5.08 acres;
- Luminant Mining Tract #271D Virginia Boyd to Texas Utilities Mining Company, December 7, 1993, Volume 812, Page 226, called 0.157 acres;
- Luminant Mining Tract #271E Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 15.73 acres;



- Luminant Mining Tract # 271F James L. Clayton, et ux Edna, to BLC Corporation c/o TXU Mining Company, September 8, 2000, Volume 1275, Page 258, called 1.01 acres;
- Luminant Mining Tract #306 Daisy Harris Dobbs, et vir Bill, to Texas Utilities Mining Company, December 10, 1993, Volume 812, Page 287, called 66.7 acres;
- Luminant Mining Tract #307 C.H. Meyer, et ux Carol, to Texas Utilities Mining Company, August 30, 1989, Volume 575, Page 144, called 69.2 acres;
- Luminant Mining Tract #307A Brian Betts, et ux Velda, to BLC Corporation c/o TXU Mining Company, December 12, 2001, Volume 1372, Page 168, called 3.27 acres;
- Luminant Mining Tract #312 Aline B. Arnold to Texas Utilities Mining Company, August 13, 1993, Volume 789, Page 214, called 50.52 acres;
- Luminant Mining Tract #329 Jno. B. Stephens, Jr., et ux Elizabeth, to Texas Utilities Generating Company, June 23, 1980, Volume 435, Page 214, called 998.684 acres and being more completely described as follows to wit;

#### METES AND BOUNDS DESCRIPTION

Beginning at a 1/2 inch iron rod with a cap stamped "Lacy Surveying Property Corner" set for corner, which bears North 58 degrees 53 minutes and 21 seconds West, a distance of 628.92 feet, from a 1/2 inch iron rod found for corner at the Southeast corner of the above mentioned 112.3 acres Luminant Mining Tract #146, at the Northeast corner of the above mentioned 5.08 acres Luminant Mining Tract #271C and being in the centerline of County Road #2400, and said beginning iron rod has a Texas North Central Coordinate value of (N: 548,841.32) (E: 2756051.41);

Thence across the above mentioned tracts as follows;

South 00 degrees 12 minutes 20 seconds East, for a distance of 2968.31 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 00 degrees 49 minutes 16 seconds West, for a distance of 627.97 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 19 degrees 17 minutes 44 seconds East, for a distance of 408.24 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;



South 06 degrees 22 minutes 16 seconds East, for a distance of 473.86 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 65 degrees 19 minutes 35 seconds East, for a distance of 108.77 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 14 degrees 14 minutes 22 seconds East, for a distance of 615.69 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 74 degrees 54 minutes 35 seconds West, for a distance of 136.97 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 42 degrees 58 minutes 00 seconds West, for a distance of 169.01 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 62 degrees 32 minutes 42 seconds West, for a distance of 159.00 feet, to a point for corner;

South 83 degrees 38 minutes 04 seconds West, for a distance of 1505.73 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 33 degrees 56 minutes 27 seconds East, for a distance of 808.47 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 00 degrees 10 minutes 28 seconds West, for a distance of 1969.36 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 19 degrees 09 minutes 02 seconds East, for a distance of 438.09 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 08 degrees 47 minutes 32 seconds West, for a distance of 606.50 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 00 degrees 54 minutes 50 seconds East, for a distance of 1127.53 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 02 degrees 38 minutes 42 seconds East, for a distance of 1169.81 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

North 42 degrees 27 minutes 51 seconds East, for a distance of 184.06 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;



North 84 degrees 47 minutes 11 seconds East, for a distance of 688.56 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 49 degrees 30 minutes 42 seconds East, for a distance of 171.11 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

South 09 degrees 38 minutes 32 seconds West, for a distance of 275.03 feet, to a 1/2 inch iron rod with cap stamped "Lacy Surveying Property Corner" set for corner;

and South 03 degrees 33 minutes 43 seconds West, for a distance of 271.68 feet, to the place of beginning, and containing **143.7 acres**.

Plat prepared of even date.

Grid coordinates and bearings based on Texas State Plane Coordinate system, Texas North Central Zone 4202, NAD 27. Distances and acreage recited in surface. Scale factor = 0.9998552.

I, **DANIEL LEE COOPER**, Registered Professional Land Surveyor No. 6148, do hereby certify that the above field notes were prepared from an actual survey made on the ground under my direction and supervision, during the month of December, 2020 and January, 2021.

GIVEN UNDER MY HAND AND SEAL, this the 14th day of January, 2021.

Daniel Lee Cooper R.P.L.S. No. 6148

SURVEY OF

DANIEL LEE COOPER



#### **EXHIBIT G**

#### **Environmental Permits**

- 1. Railroad Commission of Texas, Permit No. 34 F. Last renewed March 25, 2014. Expiration only on closure of bond and permit.
- 2. Railroad Commission of Texas, Coal Exploration Permit No. 140. Last renewed May 26, 2020.
- Texas Commission on Environmental Quality, Texas Pollutants Discharge Elimination System, Industrial Wastewater Permit No. WQ0002697000. Issued May 13, 2019. Expires May 13, 2024. Renew DATE December 1, 2023.
- 4. Texas Commission on Environmental Quality, Ash Disposal Area, Non-Hazardous Landfill Solid Waste Registration No. 30081. Original 1991. Expansion 1996 and 2008.
- 5. US Army Corps of Engineers, Nationwide 49 SWF-201700452. Issued April 24, 2018. Valid until March 18, 2022.
- US Army Corps of Engineers, Nationwide 21 SWF-200600563. Issued March 31, 2009.
   Reauthorized April 29, 2011, Reauthorized February 20,2013 Valid till March 18, 2017. Open until mitigation complete.
- 7. US Army Corps of Engineers, Nationwide 21 SWF-200000432. Issued March 23, 2001. Valid until March 31, 2009. Open until mitigation complete.
- 8. US Army Corps of Engineers, Nationwide 21 SWF-199700336. Issued July 1, 1997. Valid until March 23, 2001. Open until mitigation complete.
- 9. US Army Corps of Engineers, Nationwide 21 SWF-199200184. Issued April 9, 1992. Valid until July 1, 1997. Open until mitigation complete.

#### EXHIBIT H

## NETMWD BOARD AUTHORIZATION TO EXECUTE

#### RESOLUTION NO. 2021-02

THE STATE OF TEXAS	§
NODELLE COMPANY	§
NORTHEAST TEXAS	§
MUNICIPAL WATER DISTRICT	8

A RESOLUTION AUTHORIZING THE EXECUTION OF A DEVELOPMENT AGREEMENT AND RELATED DOCUMENTS WITH LUMINANT GENERATION COMPANY, LLC AND LUMINANT MINING COMPANY, LLC. AND TO FILE APPLICATIONS WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RELATED TO THE AGREEMENT

WHEREAS, the Northeast Texas Municipal Water District (the "District") is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Luminant Generation Company LLC, a Texas limited liability company and Luminant Mining Company LLC, a Texas limited liability company (together "Luminant") own property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property having been permitted for mining operations is no longer operated as a mine and is going through reclamation pursuant to the Railroad Commission of Texas requirements ("Reclamation"); and

WHEREAS, the Property contains certain final mining pits that upon completion of Reclamation will have the capacity to impound and store water which can then be pumped into tributaries of the Basin (the "Mining Pits"); and

WHEREAS, there has been increasing state legislative interest in the feasibility and desirability of converting quarries and surface mine pits for the use as water storage reservoirs to enhance the state's available water supply; and

WHEREAS, the District, under the direction of the Board of Directors, has been in negotiations with Luminant about the use of its Mining Pits for water supply purposes; and

WHEREAS, the District has found that the water from the Mining Pits, if made available to the Basin, will be put to a beneficial use, serve a public purpose, be in the best interest and welfare of the public and provide long-term benefit to the environmental condition of the Basin, including improved water quality, seasonal flows and the reintroduction, together with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department, of the American paddlefish (Polyodon spathula) to the Basin; and

WHEREAS, the District and Luminant have negotiated a Development Agreement under which the District will acquire the right to store water in and release water from the Mining Pits to tributaries of the Basin for the furtherance of the above purposes (the "Development Agreement"); and

WHEREAS, the District now desires to execute the Development Agreement and to authorize its Executive Director, on behalf of the District, to prepare and execute such Development Agreement and all associated documents.

NOW, THEREFORE, THE BOARD OF DIRECTORS IN ITS REGULAR MEETING RESOLVES THAT:

- 1. The above recitals are true and correct.
- 2. The Board of Directors of the District hereby direct the Executive Director to prepare and execute the Development Agreement with Luminant.
- 3. The Executive Director of the District is further authorized to take any and all action necessary to implement this Development Agreement, including but not limited to the execution of all other documents associated with or necessary to implement the terms of the Development Agreement and the filing of any water rights or other applications with the Texas Commission on Environmental Quality for the necessary authorizations to implement the terms of the Development Agreement.
- 4. The Executive Director of the District is further authorized to take any and all action necessary to coordinate with Luminant as may be required in order to implement the terms of the Development Agreement.

THIS RESOLUTION ADOPTED BY THE DISTRICT BOARD OF DIRECTORS IN A REGULAR MEETING ON MAY 24, 2021.

By:

Preci

Sect

## EXHIBIT I

## FORM OF WATER STORAGE AGREEMENT

# Water Storage Agreement for the Luminant Monticello Winfield South Mine

WHEREAS, this Water Storage Agreement (the "Agreement") is entered into between the Northeast Texas Municipal Water District (the "District") and Luminant Generation Company LLC and Luminant Mining Company LLC (together, "Luminant"); and

WHEREAS, the District is a conservation and reclamation district created in 1953 under Article XVI, Section 59 of the Texas Constitution; and

WHEREAS, the District was created by the Texas Legislature to, among other things, serve the water needs of its member cities and to manage the Big Cypress Creek Basin (the "Basin") and associated reservoirs, including Lake O' the Pines; and

WHEREAS, the District seeks additional water supply in the upper end of the Basin for beneficial downstream uses during critical low-flow and drought conditions within the Basin; and

WHEREAS, Luminant owns property known as the Monticello Winfield South Mine, located in or near Winfield, Texas, in the Tankersley Creek region of the Basin (the "Property"); and

WHEREAS, the Property was once permitted for mining operations by the Railroad Commission of Texas ("RRC") but ceased such operations on January 15, 2015 and is now subject to the reclamation requirements of the RRC; and

WHEREAS, the Property contains the final mining pit Pond GR-20 that is interconnected by hydrology and/or pumping operations with Ponds GR-17, GR-18 and GR-19, as shown on Exhibit A (collectively, the "Ponds"); and

WHEREAS, Pond GR-20 has the capacity to impound and store approximately 6,810 acrefeet of water on approximately 143 surface acres of land with a total watershed of approximately 815 acres, and such water can be discharged into tributaries of the Basin or into Pond GR-17 for storage before being discharged into tributaries of the Basin; and

WHEREAS, on	_, the District and Luminant entered into a Development
Agreement whereby Luminant a	greed to grant the District access to and use of Pond GR-20 and
GR-17 for water storage, manage	ement, and release into tributaries of the Basin if the District
	nts for such use and Pond GR-20 and the Ponds were declared action by the RRC (the "Development Agreement"); and
WHEREAS, on	the District secured from the Texas Commission on

Environmental ("TCEQ") Water Use Permit No. \_\_\_\_\_\_ for the storage of 6,810 acrefeet of water in Pond GR-20 and an annual release of not less than 500 acre-feet of water into tributaries of the Basin; and

WHEREAS, Luminant will secure from the RRC full approval for the reclamation, permanent status of the Ponds and timely release of the Property from reclamation obligations by the RRC during the course of this Agreement; and

WHEREAS, the District desires to store water in Pond GR-20 and release water from the Ponds pursuant to the terms outlined in the Development Agreement between the District and Luminant.

NOW, THEREFORE, the parties agree as follows:

1.	Water Storage Space. The District shall have the right to utilize the water storage space of Pond GR-20, as shown on Exhibit A, to impound and store at least 6,810 acre-feet of water (the "Water Storage Space") and subsequently discharge at least 500 acre-feet of such water annually into tributaries of the Basin from the north, east, or south sides of the perimeter of Pond GR-20 and the adjacent property lines of the Property on each of those sides of such perimeter, or into Pond GR-17 for storage before subsequently discharging such water from Pond GR-17 into tributaries of the Basin, as authorized by TCEQ Water Use Permit No and contemplated in the Development Agreement between the District and Luminant. The discharge of water from Pond GR-20 or Pond GR-17 by the District will be made at any time so long as the water is available, the water meets applicable TCEQ water quality standards, and the District is in compliance with TCEQ Water Use Permit No
2.	State Law. The District shall utilize the Water Storage Space in a manner consistent with the laws of the State of Texas and TCEQ Water Use Permit No This Agreement is subject to all conditions, provisions, and limitations included in TCEQ Water Use Permit No Further, this Agreement is subject to all applicable Federal, State and local laws, and any applicable ordinances, rules, orders and regulations of any local, State or Federal governmental authority having jurisdiction. However, nothing contained in this Agreement shall be construed as a waiver of any right to question or contest any law, ordinance, order, rule, or regulation of any governmental authority.
3.	Consideration. In consideration of Luminant's provision to the District of the rights to the Water Storage Space as outlined in Section 1 and of the rights for the District to access and use the Water Storage Space as set forth herein and in the Development Agreement, it is agreed that the District shall make an annual payment to Luminant of \$100,000 for such right.
4.	Date of Payments. In accordance with the provision of Section 3, the District shall pay to Luminant the first annual payment of \$100,000 no later than Beginning in year, each subsequent annual payment will be due by of each year.
5.	Term. This Agreement shall become effective on the date this Agreement is fully executed

by both the District and Luminant ("Effective Date") and continue for fifty (50) years

("Term"). Prior to the termination of the Term and by mutual agreement, the District and Luminant may extend this Agreement for additional periods of five (5) years each.

#### 6. Remedies for Nonpayment or Default.

- a. In the event sufficient water is not available to allow for the storage of approximately 6,810 acre-feet of water or water reaching Ponds GR-20 or GR-17 is not of a quality that can be released into the Basin for a beneficial use or is not of a quality that is in accordance with the applicable TCEQ water quality standards for discharge into the Basin, the District may, in addition to and without impairing any other remedy available to it, unilaterally terminate its obligation under this Agreement by providing 30 days written notice of such termination delivered to Luminant and providing Luminant with a reasonable opportunity to cure the default (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given).
- b. In the event the District fails to make any payment to Luminant when due under this Agreement or otherwise be in default under this Agreement, Luminant at its sole option and in addition to and without impairing any other remedy available to it on account of the default, may elect to either (i) temporarily suspend its duty to make Water Storage Space available to the District under this Agreement, or (ii) unilaterally terminate this Agreement by providing 30 days written notice of such termination delivered to the District and providing the District with a reasonable opportunity to cure the default (such reasonable time determined based on the nature of the alleged failure, but in no event less than thirty (30) days after written notice of the alleged failure has been given). Nothing in this Agreement shall be construed in any manner so as to abridge, limit, or deprive either party of any means which it would otherwise have or enforcing any right or remedy either in law or in equity for breach of any of the provisions contained in this Agreement.
- 7. Operation and Maintenance. Luminant shall, at Luminant's sole cost and expense, maintain Pond GR-20 and the Ponds in compliance with all applicable laws for the purposes expressed herein; provided, however that the District shall be responsible, at the District's sole cost and expense, for all maintenance related to the intake, release and/or use of the water contained in Pond GR-20 and all repairs resulting from the District's negligence in operation of Pond GR-20. Luminant shall not alter the Ponds or Pond GR-20 in any manner that would prevent either 1) water being stored in and flowing from ponds GR-18 and GR-19 into Pond GR-20, or 2) water from Pond GR-20 being transferred to, stored in, and released from Pond GR-17 into the Basin. Luminant shall not divert water from the Ponds or the watersheds serving the Ponds for any purpose. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title. The District shall have a right to make releases of water into tributaries of the Basin in accordance with the terms of this Agreement.
- 8. <u>Preserving the Watersheds</u>. Luminant shall have an ongoing obligation to help preserve the 815-acre watershed that serves Pond GR-20 and the 147-acre watershed that serves pit GR-17. Luminant shall not take any action to alter the contributing 815-acre watershed of

Pond GR-20 or the contributing 147-acre watershed of Pond GR-17 so as to prevent water within these watersheds from reaching Pond GR-20 and Pond GR-17, respectively. Luminant shall not take any action that would cause water quality contamination of the contributing 815-acre watershed of Pond GR-20 or the contributing 147-acre watershed of Pond GR-17. This obligation shall run with the land and shall be binding upon Luminant's successors and/or assigns in title.

- 9. Access and Inundation Easement. Pursuant to the terms outlined in the Development Agreement, Luminant will grant to the District by separate instrument an access and inundation easement to facilitate the use of Pond GR-20 and Pond GR-17 for the storage of water and for the construction, operation and maintenance of the facilities necessary for the discharge of water from the Ponds into tributaries of the Basin.
- 10. <u>Release of Claims</u>. The District shall hold and save Luminant, including its officers, agents, and employees, harmless from liability of any nature or kind for or on account of any claim for damages which may be filed or asserted as a result of releases of water from the Ponds by the District, or as a result of the construction, operation, or maintenance of the features or appurtenances owned and operated by the District.
- 11. <u>Assignment</u>. Any assignment of the District's rights and obligations hereunder will not be effective unless first agreed to in writing by Luminant, whose consent and agreement shall not be unreasonably withheld. This restriction shall not be construed to apply to any water which may be obtained from the Water Storage Space by the District and furnished to any third party or parties. Any assignment of Luminant's rights and obligations hereunder to a person or entity that is not affiliated with or otherwise legally related to Luminant will not be effective unless first agreed to in writing by the District, whose consent and agreement shall not be unreasonably withheld.
- 12. No Obligation. This Agreement does not create an obligation by the District to store or release water from Pond GR-20 or to maintain existing pumping structures (specifically excluding any facilities added by the District) associated with the storage of water in and release of water from Pond GR-20 or Pond GR-17.
- 13. Notices. Any notice or payment made under this Agreement shall be deemed received on the actual receipt by mail, Federal Express or other delivery service, fax, email or hand delivery, addressed to Luminant or the District, as the case may be, at the addresses provided below:

#### The District:

P.O. Box 955 Hughes Springs, Texas 75656 Attn: Executive Director

Email:

#### Luminant:

6555 Sierra Drive Irving, Texas 75039

Attn: General Counsel (Real Estate)

Email:

- 14. Severability. The provisions of this Agreement are severable, and if for any reason any one or more of the provisions contained in this Agreement shall be held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability shall not affect any other provisions of this Agreement and this Agreement shall remain in effect and be construed as if the invalid, illegal, or unenforceable provision had never been contained in the Agreement.
- 15. Force Majeure. Notwithstanding anything herein to the contrary, neither party shall be under any liability or be deemed in default with respect to its obligations under this Agreement for any failure to perform or for delay in performing such party's obligations (except for the obligation to pay money) where such failure or delay is due to force majeure, while and to the extent that such performance is prevented by such cause. The term force majeure means acts of God, fire, storm, flood, war, riots, sabotage, drought, lack of availability of water due to sedimentation, low inflows of water, strikes or other differences with labor (whether or not within the power of the parties to settle same), decrees or orders of the courts or other governmental authority, or other similar or dissimilar causes not within the reasonable control of such party and not due to negligence of such party. Each party shall use due diligence to resume performance of any obligation suspended by force majeure at the earliest practicable time.

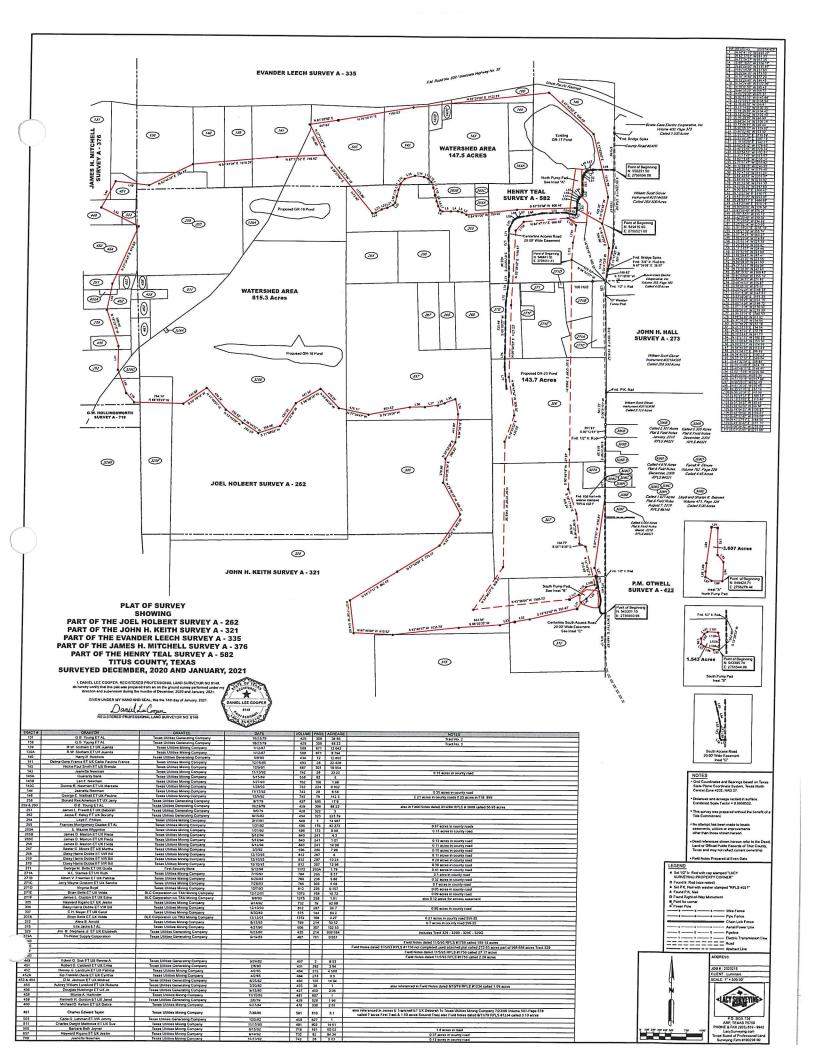
[Remainder of the page intentionally left blank.]

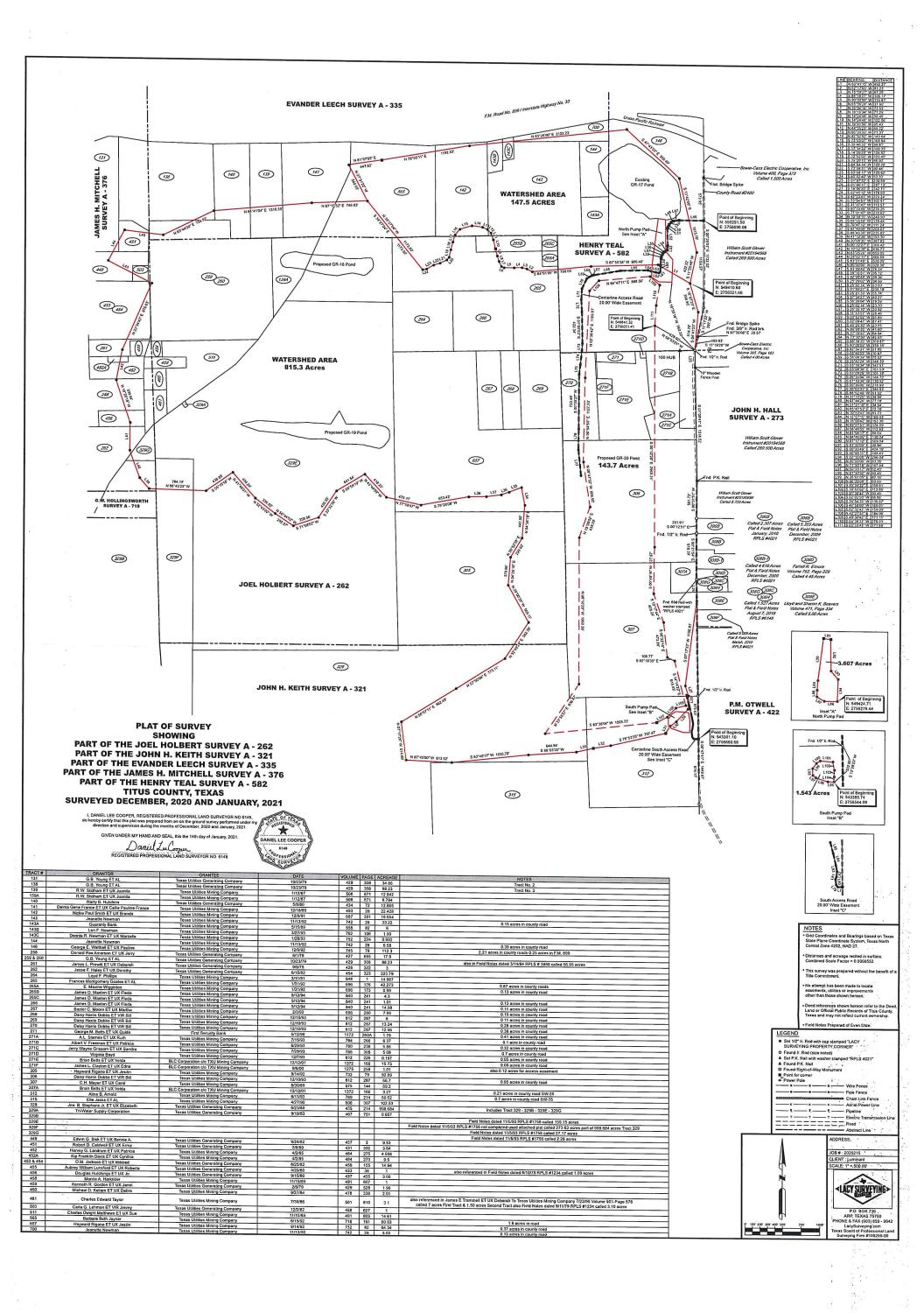
The parties have executed this Agreement on the day and year written below.

# The District:

Northeast Texas Municipal Water District
By:
Name:
Title:
Date:
Luminant:  Luminant Generation Company LLC, a Texas limited liability company
By:
Name:
Title:
Date:
Luminant Mining Company LLC, a Texas limited liability company
By:
Name:
Title:
Date:

## Exhibit A – The Ponds





#### 7.a. Water Quality Sampling Summary

In 2018, Randy Rushin with Water Monitoring Solutions Conducted water quality sampling of the Proposed GR-20 Pond on two dates. The information gathered during those sampling sessions is summarized in the charts below. Please note that samples were not analyzed for TDS (this is not part of the routine TCEQ SWQM/CRP monitoring in the Cypress Creek Basin). Thus, TDS was calculated by multiplying conductivity by 0.65.

8/7/2018	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	64.6	67.0	4	Routine grab	8/7/18 08:30 - 09:15
Chloride (mg/L)	5.36	5.62	4		
TDS (mg/L) *	181	187	33		
pH, standard units	8.06	8.45	33		
Temperature, degrees Celsius	24.90	29.92	33		

10/30/2018	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	62.88	63.0	4	Routine grab	10/30/18 08:55 - 09:30
Chloride (mg/L)	5.45	5.51	4		
TDS (mg/L) *	180	207	29		
pH, standard units	7.61	7.78	29		
Temperature, degrees Celsius	19.27	20.57	29		

ALL DATA	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate (mg/L)	63.74	67.0	8	Routine grab	8/7 and 10/30/18 08:30 -
Chloride (mg/L)	5.41	5.62	8		
TDS (mg/L) *	181	207	62		
pH, standard units	7.84	8.45	62		
Temperature, degrees Celsius	22.09	29.92	62		09:30

Additionally, please note that the results of the special studies in the Tankersley Creek watershed can be found on the NETMWD site. Please see the 2021 Cypress Creek Basin Highlights Report: <a href="https://netmwd.com/documents/1216/2021 Cypress Creek Basin Highlights Report Approved.pdf">https://netmwd.com/documents/1216/2021 Cypress Creek Basin Highlights Report Approved.pdf</a>. The genesis of these studies is discussed in the findings reported in the 2019 Basin Summary Report at: <a href="https://netmwd.com/documents/1216/FY">https://netmwd.com/documents/1216/FY</a> 2019 Cypress Basin Summary Report.pdf. These studies are referenced here to provide context regarding the water quality in Big Cypress Creek and are not associated with this pending water rights application.

Attached as 7.b. is a copy of the current TPDES Permit No. WQ0002697000 for Luminant Mining Company LLC's Monticello Lignite Mining Area. The discharge point from the GR-17 pond into Dragoo Creek (named G-13 in the TPDES permit) is associated with outfall 005 in the TPDES permit. As provided in Other Requirement 3.d., discharges from this outfall will be monitored until reclamation of the disturbed soils has been completed and the Phase Two performance bond is released by the Texas Railroad Commission.



# REC'D MAY 2 2 2019

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2019

Mr. Justin Ewing, Sr. Environmental Specialist Luminant Mining Company LLC Environmental Services 6555 Sierra Drive Irving, Texas 75039

Re:

Luminant Mining Company LLC

TPDES Permit No. WQ0002697000, (CN603263773; RN102805900)

Dear Mr. Ewing:

Enclosed is a copy of the above referenced water quality permit issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form (if needed) when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit, as applicable.

Should you have any questions, please contact Ms. Melinda Luxemburg, P.E. of the Texas Commission on Environmental Quality's (TCEQ) Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

David W. Galindo, Director

Water Quality Division

DWG/ML/kb

cc: Mr. Gary Spicer, Environmental Services Water Quality & Solid Waste Manager, Luminant Mining Company LLC, Environmental Services Mining, 6555 Sierra Drive, Irving, Texas 75039 Jon Niermann, Chairman Emily Lindley, Commissioner Toby Baker, Executive Director



### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2019

TO: Persons on the attached mailing list.

RE: Luminant Mining Company LLC Permit No. WQ0002697000

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has acted on the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the ED's action became effective on May 13, 2019, the date the ED signed the permit or other action unless otherwise specified in the permit or other action.

For certain matters, a **motion to overturn**, which is a request that the commission review the ED's action on an application, may be filed with the chief clerk. Whether a motion to overturn is procedurally available for a specific matter is determined by Title 30 of the Texas Administrative Code Chapter 50. According to 30 TAC Section 50.139, an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

If a motion to overturn is filed, the motion must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person, or by mail to the chief clerk's address on the attached mailing list. On the same day the motion is transmitted to the chief clerk, please provide copies to the applicant, the ED's attorney, and the Public Interest Counsel at the addresses listed on the attached mailing list. If a motion to overturn is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's action. The procedure and timelines for seeking judicial review of a commission or ED order are governed by Texas Water Code Section 5.351.

Individual members of the public may seek further information by calling the Public Education Program, toll free, at 1-800-687-4040.

Sincerely,

Bridget C. Bohac Chief Clerk

BCB/dcp

Enclosure

# MAILING LIST for

Luminant Mining Company LLC Permit No. WQ0002697000

#### FOR THE APPLICANT:

Justin Ewing Sr. Environmental Specialist Luminant Mining Company LLC Environmental Services Mining 6555 Sierra Drive Irving, Texas 75039

Gary Spicer
Environmental Services Water Quality & Solid Waste Manager
Luminant Mining Company LLC
Environmental Services Mining
6555 Sierra Drive
Irving, Texas 75039

# PROTESTANTS/INTERESTED PERSONS:

Erin E. Fonken Environmental Integrity Project 707 Rio Grande Street, Suite 200 Austin, Texas 78701

# FOR THE EXECUTIVE DIRECTOR via electronic mail:

Ryan Vise, Director Texas Commission on Environmental Quality External Relations Division Public Education Program MC 108 P.O. Box 13087 Austin, Texas 78711-3087

Todd Galiga, Senior Attorney Texas Commission on Environmental Quality Environmental Law Division MC 173 P.O. Box 13087 Austin, Texas 78711-3087 Melinda Luxemburg, P.E., Technical Staff Texas Commission on Environmental Quality Water Quality Division MC 148 P.O. Box 13087 Austin, Texas 78711-3087

# FOR PUBLIC INTEREST COUNSEL via electronic mail:

Vic McWherter, Attorney Texas Commission on Environmental Quality Public Interest Counsel MC 103 P.O. Box 13087 Austin, Texas 78711-3087

# FOR THE CHIEF CLERK via electronic mail:

Bridget C. Bohac, Chief Clerk Texas Commission on Environmental Quality Office of Chief Clerk MC 105 P.O. Box 13087 Austin, Texas 78711-3087



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. Box 13087

Austin, Texas 78711-3087

PERMIT TO DISCHARGE WASTES

under provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code

Luminant Mining Company LLC

whose mailing address is

Environmental Services - 6555 Sierra Drive, Irving, Texas 75039

is authorized to treat and discharge wastes from Monticello Lignite Mining Area (SIC 1221)

located north and south of Interstate Highway 30, between the City of Winfield and the City of Mount Pleasant, Titus and Franklin Counties, Texas 75456

TPDES PERMIT NO. WQ0002697000 [For TCEQ office use only - EPA I.D. No. TX00683571

This major amendment replaces TPDES Permit No. WQ0002697000, issued on February 16, 2011.

via Outfalls 002M/R and 003M/R to unnamed tributaries, thence to Ripley Creek; via Outfalls 014M/R and 015M/R to unnamed tributaries, thence to Dorsey Creek, thence to Ripley Creek; via Outfall 001M/R to Dorsey Creek, thence to Ripley Creek; via Outfalls 017M/R and 018M/R to unnamed tributaries; thence to Piney Creek; via Outfalls 004M/R and 016M/R to Piney Creek; via Outfall 020M/R to East Piney Creek; thence all creeks to White Oak Creek; thence to Sulphur/South Sulphur River in Segment No. 0303 of the Sulphur River Basin; via Outfall 005M/R to an unnamed tributary, thence to Dragoo Creek, thence to Tankersley Creek (below Tankersley Lake); via Outfall 006M/R to a ditch, thence to a 22-acre pond, thence to Tankersley Creek (below Tankersley Lake); via Outfalls 019M/R and 021M/R to unnamed tributaries, thence to Hayes Creek (above New City Lake), thence to New City Lake, thence to Hayes Creek (below New City Lake), thence to Hart Creek; via Outfall 022M/R to an unnamed tributary, thence to Tankersley Creek (above Tankersley Lake), thence to Tankersley Lake, thence to Tankersley Creek (below Tankersley Lake); via Outfall 030M/R to Tankersley Creek (below Tankersley Lake); thence all creeks to Big Cypress Creek Below Lake Bob Sandlin in Segment No. 0404 of the Cypress Creek Basin; and via Outfalls 007M/R, 009M/R, 010M/R, and 024M/R to unnamed tributaries, thence to Smith Creek; via Outfalls 008M/R, 023M/R, and 026M/R to unnamed tributaries/ditches to Blundell Creek; via Outfall 029M/R to Blundell Creek; via Outfalls 012M/R and 025M/R to an unnamed tributary; via Outfalls 011M/R, 013M/R, 027M/R, and 028M/R and all creeks to Lake Bob Sandlin in Segment No. 0408 of the Cypress Creek Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, five years from the date of permitt issuance.

ISSUED DATE: May 13, 2019

Volume: Intermittent and flow variable.

Effluent Characteristics		ischarge Limitatio	Minimum Self-Monitoring Requirements			
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum		
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week	Estimate	
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab	
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab	
Selenium, Total (*2)	N/A	0.036	0.036	1/6 Months (*4)	Grab	
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab	

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 001M, 002M, 004M, 014M-018M, and 020M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water), previously monitored effluent (PME; treated domestic wastewater from Outfall 201), and stormwater from active mining areas (\*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics		Discharge Limitations			Minimum Self-Monitoring Requirements		
		Daily Maximum	Single Grab	Report Daily Average and Daily Maximum			
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type		
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Totionata		
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Estimate Grab		
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab		
Selenium, Total (*2)	N/A	0.036	0.036	1/ 6 Months (*4)	Grab		
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab		

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 003M, where wastewater discharges from the active mining retention ponds associated with this outfall (see Other Requirement No. 3), and prior to discharge to the Sulphur/South Sulphur watershed (Segment No. 0303).

Volume: Intermittent and flow variable.

Effluent Characteristics		Discharge Limitation	ns	Minimum Self-Monitoring Requirements Report Daily Average and Daily Maximum		
	Daily Average	Daily Maximum	Single Grab			
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate	
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Grab	
Iron, Total (*2)	3.0	6.0	6.0	1/ Week (*4)	Grab	
Selenium, Total (*2)	N/A	0.036	0.036	1/6 Months (*4)	Grab	
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab	

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 005M, 006M, 019M, 021M, 022M, and 030M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (see Other Requirement No. 3), and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

Volume: Intermittent and flow variable.

Effluent Characteristics		charge Limitations	3	Minimum Self-Monitoring Requirements Report Daily Average and Daily Maximum		
	Daily Average	Daily Maximum	Single Grab			
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*4)	T-C	
Total Suspended Solids (*2)	35	70	70	1/ Week (*4)	Estimate Grab	
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab	
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab	
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab	

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfalls 007M-009M, 013M, 023M-029M, where wastewater discharges from the active mining retention ponds associated with the applicable outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

Volume: Intermittent and flow variable.

Effluent Characteristics	Dis	charge Limitations	5	Minimum Self-Monitoring Requirements		
	Daily Average   Daily Maximum   Sing		Single Grab	Report Daily Average and I	Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*3)	Estimate	
Total Suspended Solids (*2)	35	70	70	1/ Week (*3)	Grab	
Iron, Total (*2)	3-5	7.0	7.0	1/ Week (*3)	Grab	
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*3)	Grab	
Aluminum, Total (*2)	N/A	1.76	1.76	1/ Month (*3)	Grab	

- (\*1) See Other Requirement Nos. 2 and 3.
- (\*2) See Other Requirement No. 4 for discharges due to precipitation events.
- (\*3) When discharging. See Other Requirements No. 7.
- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*3), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 010M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge mine water (mine drainage, groundwater from mine pits, and dewatering well water), previously monitored effluent (PME; treated domestic wastewater from Outfall 203), and stormwater from active mining areas (\*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics		charge Limitations	Minimum Self-Monitoring Requirements			
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum		
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	- / TAT. 1 (# .)		
Total Suspended Solids (*2)	35	70	70	1/ Week (*4) 1/ Week (*4)	Estimate Grab	
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab	
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab	
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab	

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 011M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

Volume: Intermittent and flow variable.

Effluent Characteristics		charge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and D	aily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate	
Total Suspended Solids (*2)	30	70	70	1/ Week (*4)	Grab	
Oil and Grease (*2)	15	20	20	1/ Week (*4)	Grab	
Iron, Total (*2)	3.5	7.0	7.0	1/ Week (*4)	Grab	
Selenium, Total (*2)	N/A	Report	N/A	1/6 Months (*4)	Grab	
Aluminum, Total (*2) (*3)	N/A	Report	N/A	1/ Month (*4)	Grab	

(\*1) See Other Requirement Nos. 2 and 3.

(\*2) See Other Requirement No. 4 for discharges due to precipitation events.

(\*3) This reporting requirement expires on April 30, 2024 (see Other Requirement No. 13).

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*2).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s): At Outfall 012M, where wastewater discharges from the active mining retention ponds associated with this outfall (See Other Requirement No. 3), and prior to discharge to Lake Bob Sandlin watershed (Segment No. 0408).

During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge stormwater from post-mining areas (\*1), wastewater from retention ponds in post-mining areas (\*1) and previously monitored effluents (PME; compliant active mining area effluent to the post-mining area retention ponds) (\*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements		
	Daily Average	Daily Maximum				
				Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*4)	Estimate	
Settleable Solids (milliliters/liter, ml/L)	N/A	0.5 (*3)	0.5 (*3)	1/ Week (*4)	Grab	

- (\*1) See Other Requirement Nos. 2 and 3.
- (\*2) See Other Requirement No. 8.
- (\*3) See Other Requirement No. 4 for discharges due to precipitation events.
- (\*4) When discharging. See Other Requirements No. 7.
- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*4), by grab sample (\*3).
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location(s):

At Outfalls 001R-004R, 014R-018R, and 020R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to the Sulphur/South Sulphur River watershed (Segment No. 0303).

At Outfalls 005R, 006R, 019R, 021R, 022R, and 030R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to Big Cypress Creek Below Lake Bob Sandlin watershed (Segment No. 0404).

At Outfalls 007R-013R and 023R-029R, where wastewater discharges from the post-mining retention ponds (See Other Requirement No. 3) and prior to discharge to the Lake Bob Sandlin watershed (Segment No. 0408).

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics		charge Limitation		Minimum Self-Monitoring Requirements		
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and D	aily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*1)	Estimate	
Biochemical Oxygen Demand, 5-day (BOD <sub>5</sub> )	20	45	45	1/ Week (*1)	Grab	
Total Suspended Solids	20	45	45	1/ Week (*1)	Grab	
E. Coli (*2)	N/A	Report (*3)	N/A	1/ Month (*1)	Grab	
E. Coli (*2)	N/A	399 (*4)	399	1/ Month (*1)	Grab	

(\*1) When discharge occurs.

(\*2) Most probable number or colony forming units per 100 ml (MPN or cfu/100 ml).

(\*3) Beginning upon the date of permit issuance and lasting one year from the date of permit issuance.

(\*4) Beginning one year from the date of permit issuance and lasting through the date of permit expiration.

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*1), by grab sample.
- 3. The effluent shall contain a chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (\*1), by grab sample.
- 4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 5. Effluent monitoring samples shall be taken at the following location: At Outfall 201, at the outlet of the North Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 003M.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge treated domestic wastewater, subject to the following effluent limitations:

Effluent Characteristics		charge Limitation		Minimum Self-Monitoring Requirements		
	Daily Average Daily Maximum Single Grab			Report Daily Average and Daily Maximum		
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow, MGD	Report	Report	N/A	1/ Week (*1)	Estimate	
Biochemical Oxygen Demand, 5-day (BOD <sub>5</sub> )	20	45	45	1/ Week (*1)	Grab	
Total Suspended Solids	20	45	45	1/ Week (*1)	Grab	
E. Coli (*2)	N/A_	Report (*3)	N/A	1/ Month (*1)	Grab	
E. Coli (*2)	N/A	399 (*4)	399	1/ Month (*1)	Grab	

(\*1) When discharge occurs.

(\*2) Most probable number or colony forming units per 100 ml (MPN or cfu/100 ml).

(\*3) Beginning upon the date of permit issuance and lasting one year from the date of permit issuance.

(\*4) Beginning one year from the date of permit issuance and lasting through the date of permit expiration.

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (\*1), by grab sample.
- 3. The effluent shall contain a chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored 1/week (\*1), by grab sample.
- 4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 5. Effluent monitoring samples shall be taken at the following location: At Outfall 203, at the outlet of the South Winfield sewage treatment plant and prior to mixing with any other waters discharged via Outfall 011M.

#### DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

#### 1. Flow Measurements

- a. Annual average flow the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.
- b. Daily average flow the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) the highest 2-hour peak flow for any 24-hour period in a calendar month.

#### 2. Concentration Measurements

- a. Daily average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
  - i. For domestic wastewater treatment plants When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.
  - ii. For all other wastewater treatment plants When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.
- d. Daily discharge the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total

mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Bacteria concentration (Fecal coliform, *E. coli*, or Enterococci) the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
- f. Daily average loading (lbs/day) the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD  $\times$  Concentration, mg/L  $\times$  8.34).
- g. Daily maximum loading (lbs/day) the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

### 3. Sample Type

- a. Composite sample For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(c).
- b. Grab sample an individual sample collected in less than 15 minutes.
- 4. Treatment Facility (facility) wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
- 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.
- 6. Bypass the intentional diversion of a waste stream from any portion of a treatment facility.

#### MONITORING AND REPORTING REQUIREMENTS

#### 1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

#### 2. Test Procedures

- a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.
- b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

### 3. Records of Results

- a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- c. Records of monitoring activities shall include the following:

i. date, time, and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement;

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

### 5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site or shall be readily available for review by a TCEQ representative for a period of three years.

### 6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

### 7. Noncompliance Notification

- a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects. the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

i. unauthorized discharges as defined in Permit Condition 2(g).

ii. any unanticipated bypass that exceeds any effluent limitation in the permit.

- iii. violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.
- In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
- d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.
- 8. In accordance with the procedures described in 30 TAC §§35.301 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.
- 9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. one hundred micrograms per liter (100 μg/L);
 ii. two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for anxilonor;

iii. five (5) times the maximum concentration value reported for that pollutant in the permit

application; or

iv. the level established by the TCEQ.

- b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. five hundred micrograms per liter (500 μg/L);
ii. one milligram per liter (1 mg/L) for antimony;
iii. ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. the level act third. The description of the level act third.

iv. the level established by the TCEQ.

### 10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

- 11. All POTWs must provide adequate notice to the Executive Director of the following:
  - a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
  - b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
  - c. for the purpose of this paragraph, adequate notice shall include information on:

i. the quality and quantity of effluent introduced into the POTW; and
ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

#### PERMIT CONDITIONS

#### General

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

- i. violation of any terms or conditions of this permit;
  ii. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
  iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

### 2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the

Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 7.075 (relating to Administrative Penalties), 7.101 7.111 (relating to Civil Penalties), and 7.141 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA §402, or any requirement imposed in a pretreatment program approved under the CWA §§402(a)(3) or 402(b)(8).

### 3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.
- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

### 4. Permit Amendment or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
  - i. the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or
  - ii. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9; or
  - iii. the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

#### 5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.
- b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

### 6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

### Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

### 8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

### 9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

### 10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

### 11. Notice of Bankruptcy.

- Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
  - i. the permittee;
  - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

#### b. This notification must indicate:

- i. the name of the permittee;
- ii. the permit number(s);
  iii. the bankruptcy court in which the petition for bankruptcy was filed; and
- iv. the date of filing of the petition.

### OPERATIONAL REQUIREMENTS

- The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.
- Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 319.29 concerning the discharge of certain hazardous metals.

- 3. Domestic wastewater treatment facilities shall comply with the following provisions:
  - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.
  - b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment or other treatment unit regulated by this permit.
- 4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, or retention of inadequately treated wastewater.
- 5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
- 6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

#### 7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

- 8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
  - a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
- Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for wastern to the changes required are advisable for wastern to the changes required are advisable for wastern to the changes required are advisable for wastern to the changes required are advisable for wastern to the changes required are advisable for wastern to the control of the c sion's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.
- Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter
- 10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.
- 11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:
  - Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
  - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
  - c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC \$335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.
  - d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.
  - The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
  - The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and
    - i. volume of waste and date(s) generated from treatment process;
    - ii. volume of waste disposed of on-site or shipped off-site; iii. date(s) of disposal;

### Luminant Mining Company LLC

TPDES Permit No. WQ0002697000

iv. identity of hauler or transporter;v. location of disposal site; andvi. method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEQ Revision 01/2016

#### OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

Pollutant	MAL (mg/L)
Aluminum (Total)	0.0025
Iron (Total)	0.007
Selenium (Total)	0.005
Settleable Solids	0.4 ml/L

Test methods used must be sensitive enough to demonstrate compliance with the permit effluent limitations. If an effluent limit for a pollutant is less than the minimum analytical level (MAL), then the test method for that pollutant must be sensitive enough to demonstrate compliance at the MAL. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the MAL for the pollutants specified above.

When an analysis of an effluent sample for a pollutant listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (o) shall be used for that measurement when making calculations for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form:

"The reported value(s) of zero (o) for <u>[list pollutant(s)]</u> on the self-reporting form for <u>[monitoring period date range]</u> is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a pollutant indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that pollutant, the level of detection achieved shall be used for that measurement when making calculations for the self-reporting form. A zero (o) may not be used.

### 2. **DEFINITIONS**

- a. The term "active mining area" is defined as the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post-mining areas.
- b. The term "post-mining area" is defined as a reclamation area or the underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

- c. The term "reclamation area" is defined as the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.
- d. The term "bond release" is defined as the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of an underground mine, mine sealing and abandonment procedures) has been satisfactorily completed in accordance with Phase II as defined by 16 Texas Administrative Code (TAC) §12.313(a)(2).
- e. The term "10-year, 24-hour precipitation events" is defined as the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
- f. The term "settleable solids" is that matter measured by the volumetric method specified in 40 CFR §434.64 and as follows: Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. Notwithstanding any provision of 40 CFR Part 136, the method detection limit for measuring settleable solids under this part shall be 0.4 ml/L.
- g. The term "mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post-mining area.
- h. The term "alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10 mg/L.

#### 3. POND LOCATION INFORMATION

Latitude and longitude are established after construction. The permittee shall submit the updated latitude and longitude for each exact pond location to the TCEQ Industrial Permits Team (MC-148) and TCEQ Region 5 Office.

- a. The permittee shall maintain a current map and supporting documentation, as necessary, at the site, which shows and lists all constructed ponds with the operational phase (active mining or post-mining), design dimensions, construction information, pond drainage area, pond location, discharge routes, sample locations, and outfall locations. The map shall be available to TCEQ personnel upon request.
- b. In preparation of mining activities in a specific watershed area, the permittee shall construct the retention pond(s) necessary to retain water from the mining activity prior to disturbing the natural soils in the contributing watershed area.
- c. The permittee may change the location of, and reconfigure ponds if necessary, to establish ponds in a series or to allow effluent to be commingled in a pipe or man-made conveyance as long as the final discharge point or outfall is authorized herein. No final outfalls other than those listed in the below Mining Pond Information table that are associated with the active mining areas and post-mining areas are authorized by this permit.

The following table shows the mine area, operational phase, related outfalls, receiving waters and tributaries:

**Mining Pond Information** 

		ning Pond Information					
Outfall	Pond	Receiving Stream / Segment No.	Latitude	Longitude	Active (M)	Post (R)	Fu- ture
001	A-2	Dorsey Creek / 0303	33° 11' 25"	95° 04' 59"	<b>√</b>		
002	A-3	Ripley Creek / 0303	33° 11' 03"	95° 05' 57"	<b>✓</b>		
003	A-15	Ripley Creek / 0303	33° 11' 11"	95° 05' 47"	<b>√</b>	· · ·	
004	J-2	Piney Creek / 0303	33° 13' 31"	95° 01' 08"	1		
005	G-13	Dragoo Creek / 0404	33° 09' 20"	95° 01′ 43"	<b>V</b>		
006	GR-15	Dragoo Creek / 0404	33° 09' 24"	95° 03' 05"	<b>✓</b>		
						·	
007	AR-35	Smith Creek / 0408	33° 10' 17"	95° 05' 49"	<b>✓</b>		
008	F-2	Blundell Creek / 0408	33° 07' 51"	95° 05' 55"	✓		
009	F2R3	Smith Creek / 0408	ვვ° ი8' ვი"	95° 04' 48"	✓		
010	F-10	Smith Creek / 0408	33° 07' 57"	95° 04' 44"	✓		
011	F-12	Blundell Creek / 0408	33° 07' 30"	95° 05' 19"	✓		
012	G-7	Trib. of Cypress Cr./0408	33° 06' 54"	95° 03' 08"	<b>✓</b>		
013	SSC-1	Smith Creek / 0408	33° 06′ 31.4″	95° 04' 26.6"	<b>√</b>		
	ļ						
014	A-19	Dorsey Creek / 0303	33° 11' 35"	95° 04' 44"		✓	
015	B-2	Dorsey Creek / 0303	33° 12' 03"	95° 04' 22"		<b>✓</b>	
016	L-1	Piney Creek / 0303	33° 14' 03"	95° 01' 04"		<b>√</b>	
017	L-2	Piney Creek / 0303	33° 14' 20"	95° 00' 37"		✓	
018	L-4	Piney Creek / 0303	33° 14' 46"	95° 00' 10"		✓	
019	L-9	Trib. of Hayes Cr./0404	33° 13' 19"	95 <sup>°</sup> 59' 29"		✓	
020	M-1	East Piney Creek / 0303	33° 14' 42"	95° 58' 02"		✓	
021	J-1	Hayes Creek /0404	33° 12' 24"	95° 00' 25"		<b>✓</b>	
022	J-10	Tankersley Creek / 0404	33° 12′ 24″	95° 02' 34"		<b>✓</b>	
023	F-11	Blundell Creek / 0408	33° 08' 06"	95° 06' 20"		✓	
024	G-1	Smith Creek /0408	33° 08' 36"	95° 04' 49"		✓	
025	G-11	Trib. of Cypress Cr./0408	33° 06' 59"	95° 02' 24"		✓	
026	H-1	Blundell Creek / 0408	33° 08' 01"	95° 06' 39"			<b>✓</b>
027	Н-3	Lake Monticello / 0408	33° 07' 06"	95° 05' 48"		✓	
028	H-4	Blundell Creek / 0408	33° 07' 50"	95° 06' 19"			✓
029	H-5	Blundell Creek / 0408	33° 08' 21"	95° 07' 18"			✓
030	G-14	Tankersley Creek / 0404	33° 08' 15"	95° 01' 43"			✓
201	WN Sanitary	Ripley Creek / 0303	33° 11' 19"	95° 05' 25"			
203	WS Sanitary	Blundell Creek / 0408	33° 07' 53"	95° 05' 34"			

- d. Discharges from the above outfalls shall be monitored in accordance with permit requirements from the time the natural soils are disturbed due to mining activity until reclamation of the disturbed soils has been completed and the Phase Two performance bond issued by the appropriate authority has been released.
- e. Written notification is required as follows:
  - i. within 45 days of any revision of the pond map, including changing to, or from, the active mining or post-mining operational phase and to, or from, the active or inactive status (see subsection f. below);
  - ii. upon initiation of any mining-related activity in the watershed of any pond; or
  - iii. At least 10 days prior to closing a retention pond or discontinuing monitoring of discharges.

All written notifications are required to be submitted to the TCEQ Industrial Permits Team (MC 148), TCEQ Enforcement Division (MC 224), and TCEQ Region 5 Office.

- f. Reporting requirements pursuant to 30 TAC Sections 319.1-319.12 and any additional effluent reporting requirements contained in this permit (as designated in the "Future" column in the above Mining Pond Information table) are suspended from the effective date of the permit until mine operation startup or discharge from the facility described by this permit, whichever occurs first. The permittee shall provide written notice to the TCEQ Region 5 Office and the Applications Review and Processing Team (MC-148) of the Water Quality Division at least forty-five (45) days prior to mine (pond) operation startup (activation) or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.
- g. All outfalls that are discharging wastewaters from ponds in the active mining area will be followed by a letter M for mining phase. All outfalls that are discharging wastewaters from ponds in the post-mining areas will be followed by a letter R for reclamation phase.
- 4. Additional Monitoring and Reporting Requirements for Retention Ponds Regulated by 40 CFR Part 434.
  - a. Sampling Requirements

Analysis shall be conducted for effluent discharged from each retention pond constructed and operated under this permit, except for:

- i. effluent discharge from retention ponds in a series, which must be sampled at a point from the last pond in the series; and
- ii. effluent discharges from multiple retention ponds commingled in a pipe or a man-made conveyance structure before discharging into waters in the state, which must be sampled at a point prior to mixing with other waters.
- b. Alternate effluent limitation for pH: N/A
- c. Effluent Limitations for Precipitation Events for Acid or Ferruginous Active Mining Areas: N/A

N/A

- d. Effluent Limitations for Precipitation Events for Alkaline Active Mining Areas:
  - i. Effluent discharges from an active mining area caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event, must not exceed the following limitations:

Pollutant	Effluent Limitations
Settleable Solids	o.5 ml/L maximum not to be exceeded
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

ii. Effluent discharges from an active mining area caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event, must not exceed the following limitations:

Pollutant	Effluent Limitations
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

- e. <u>Effluent Limitations for Precipitation Events for Post-Mining Areas:</u>
  - i. Effluent discharges from Post-Mining Areas within any 24-hour period greater than the 10-year, 24-hour precipitation event, must not exceed the following limitations:

Pollutant	Effluent Limitations
pH, standard units (SU)	6.0 minimum - 9.0 maximum at all times

- f. The permittee bears the burden of proof in establishing the volume of a precipitation event. On or before the end of January, April, July, and October; the permittee shall submit reports containing the information required for alternate effluent limits and precipitations events for the prior calendar quarter to the TCEQ Enforcement Division (MC-224) and the Region 5 Office.
- 5. This provision applies to the treatment and disposal of domestic wastewater at internal Outfalls 201 and 203.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312 of this title. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335 of this title) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335 of this title. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

- a. volume (dry weight basis) of sludge disposed;
- b. date of disposal;
- c. identity and registration number of hauler;
- d. location and registration or permit number of disposal site; and
- e. method of final disposal.

The above records must be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

6. This provision supersedes and replaces (Provision 1) MONITORING AND REPORTING REQUIREMENTS, (Paragraph 1) 1. Self-Reporting, as defined on Page 4 of this permit.

Monitoring results must be provided at intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 25th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10

7. Monitoring results must be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports must be submitted in September of each year. For pollutants which are monitored twice per year (i.e. 1/6 months), the six-month periods are defined as January through June and July through December. The first effluent report must be submitted the first July or January following issuance of the permit with subsequent reports every six months thereafter. For pollutants which are monitored four times per year, the first effluent report must be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

### 8. PREVIOUSLY MONITORED EFFLUENTS

The permittee may discharge "active mining area" effluent to "post-mining area" retention ponds, provided that the discharge meets the following requirements:

- a. "active mining area" effluent must meet the limitations specified on Pages 2, 2a, 2b, 2c, 2d, 2e, and 2f of this permit prior to being discharge to the "post-mining area" retention ponds;
- b. dikes and berms must be in place to prevent storm water draining from the "active mining area" to the "post-mining area" retention ponds; and
- c. the drainage area of the post-mining retention pond must be a reclamation area as defined in 40 CFR Part 434 Coal Mining Point Source Category.
- 9. All discharges from Outfalls 001M-030M and 001R-030R must comply with the limitations for hazardous metals as regulated under Title 30, Texas Administrative Code (TAC) Chapter 319, Subchapter B "Hazardous Metals."
- 10. The following mixing zone definition applies to Outfalls 001M-030M: There is no mixing zone established for discharges to an intermittent stream. Acute toxic criteria apply at the point of discharge.
- 11. Analytical testing to establish effluent quality required on subsequent permit application forms is not required for each outfall and associated pond identified in this permit. The permittee may submit analytical testing for a subset of outfalls and associated ponds based on its determination that discharges are substantially identical as provided by 40 CFR § 122.21(g)(7). If discharges through two or more outfalls are substantially identical, then sampling and monitoring may be conducted at a subset of outfalls, and the results may be reported as representative of the substantially identical outfalls in accordance with 40 CFR § 122.21(g)(7).

### 12. DUST SUPPRESSION

The permittee is authorized to utilize effluent from "active mining area" and "post-mining area" sedimentation ponds for dust suppression. With respect to utilization of effluent for dust suppression, the permittee shall comply with the following requirements.

- a. Dust suppression practices must be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.
- b. Application of effluent for dust suppression must be accomplished only when the area specified is in use.
- c. Dust suppression with effluent shall not occur during times when the ground has standing water, the ground is saturated.
- d. Spray fixtures for the dust suppression systems must be of such design that they cannot be operated by unauthorized personnel.
- 13. The permittee shall submit, receive approval for, and proceed with a "Work Plan for an Evaluation of Aluminum in Stormwater Discharges." The purpose of this work plan is to outline an approach for collecting samples of stormwater alone to demonstrate that aluminum levels in stormwater are directly responsible for aluminum levels in discharges at the Monticello Lignite Mining Area.

The permittee shall submit, receive approval for, and proceed with a "Work Plan for an Aluminum Partitioning Study." The purpose of this work plan is to outline an approach for determining the site-specific ratio of dissolved aluminum to total aluminum for Outfalls 001M-010M and 011M-030M discharges. The permittee may use a representative Outfall for each segment. This study will also demonstrate that any proposed aluminum effluent limits will not cause "instream" effects in the receiving waters by determining the No Observed Effects Concentration (NOEC).

The results of the work plans must be submitted to the Water Quality Standards Team (MC-150) of the TCEQ Water Quality Division. Once the results of the work plans are completed by the permittee, a permitting action is required to evaluate the appropriateness of a site-specific partition coefficient for aluminum and any required effluent limitations or reporting requirements.

- 14. The permittee shall apply for and receive authorization to add additional outfalls and associated ponds which are not identified in this permit prior to their construction and use. The permittee may file an application for a permit renewal with changes to identify additional outfalls and associated ponds prior to the expiration of this permit if:
  - a. the approximate location of each outfall is delineated by latitude and longitude in the application for renewal with changes and public notice of the application by newspaper publication is provided in accordance with commission rules;
  - b. the permitted boundary is not expanded;
  - c. any adjacent property located within ½ mile of an additional outfall or associated pond, or downstream property located adjacent to the discharge route associated with an additional outfall and within one mile downstream of the outfall, is not newly adjacent or downstream solely because of the addition of an outfall or associated pond identified in the application for renewal with changes;

- d. no new wastestream is added to the discharge; and,
- e. no new receiving waters extend beyond the permitted boundary.

Each subsequent permit action to add additional outfalls and associated ponds which are not identified in this permit shall be treated as a renewal with changes and not an amendment if the permittee complies with the requirements in subsections a. through e. above.

- 15. Wastewater discharged via Outfalls 005M and 013M-030M must be sampled and analyzed as directed below for those parameters listed in Tables 1, 2, and 3 of Attachment A of this permit. Analytical testing for Outfalls 005M and 013M-030M must be completed within 60 days of initial discharge. Results of the analytical testing must be submitted within 90 days of completion of the four discharges for each outfall to the TCEQ Industrial Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.
  - Table 1: Analysis is required for all pollutants in Table 1. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of one sampling event. Any additional sampling events must be at least one week apart.
  - Table 2: Analysis is required for those pollutants in Table 2 that are used at the facility that could in any way contribute to contamination in the discharges from 005M/R and 013M/R-030M/R. Sampling and analysis must be conducted for a minimum of one sampling event. Any additional sampling events must be at least one week apart.
  - Table 3: For all pollutants listed in Table 3, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge. Sampling and analysis must be conducted for each pollutant believed present for a minimum of one sampling event. Any additional sampling events must be at least one week apart.

The permittee shall report the flow at Outfalls 005M/R and 013M/R-030M/R in MGD in the attachment. The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

16. The following Retest Table 1 must be completed for Outfalls 007M-012M with the applicable analytical results and sent to the TCEQ Wastewater Permitting Section (MC 148) no later than 60 days from receipt of all the analytical results for the applicable outfall from the laboratory. The following Retest Table 2 must be completed for Outfall 007M with the applicable analytical results and sent to the TCEQ Wastewater Permitting Section (MC 148) no later than 60 days from receipt of all the analytical results for the applicable outfall from the laboratory.

The required samples must be collected as soon as practical following permit issuance or discharge. Wastewater must be sampled and analyzed for those parameters listed in the below Retest Tables 1 and 2 for a minimum of four (4) separate sampling events which are a minimum of one (1) week apart.

Test methods utilized to determine compliance with the permit monitoring or reporting requirements and limitations must be according to EPA methodology and sensitive enough to detect the listed parameters at the minimum analytical level (MAL). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations or monitoring requirements.

## RETEST TABLE 1

(Outfalls 007M-012M)

Outfall No:	□C □G		Effluent Concentration (μg/L)						
Polluta	nts	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL (μg/L)		
Copper,	total						2.0		

### RETEST TABLE 2

(Outfall 007M)

Outfall No:	□C □G	Effluent Concentration (µg/L)					
Polluta	Pollutants Samp. 1			Samp. 3	Samp. 4	Average	MAL (μg/L)
Chromium, H	exavalent						3.0

The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

### ATTACHMENT A

Table 1

Outfall No.: C G*		Effluent Concentration (mg/L)					
Pollutants	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average		
BOD (5-day)							
CBOD (5-day)							
Chemical Oxygen Demand							
Total Organic Carbon							
Dissolved Oxygen							
Ammonia Nitrogen							
Total Suspended Solids							
Nitrate Nitrogen							
Total Organic Nitrogen							
Total Phosphorus							
Oil and Grease							
Total Residual Chlorine							
Total Dissolved Solids							
Sulfate							
Chloride							
Fluoride				<u> </u>			
Total Alkalinity (mg/L as			1		ļ		
CaCO <sub>3</sub> )							
Temperature (°F)							
pH (Standard Units;		1					
min/max)					<u> </u>	3.3-36.32.00	

Pollutants	Effluent Concentration (μg/L)	MAL ** (μg/ L)
Aluminum, total		2.5
Antimony, total		5
Arsenic, total		0.5
Barium, total		3
Beryllium, total		0.5
Cadmium, total		1
Chromium, total		3
Chromium, hexavalent		3
Chromium, trivalent		N/A
Copper, total		2
Cyanide, available		10
Lead, total		0.5
Mercury, total		0.005
Nickel, total		2
Selenium, total		5
Silver, total		0.5
Thallium, total		0.5
Zinc, total		5

<sup>\*</sup> Composite (C) Grab (G)
\*\* Minimum Analytical Level

# Table 2

Outfall No.:	□C □G*	Average (µg/L)*	Maximum (μg/L)*	No. of Samples	MAL
Pollutar	its	(μg/L)"	(µg/L)"	Samples	(μg/L)
Acrylonitrile		•			50
Anthracene					10
Benzene					10
Benzidine					50
Benzo(a)anthracene		<u> </u>			5
Benzo(a)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthala					10
Bromodichloromethane [	Dibromochloro-		•	.	10
methane] Bromoform					
					10
Carbon Tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroform					10
Chrysene	- 17				5
m- Cresol [3-Methylphen		· · · · · · · · · · · · · · · · · · ·			10
o- Cresol [2-Methylpheno					10
p- Cresol [4-Methylphene	DI] .				10
1,2-Dibromoethane	D' 17 1 2				10
m-Dichlorobenzene [1,3-					10
o-Dichlorobenzene [1,2-L				ļ	10
p-Dichlorobenzene [1,4-I	Dichlorobenzene				10
3,3'-Dichlorobenzidine				-	5
1,2-Dichloroethane	'-11 (1 1 7				10
1,1-Dichloroethene [1,1-D					10
Dichloromethane [Methy	iene chioride}	<del></del>			20
1,2-Dichloropropane	D:-1-1				10
1,3-Dichloropropene [1,3- ene]	Dichloropropyi-	ı			10
2,4-Dimethylphenol					10
Di-n-Butyl Phthalate					10
Ethylbenzene					10
Fluoride		· · · · · · · · · · · · · · · · · · ·			500
Hexachlorobenzene			<u> </u>		5
Hexachlorobutadiene					10
Hexachlorocyclopentadie:	ne				10
Hexachloroethane			·		20
Methyl Ethyl Ketone					50
Nitrobenzene			<u></u>		10
N-Nitrosodiethylamine					20
V-Nitroso-di- <i>n</i> -Butylamir	ie				20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol		,			5_
Phenanthrene					10
Polychlorinated Biphenyls	s (PCBs) (**)				0,2
Pyridine					20
,2,4,5-Tetrachlorobenzen	ie .				20
1,1,2,2-Tetrachloroethane		-			10
Tetrachloroethene [Tetrac	hloroethylenel				10
Coluene					10
,1,1-Trichloroethane					10

# Luminant Mining Company LLC

1,1,2-Trichloroethane		10
Trichloroethene [Trichloroethylene]		10
2,4,5-Trichlorophenol		50
TTHM (Total Trihalomethanes)		. 10
Vinyl Chloride		10

Table 3

Outfall No.:	□C □G*	Believed	Believed	Average Con- centration	Maximum Concentration	No. of	MAL
Pollutants		Present	Absent	(mg/L)	(mg/L)	Samples	(μg/L)*
Bromide							400
Color (PCI	IJ)						
Nitrate-Ni	trite (as N)						<u></u>
Sulfide (as	S)		,				_
Sulfite (as	SO <sub>3</sub> )						<del>-</del>
Surfactant	S						_
Boron, tota	al						20
Cobalt, tot	al						0.3
Iron, total							7
Magnesiur	n, total						20
Manganes	e, total						0.5
Molybden	ım, total						1
Tin, total							5
Titanium,	total					-	30

<sup>\*</sup> Indicate units if different from  $\mu$ g/L.

<sup>\*\*</sup> Total PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

### **Water Conservation Plan**

#### I. Introduction

### A. Purpose

Regulations promulgated by the Texas Water Development Board (TWDB) require a water conservation plan (WCP) to be submitted when requesting financial assistance.

The objective of a WCP is to conserve water supplies and to reduce the quantity of water and wastewater that facilities must handle. This is accomplished by implementing permanent water use efficiency or reuse practices which are specified in the WCP.

#### B. Goals

The goal of this conservation plan is to achieve a reduction in the municipal per capita consumption of water. When water use is reduced, wastewater flows also experience a reduction. The goal of this conservation plan is to achieve a municipal per capita usage system-wide of 140 gallons per day or less or at least 10 percent reduction in municipal per capita usage from the preceding year if the goal of 140 gallons cannot be achieved.

The 5-year goal of this conservation plan is for the system wide average of all customers to be a municipal per capita usage of less than 140 gallons per day.

The 10-year goal of this conservation plan is for all the member cities to achieve a municipal per capita usage of less than 140 gallons per day.

The municipal per capita per day usage system-wide for the member cities, and other wholesale customers, for the most recent year that statistics are available is 138 gallons. Some communities supplied by Northeast Texas Municipal Water District (NETMWD) are already achieving a municipal per capita usage below 140 gallons per day and some communities are not. More than half of the member cities of NETMWD achieved a municipal per capita usage below 140 gallons per day in 2018. The combined municipal per capita usage for all member cities in NETMWD for 2018 is 155 gallons per day. None of the member cities had a reported usage above 175 gallons per capita in 2018.

The 5-year goals of the water loss programs related to this conservation plan are: to conduct annual water loss studies, and achieve a 15% or less unaccounted for water loss.

The 10-year goals of the water loss programs related to this conservation plan are: to conduct annual water loss studies, and achieve a 15% or less unaccounted for water loss.

The 2018 data shows an 3% unaccounted for water value, or approximately 37 million gallons.

#### C. Planning Area

NETMWD owns and operates a water treatment plant in Marion County, Texas, located near the intersection of Highway 155 and 729. This plant is referred to as the Tanner Plant. The Tanner Plant is presently designed for a capacity of 8.0 million gallons per day. NETMWD operates a water treatment plant in Camp County, Texas, near Pittsburg on the west side of Highway 1520. This plant is referred to as the Pittsburg Plant. The Pittsburg Plant is presently designed for a treatment capacity of 1.2 million gallons per day. Therefore, NETMWD presently has a total design capacity of 9.2 million gallons per day. NETMWD has contracts to serve potable water to the following cities: Jefferson, Avinger, Daingerfield, Lone Star, Hughes Springs, Ore City and Pittsburg. In addition to cities, NETMWD is willing to provide and does provide water on a wholesale basis to entities outside municipal limits. NETMWD is specifically authorized to acquire land and easements within the following counties: Marion, Cass, Morris, Harrison, Upshur, Camp, and Titus. NETMWD has seven member cities. Those cities are: Avinger, Daingerfield, Hughes Springs, Jefferson, Lone Star, Ore City, and Pittsburg.

NETMWD is a political subdivision of the State of Texas created as a conservation district under Article XVI, Section 59 of the Constitution pursuant to Senate Bill 130, 53<sup>rd</sup> Legislature of the State of Texas, Regular Session, 1953, as amended. NETMWD has specific authority to provide a source of water supply for cities and other users for municipal, domestic and industrial purposes.

The service area of NETMWD can be generally described as the area known as the Cypress Creek Basin. The total drainage area of the Cypress Creek Basin in Texas is 2,812 square miles. NETMWD is the largest wholesale provider of potable water in the Cypress Creek Basin. NETMWD is the largest water rights holder in the Cypress Creek Basin.

Through contractual agreements, NETMWD provides potable water to customers. These cities then provide the potable water on a retail basis to users of the water. Because of this contractual arrangement, NETMWD does not have a contractual relationship with the end-line users. Therefore, NETMWD does not have the usual effective ability to implement and enforce specific water conservation measures. Instead, NETMWD and its member cities are working closely to assure that elements of this plan are adopted, implemented, and enforced. The plans presented here are developed in their basic form and as an overall plan for NETMWD member cities and customers. In this way, TWDB minimum requirements are met. Some of the member cities already have conservation plans

in place. For those that do not, this plan can establish minimum water conservation measures for them.

#### II. Water Conservation Plan

#### A. Introduction

There are multiple principal water conservation elements listed below to be considered in preparing a water conservation plan.

- (1) Public Education and Information
- (2) Conservation of oriented water rate structure
- (3) Universal metering and meter repair
- (4) Leak detection and repair programs
- (5) Implementation and enforcement
- (6) Periodic Review and Annual Reporting
- (7) Contract Requirements for Successive Customer Conservation
- (8) Pressure control in distribution system
- (9) Recycling and reuse
- (10) Reservoir Systems Operation Plans
- (11) Additional Conservation Strategies
- (12) Coordination with Regional Water Planning Groups

#### B. Goal

The goal of a water conservation plan is to reduce the per capita consumption of water. Many communities throughout the United States have used conservation measures to successfully deal with various water and wastewater problems. While some areas have achieved as much as 25 percent reductions, the normal range is from 5 to 15 percent. When water use is reduced, wastewater flows also experience a reduction.

# C. Plan Elements

# (1) Public Education and Information

NETMWD recognizes that water conservation significantly benefits individuals and communities in terms of long-term availability and costs. The most readily available and lowest cost method of promoting water conservation is to inform the retail water users about ways to save water in homes and businesses, in landscaping and lawn uses, and in recreational use. NETMWD will make available literature on conservation to the Customer cities. Customer cities will make available literature on conservation to their respective retail customers in the following manner:

# 1. Initial Year program

- (a) The public education program during the initial year shall include all the activities outlined in the Long-Term Program,
- (b) The Water Conservation Plan shall be distributed to all NETMWD customers upon adoption of the Plan,
- (c) Publication of information on provider's website.

# 2. Long-Term Program

(a) Availability of educational materials from the Texas Commission on Environmental Quality, American Water Works Association, Texas Water Development Board, and others will be made available to any of our customers upon request. Water conservation information will be posted on provider's website.

#### 3. Annual Educational Activity

(a) NETMWD will sponsor an annual meeting with our wholesale customer's city councils and or board of directors to inform and update on our systems water loss efforts and effectiveness.

In addition to the above Educational and Information program to carried out by NETMWD and Customer cities, NETMWD and customer cities will be available to present water conservation programs to local schools, civic organizations, and other groups.

#### (2) Water Conservation Rate Structure

NETMWD sets a rate to member cities that does not promote excessive use of water. Each customer city sets its own water rates. Each customer city has either

a uniform or a progressive water rate structure that does not encourage water waste or excessive use of water by retail customers.

# (3) Universal Metering and Meter Repair

Each of NETMWD's customer cities manages and maintains its own water system metering. Nearly all water is metered. There are some unmetered water uses including: Fire Department testing of hydrants, main flushing, and contractor connections for construction. NETMWD may assist in properly estimating this usage. All water provided to customers of NETMWD by NETMWD is and will be provided through master meters. These meters will be regularly checked for accuracy. These meters will be used to assess the per capita consumption of each of the customers of NETMWD.

Each city should have as a minimum a water accounting program that is implemented by staff observance of meter readings and billings. Comparisons are made and if water consumption, or monthly billing, changes dramatically, the meter becomes suspect and is tested and repaired or replaced as necessary.

# (4) Leak Detection and Repair Program

Master metering of the wholesale customers as well as metering all retail users can provide an accurate accounting of water uses. Metering and meter repair and replacement, coupled with an annual water audit, may be used in conjunction with other programs such as leak detection and repair to save significant quantities of water. The Customer cities should meter all retail water uses and will be encouraged to provide a master meter as well as metering of all utility, city and other public facilities.

The Customer cities will continue their ongoing leak detection, location and repair programs. Waterline leaks are detected by utility personnel while reading meters, maintaining their water and wastewater systems, and while performing other routine surveillance programs. Additionally, water audits may be utilized to determine if leaks exist which have gone undetected.

When a source of unaccounted-for water loss is located, corrective repairs or other actions are taken. NETMWD may provide assistance to the member cities in leak detection and control of unaccounted for water.

#### (5) Implementation and Enforcement

NETMWD does not have ordinance powers or jurisdiction for enforcement within the service areas of the Customer cities. As a regional entity, NETMWD's role can include the administration and promotion of the Plan, public education and information, and annual reporting.

The Customer cities agree to develop city programs consistent with goals and objectives of this plan. The Customer cities shall be responsible for the implementation and enforcement of specific water conserving activities contained within this plan for their respective jurisdictions.

The Customer cities will be responsible for reporting such activities to NETMWD along with an evaluation of the effectiveness of the program.

NETMWD appoints its Operations Manager as Administrator of this Water Conservation Plan and each Customer city will also designate a representative to work with the NETMWD's designated administrator. In the absence of the Operations Manager, the General Manager will act as Administrator of this Water Conservation Plan. The successor to fill any vacancy for Administrator of this Water Conservation Plan for NETMWD shall be determined by the Board of Directors of NETMWD. The successor to fill any vacancy for Administrator of this Water Conservation Plan for each Customer city shall be determined by the appropriate governing body of that customer.

The Administrator will oversee the execution and implementation of all elements of the plan. City representatives will oversee the implementation in their respective city.

Customer cities and NETMWD will execute any inter-local agreement necessary for providing that each city will implement and enforce the minimum water conservation plans required by law and contained within this document.

The cities may also adopt appropriate resolutions and ordinances adopting these Water Conservation Plans.

#### (6) Periodic Review and Annual Reporting

In addition to an annual review of the water conservation program, NETMWD will be alert to the extent of its legal authority throughout the year to any changes in the water supply and distribution system; or to the population served, which could affect the goals and objectives of the program. Periodic reviews will be made to determine if changes might require an amendment or major change in the plan.

# (7) Contract Requirements for Successive Customer Conservation

The Northeast Texas Municipal Water District will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of Chapter 288, of the Texas Administrative Code, Title 30, Part 1.

## (8) Pressure Control in Distribution System

Each Customer city is responsible for its respective water distribution water system.

The long-range goal of each city is to provide its service area and citizens with adequate water pressure. In conjunction with this objective, and in an effort to promote water conservation, an additional goal may be to incorporate pressure-reducing valves in the system wherever possible to limit the maximum high-water pressure.

## (9) Recycling and Reuse

Presently, there are no reasonable areas where water could be effectively reused. NETMWD will monitor for this possibility as conditions may change.

# (10) Reservoir Systems Operations Plan

The reservoir which the NETMWD uses for the majority of its water supply is operated by the U S Army Corps of Engineers. They maintain Lake O' the Pines and its reservoir systems operations plan. The other reservoir is Lake Bob Sandlin and is operated and maintained by Titus County Fresh Water Supply District #1.

### (11) Additional Conservation Strategies

The NETMWD offers a Fire Hydrant reimbursement program each year to its member cities. It allows member cities to replace or add fire hydrants and/or isolation valves to assist in reducing water loss.

# (12) Coordination with the Regional Water Planning Groups

The service area of the NETMWD is located with the Region D and NETMWD will provide a copy of this revised water conservation plan to Region D.

# III. Emergency Water Demand Management Plan

The NETMWD has adopted a Drought Contingency Plan. This Plan describes the Emergency Water Demand Management Plan for NETMWD. The Plan is attached to this Plan as Attachment A and incorporated here by reference for all purposes.

#### RESOLUTION 2019 - 03

# A RESOLUTION OF THE BOARD OF DIRECTORS OF THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT ADOPTING AN UPDATED WATER CONSERVATION PLAN

WHEREAS, the Board of Directors recognizes that the amount of water available to the Northeast Texas Municipal Water District and its water utility customers is limited and subject to depletion during periods of extended drought;

WHEREAS, the Board of Directors recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee an uninterrupted water supply for all purposes;

WHEREAS, Section 11.1271 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality require all public water supply systems in Texas to prepare a water conservation plan; and

WHEREAS, as authorized under law, and in the best interests of the customers of the Northeast Texas Municipal Water District, the Board of Directors deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during drought and other water supply emergencies;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT:

SECTION 1. That the Water Conservation Plan attached hereto as Exhibit "A" and made part hereof for all purposes be, and the same is hereby, adopted as the official policy of the Northeast Texas Municipal Water District.

SECTION 2. That the Operations Manager is hereby directed to administer the Water Conservation Plan.

SECTION 3. That this resolution shall take effect immediately upon its passage.

DULY PASSED AND APPROVED BY THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT ON THE 26th day of August, 2019.

APPROVED:

Saundra L. Wexler

President

ATTEST:

Sécretary

# DROUGHT CONTINGENCY PLAN FOR THE NORTHEAST TEXAS MUNICIPAL WATER DISTRICT Effective July 22, 2019

# Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water emergency conditions, the Northeast Texas Municipal Water District adopts the following Drought Contingency Plan (the Plan).

#### Section II: Public Involvement

Opportunity for the public and wholesale water customer to provide input into the preparation of the Plan was provided by they Northeast Texas Municipal Water District by means of holding a public meeting to accept input on the Plan and by direct communication with members of the public and customers.

#### Section III: Wholesale Water Customer Education

The Northeast Texas Municipal Water District will periodically provide wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of providing each customer with a copy of the Plan and by direct communication.

# Section IV: Coordination with Regional Water Planning Groups

The Northeast Texas Municipal Water District will periodically provide wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of providing each customer with a copy of the Plan and by direct communication.

# Section V: Authorization

The General Manager or his designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The General Manager, or his

designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

# Section VI: Application

The provisions of this Plan shall apply to all customers utilizing water provided by the Northeast Texas Municipal Water District. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

# Section VII: Triggering Criteria for Initiation and Termination of Drought Response Stages

The General Manager, or his designee, shall monitor water supply and/or demand conditions on a weekly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan. Customer notification of the initiation or termination of drought response stages will be made by mail, telephone, or in person. The news media will also be informed.

The triggering criteria described below are based on pumping capacities and volume of surface supply.

# (a) Stage 1 - Mild Water Shortage Conditions

Requirements for initiation — The Northeast Texas Municipal Water District will recognize that a mild water shortage condition exists when for a period of 48 consecutive hours 85% of pumping capacity is utilized or when the volume of surface supply is less than 50% of capacity.

Requirements for termination – Stage 1 of the Plan may be rescinded when all the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 1 in the same manner as the notification of initiation of Stage 1 of the Plan.

# (b) Stage 2 - Moderate Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a moderate water shortage condition exists when for a period of 48 consecutive hours 90% of pumping capacity is utilized or when the volume of surface supply is less than 40% of capacity.

Requirements for termination – Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the

termination of Stage 2 in the same manner as the notification of initiation of Stage 1 of the Plan.

# (c) Stage 3 – Severe Water Shortage Conditions

Requirements for initiation – The Northeast Texas Municipal Water District will recognize that a severe water shortage condition exists when for a period of 48 consecutive hours 95% of pumping capacity is utilized or when the volume of surface supply is less than 25% of capacity.

Requirements for termination – Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 2 of the Plan.

# (d) Stage 4 – Emergency Water Shortage Conditions

<u>Requirements for initiation</u> — The Northeast Texas Municipal Water District will recognize that a emergency water shortage condition exists when major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or when there is natural or man-made contamination of the water supply sources(s).

<u>Requirements for termination</u> – Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days. The Northeast Texas Municipal Water District will notify its wholesale customers and the media of the termination of Stage 3 in the same manner as the notification of initiation of Stage 4 of the Plan.

#### Section VIII: Drought Response Stages

The General Manager, or his designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section VII, shall determine that mild, moderate, or severe shortage conditions exist or that an emergency condition exists and shall implement the following actions.

#### Stage 1 – Mild Water Shortage Conditions

- 1. Goal: achieve a voluntary 10 percent reduction in daily demand.
- 2. Supply Management Measures: Communication with customers to reduce daily demand.
- 3. Demand Management Measures:
  - a. The General Manager, or his designee(s) will contact the wholesale water customers to discuss water supply and/or demand conditions and

- will request that wholesale water customers initiate voluntary measures to reduce water usage (e.g., implement Stage 1 of the customer's drought contingency plan).
- b. The General Manage, or his designee(s), will provide a weekly report to the news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

# Stage 2 - Moderate Water Shortage Conditions

- 1. Goal: achieve a 15 percent reduction in daily water demand.
- 2. Supply Management Measures: Communicate with customers to reduce daily demand. Utilize news media to inform and persuade public to reduce demand.
- 3. Demand Management Measures:
  - a. The General Manager, or his designee(s), will initiate weekly contact with wholesale water customers to discuss water supply and/or demand conditions and the possibility of pro rata curtailment of water diversions and/or deliveries.
  - b. The General Manager, or his designee(s), will request wholesale water customers to initiate mandatory measures to reduce non-essential water use (e.g., implement Stage 2 of the customer's drought contingency plan).
  - c. The General Manager, or his designee(s), will initiate preparations for the implementation of pro rata curtailment of water diversions and/or deliveries by preparing a monthly water usage allocation baseline for each wholesale customer according to the procedures specified in Section IX of the plan.
  - d. The General Manager, or his designee(s), will provide a weekly report to news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information of water conservation measures and practices.

# Stage 3 – Severe Water Shortage Conditions

- 1. Goal: achieve a 20 percent reduction in daily water demand.
- 2. Supply Management Measures: Communicate with customers to reduce daily demand. Utilize news media to inform and persuade public to reduce demand. Pro-rata curtailment will be utilized.
- 3. Demand Management Measures:
  - a. The General Manager, or his designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use (e.g., implement Stage 2 of the customer's drought contingency plan.)

- b. The General Manager, or his designee(s), will initiate pro-rate curtailment of water diversions and/or deliveries for each wholesale customer according to the procedures specified in Section VI of the Plan.
- c. The General Manager, or his designee(s), will provide a weekly report to the news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

# Stage 4 - Emergency Water Shortage Conditions

Whenever emergency water shortage conditions exist as defined in Section VII of the Plan, the General Manager shall:

- 1. Assess the severity of the problem and identify the actions needed and time required to solve the problem.
- 2. Inform the utility director or other responsible official of each wholesale water customer by telephone or in person and suggest actions, as appropriate, to alleviate problems (e.g., notification of the public to reduce water use until service is restored).
- 3. If appropriate, notify city, county, and/or state emergency response officials for assistance.
- 4. Undertake necessary actions, including repairs and/or clean up as needed.
- 5. Prepare a post-event assessment report on the incident and critique of emergency response procedures and actions.

# Section IX: Pro Rata Water Allocation

In the event that the triggering criteria specified in Section VII of the Plan for Stage 3 – Severe Water Shortage conditions have been met, the General Manager is hereby authorized to initiate allocation of water supplies on a pro-rata basis in accordance with the Texas Water Code Section 11.039 and according to the following water allocation policies and procedures:

- 1. A wholesale customer's monthly allocation shall be a percentage of the customer's water usage baseline. The percentage will be set by resolution of the Northeast Texas Municipal Water District Board of Directors based on the General Manager's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the Northeast Texas Municipal Water District Board of Directors as conditions warrant. Once pro-rata allocation is in effect, water diversions by or deliveries to each wholesale customer shall be limited to the allocation established for each month.
- 2. The General Manager, or his designee, for each wholesale customer, shall establish a monthly water usage allocation. The wholesale customer's water usage baseline will be computed on the average water usage by month for the

last 5-year period as shown on the example given below. If the wholesale customer's billing history is less than 5 years, the monthly average for the period for which no billing history exists.

**Example Calculation of Monthly Allocation for Hypothetical Wholesale Water Customer:** 

	1994	1995	1996	1997	1998	SUM	AVE	Allocation Percentage	Monthly Allocation
									-
Jan	133	137	146	148	156	720	144	75%	108
Feb	115	122	133	133	147	650	130	75%	98
Mar	130	150	146	149	159	734	147	75%	110
April	130	167	168	157	187	809	162	75%	122
May	160	152	179	183	171	845	169	75%	127
June	226	184	172	205	249	1036	207	75%	155
July	235	274	232	314	246	1301	260	75%	195
August	222	203	206	337	309	1277	255	75%	191
Sept	199	160	196	229	198	982	196	75%	147
Oct	165	172	197	165	185	884	177	75%	133
Nov	139	142	149	153	162	745	149	75%	112
Dec	142	143	150	156	165	756	151	75%	113
Total	1996	2006	2074	2329	2334		2147		

- 3. The General Manager shall provide notice, by certified, to each wholesale customer informing them of their monthly water usage allocations and shall notify the news media and the executive director of the Texas Natural Resource Conservation Commission upon initiation of pro-rata water allocation.
- 4. Upon request of the customer or at the initiative of the General Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the wholesale customer's normal water usage; (2) the customer agrees to transfer part of its allocation to another wholesale customer: or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the Northeast Texas Municipal Water District Board of Directors of the Northeast Texas Municipal Water District.

# Section X: Enforcement

During any period when pro-rata allocation of available water supplies is in effect, wholesale customers shall pay the following surcharges on excess water diversions and/or deliveries:

- 1. 1.1 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation up through 5 percent above the monthly allocation, to the extent legally permitted.
- 2. 1.2 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 5 percent through 10 percent above the monthly allocation, to the extent legally permitted.
- 3. 1.5 times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from 10 percent through 15 percent above the monthly allocation, to the extent legally permitted.
- 4. 2.0 times the normal water charge per acre-foot for water diversions and/or deliveries more than 15 percent above the monthly allocation, to the extent legally permitted.
- 5. The above surcharges shall be cumulative.

#### Section XI: Variances

The General Manager, or his designee, may, in writing, grant a temporary variance to the pro-rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety and if one or more of the following conditions are met:

- 1. Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other conditions for which the Plan is in effect: or
- 2. Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for a variance with the General Manager within 5 days after pro-rata allocation have been invoked. All petitions for variances shall be reviewed by the Northeast Texas Municipal Water District Board of Directors, and shall include the following:

- 1. Name and address of the petitioner(s).
- 2. Detailed statement with supporting data and information as to how the prorata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
- 3. Description of the relief requested.
- 4. Period of time for which the variance is sought.
- 5. Alternative measures the petitioner is taking or proposes to take to meet the intent of this plan and the compliance date.
- 6. Other pertinent information.

Variances granted by the Northeast Texas Municipal Water District Board of Directors shall be subject to the following conditions, unless waived or modified by the Northeast Texas Municipal Water District Board of Directors of its designee:

- 1. Variances granted shall include a timetable for compliance.
- 2. Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No Variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

#### **Section XII: Contract Provisions**

The Northeast Texas Municipal Water District will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

# **Section XIII: Severability**

It is hereby declared to be the intention of the Northeast Texas Municipal Water District Board of Directors that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional of unenforceable by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality or enforceability shall not affect any of the remaining phases, clauses, sentences, paragraphs, and sections of this Plan, since the same would not have been enacted by the Northeast Texas Municipal Water District Board of Directors without the incorporation into this Plan of any such unconstitutional, or unenforceable phrase, clause, sentence, paragraph, or section.

Minutes of Regular Meeting Northeast Texas Municipal Water District Board of Directors July 22, 2019 – 10:00 a.m.

The Board of Directors of the Northeast Texas Municipal Water District met in an open meeting on Monday, July 22, 2019 at 10:00 A.M. The meeting was held at Northeast Texas Municipal Water District's Executive Office located at 4180 Farm Road 250, Hughes Springs, Texas 75656. Notice of the meeting was legally posted. A quorum was present.

Present:

Jack Salmon, Jr.

- Avinger

Stan Wyatt Joseph W. Weir, III - Daingerfield

Patrick Smith

- Ore City - Pittsburg

George Otstott

- Jefferson

Staff:

Walt Sears, Jr. Robyn Goodson Pete Wright

Jack Salmon, Jr. called the meeting to order at 10:00 a.m. Joseph W. Weir, III gave the invocation. Mr. Salmon led the directors in the pledge of allegiance to the United States flag and the Texas flag.

On a motion by George Otstott and a second by Joseph W. Weir, III minutes of the June 24, 2019 meeting were approved. Motion carried, all voting aye.

Joseph W. Weir, III made a motion to approve the monthly investment report, financial reports on all current accounts and funds and pay invoices for professional services. Stan Wyatt seconded the motion. Motion carried, all voting aye.

Stan Wyatt made a motion to continue our membership with TWCA and authorized payment of dues in the amount of \$1,430.00. Joseph W. Weir, III seconded the motion. Motion carried, all voting ave.

Stan Wyatt made a motion to approve the June 2019 Southside financial report as presented and approve the quarterly reconciliation and adjusting entries as presented. Joseph W. Weir, III seconded the motion. Motion carried, all voting aye.

Pete Wright gave the Operations Manager report:

- Raw water quality as of June 6th is moderate. The raw water has a muddy smell and is high in manganese,
- Mr. Wright stated that we started adding carbon in the purification process on the 27th of
- Mr. Wright has been communicating with TCEQ and providing reports needed for the City of Daingerfield and Pittsburg to meet the requirements for their annual CCRs,
- One bid was received for sludge removal from Mr. Crawford, bid amount \$17.00 a cubic yard. George Otstott made a motion to approve and accept the bid from Mr. Crawford for sludge removal at the bid of \$17.00 a cubic yard. Stan Wyatt seconded the motion. Motion Carried, all voting aye,
- Daingerfield control valve is back to normal operation after a 2-week disablement due to thunderstorms, and
- Due to high water level we are still unable to reach Lake O' the Pines raw water pump station through normal access.

On a motion by Stan Wyatt and a second by George Otstott, the extension of the Clean Rivers Program contract with TCEQ for a 2-year period was authorized to enable additional work with grant funds. Motion carried, all voting aye.

Stan Wyatt made a motion to amend the Drought Contingency Plan to include additional language on pro-rata distributions in appropriate circumstances. Joseph W. Weir III seconded the motion. Motion carried, all voting aye.

Board of Directors Minutes July 22, 2019 Page 2

Discussion occurred on NETMWD's position concerning the possible Federal Water Supply Rule. A resolution had been drafted regarding this topic. George Otstott made a motion to adopt the resolution regarding the Federal Water Supply Rule. Stan Wyatt seconded the motion. Mr. Weir inquired about the procedure regarding the two board members who were not present and securing their signatures on the resolution. After discussion, Mr. Otstott amended the motion to enable the board to approve with the five members who were present and to subsequently allow the General Manager to contact the other two board members to seek their signatures on the resolution if those Board members desired to sign it. Stan Wyatt seconded the amendment. The motion was amended, all voting aye.

During the General Manager's report, Mr. Sears discussed RWSS production and costs. It was reported that the RRVA Oklahoma Conference is scheduled to meet August 22, 2019.

The next meeting of the Board of Directors was set for August 26, 2019, on a motion made by Joseph W. Weir, III. Stan Wyatt seconded the motion. Motion carried, all voting aye.

No public comments were made.

Motion to adjourn was made by Stan Wyatt. Joseph W. Weir, III seconded the motion. Motion carried, all voting aye.

APPROWED:

Saundra I Weyler Presiden

Jack Salmon, Jr., Secretary/Treasurer

#### CERTIFICATE OF ADJUDICATION

CERTIFICATE OF ADJUDICATION: 04-4590 OWNER: Northeast Texas Municipal

Water District P. O. Box 955

Hughes Springs, Texas

75656

COUNTY: Marion PRIORITY DATE: September 16, 1957

WATERCOURSE: Johnson Creek, tributary BASIN: Cypress Creek

of Cypress Creek and

Cypress Creek

(Lake 0' the Pines)

WHEREAS, by-final decree of the 188th Judicial District Court of Gregg County, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 a right was recognized under Permit 1897ABC authorizing the Northeast Texas Municipal Water District to appropriate waters of the State of Texas as set forth below;

NOW, THEREFORE, this certificate of adjudication to appropriate waters of the State of Texas in the Cypress Creek Basin is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

#### 1. IMPOUNDMENT

Owner is authorized to store 251,000 acre feet of water in an existing dam and reservoir on Cypress Creek, known as Lake 0' the Pines, which is owned by the United States of America and operated by the U.S. Corps of Engineers, between elevation 201 feet and elevation 228.5 feet above mean sea level. The dam is located in the A. Abram Survey, Abstract 3; the Joseph French Survey, Abstract 131; the Mrs. E.T. Jones Survey, Abstract 232; the T.B. Morton Survey, Abstract 283 and the David Chote Survey, Abstract 80, Marion County, Texas.

#### 2. USE

- A. Owner is authorized to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for municipal and domestic purposes of which not more than 1930 acre-feet of water per annum may be diverted from Lake Bob Sandlin by the City of Pittsburg in accordance with the trilateral agreement between the Titus County Fresh Water Supply District No. 1; the City of Pittsburg and the owner of this certificate.
- B. Owner is authorized to divert and use not to exceed 161,800 acre-feet of water per annum from the aforesaid reservoir and

Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre feet of water per annum may be diverted from Lake Bob Sandlin.

- C. Owner is authorized to release sufficient amounts of industrial use water from Lake 0' the Pines, to provide for the transwatershed diversion of 18,000 acre-feet of water per annum to the Sabine River Basin. Released water will be diverted from Cypress Creek and transported via pipeline for storage in Southwestern Electric Power Company's cooling Pond on Brady Branch, tributary of the Sabine River, Sabine River Basin.
- D. Owner is also authorized to use the impounded water of the aforesaid reservoir for recreation purposes.

#### 3. DIVERSION

- A. Location:

  At the perimeter of the aforesaid reservoir and from the perimeter of Lake Bob Sandlin under the Reservoir Operation Agreement.
- B. Maximum rates are as shown:
  - (1) 1300.00 cfs (585,000 gpm) from Lake O' the Pines.
  - (2) 85.00 cfs (38,250 gpm) from Lake Bob Sandlin.

#### 4. PRIORITY

The time priority of owner's right is September 16, 1957.

# 5. SPECIAL CONDITIONS

- A. Owner shall maintain a suitable outlet in the aforesaid dam authorized herein to allow the free passage of water that owner is not entitled to divert or impound.
- B. Owner is authorized to use the bed and banks of Cypress Creek, below the aforesaid dam, to convey and deliver water to be appropriated hereunder to downstream diversion points.
- C. Owner's rights hereunder are subject to an agreement for reservoir operations on Cypress Creek between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin County Water District, the Northeast Texas Municipal Water District and the Lone Star Steel Company, dated January 1, 1973 and to subsequent amendments to that agreement or basin operation orders issued by the Commission.

#### Certificate of Adjudication 04-4590

The locations of pertinent features related to this certificate are shown on Page 6 of the Cypress Creek Basin Certificates of Adjudication Maps, copies of which are located in the offices of the Texas Water Commission, Austin, Texas and the office of the County Clerk of Morris and Marion Counties.

This certificate of adjudication is issued subject to all terms, conditions and provisions in the final decree of the 188th Judicial District Court of Gregg County, Texas, in Cause No. 86-257-A, In Re: The Adjudication of Water Rights in the Cypress Creek Basin dated June 9, 1986 and supersedes all rights of the owner asserted in that cause.

This certificate of adjudication is issued subject to senior and superior water rights in the Cypress Creek Basin.

This certificate of adjudication is issued subject to the obligations of the State of Texas pursuant to the terms of the Red River Compact.

This certificate of adjudication is issued subject to the Rules of the Texas Water Commission and its continuing right of supervision of State water resources consistent with the public policy of the State as set forth in the Texas Water Code.

TEXAS WATER COMMISSION

DATE ISSUED:

OCT 13 1986

ATTEST:

Mary Ann/Hefner, Chief Clerk

# TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



# AMENDMENT TO CERTIFICATE OF ADJUDICATION

#### CERTIFICATE NO. 04-4590A

Permittee

: Northeast Texas Municipal

Address

P.O. Box 955

Hughes Springs, Texas 75656

Filed

: August 22, 1995

Water District

Granted

DEC 1 5 1995

Purpose

: Municipal, Domestic, Industrial

County

¥ ....

And Recreation

County

Marion

Watercourse

: Johnson Creek, tributary

Watershed

Cypress Basin

of Cypress Creek and Cypress

Creek

WHEREAS, Certificate of Adjudication No. 04-4590 was issued to the Northeast Texas Municipal Water strict on October 13, 1986 and authorized certificate owner to store 251,000 acre-feet of water in an existing damand reservoir on Cypress Creek known as Lake O' the Pines; and

WHEREAS, owner is authorized: to divert and use not to exceed 42,000 acre-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin (immediately upstream of Lake O' the Pines) for municipal and domestic purposes; to divert and use not to exceed 161,800 care-feet of water per annum from the aforesaid reservoir and Lake Bob Sandlin for industrial purposes of which not more than 10,000 acre-feet of water per annum may be diverted from Lake Bob Sandlin and to use the impounded water of Lake O' the Pines for recreational purposes; and

WHEREAS, an application was received from Northeast Texas Municipal Water District wherein applicant seeks to amend the certificate by authorizing transwatershed diversion of an additional 20,000 acre-feet of water per annum from Lake O' the Pines into the Sabine River Basin for municipal and industrial use by the City of Longview; and

WHEREAS, the water will be diverted from the perimeter of the reservoir on the south shore of Lake O' the Pines at a rate of diversion not to exceed 100 cfs (44,883 gpm); and

WHEREAS, the Texas Natural Resource Conservation Commission finds that jurisdiction over the application is established; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Natural Resource Conservation Commission in issuing this amendment; and

NOW, THEREFORE, this amendment to Certificate No. 04-4590 is issued to Northeast Texas Municipal Water District, subject to the following terms and conditions:

#### 1. USE

In addition to the uses contained in Certificate No. 04-4590, owner is authorized to provide for the transwatershed diversion of 20,000 acre-feet of water per annum for municipal and industrial uses from Lake O' the Pines to the Sabine River Basin for use by the City of Longview, Texas.

#### 2. DIVERSION RATE

Water diverted from the perimeter of the reservoir at a maximum rate of 100 cfs (44,883 gpm)

#### WATER CONSERVATION

Owner shall maintain a water conservation plan that provides for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future use or alternative uses. Such plan shall include a requirement in every wholesale water supply contract entered into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement water conservation measures. If the customer intends to resell the water, then the contract for the resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water will be required to implement water conservation measures.

#### TIME PRIORITY

The time priority of this amendment is September 6, 1957.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate No. 04-4590, except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Basin.

Certificate owner agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Natural Resource Conservation Commission and to the right of continuing supervision of State water resources exercised by the Commission.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

or the Commission

Date Issued: NFC 15 1995

**\TTEST**:

Gloria A. Vasquez, Chief Clerk

# Texas Commission on Environmental Quality



#### AMENDMENT TO A CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 04-4590B

TYPE: §11.085

Owner:

Northeast Texas Municipal

Address:

P.O. Box 955

Water District

Hughes Springs, Texas 75656

Filed:

May 15, 2008

Granted:

OCT 1 4 2008

Purpose:

Municipal, Domestic, Industrial,

Counties:

and Recreation

Marion, Harrison

Watercourse:

Johnson Creek, Tributary of

Watershed:

Cypress Creek Basin, Sabine

Cypress Creek, and Cypress Creek

River Basin

WHEREAS, Northeast Texas Municipal Water District (Owner) is authorized to store 251,000 acrefeet of water in Lake O' the Pines, owned by the United States (U.S.) and operated by the U.S. Army Corps of Engineers, on Cypress Creek, Cypress Creek Basin, for recreation purposes; and

WHEREAS, Owner is authorized to divert and use not to exceed 42,000 acre-feet per year from Lake O' the Pines and Lake Bob Sandlin on Cypress Creek, Cypress Creek Basin, for municipal and domestic purposes, of which not more than 1,930 acre-feet of water per year may be diverted from Lake Bob Sandlin by the City of Pittsburg, and to divert and use not to exceed 161,800 acre-feet of water per year from Lake O' the Pines and Lake Bob Sandlin for industrial purposes of which no more than 10,000 acre-feet of water per year may be diverted from Lake Bob Sandlin; and

WHEREAS, Owner is authorized to divert from the perimeter of Lake O' the Pines at a maximum diversion rate of 1,300 cfs (585,000 gpm) and from the perimeter of Lake Bob Sandlin at a maximum diversion rate of 85 cfs (38,250 gpin); and

WHEREAS, Owner is authorized interbasin transfer of not to exceed 18,000 acre-feet of water per year from Lake O' the Pines for industrial purposes and not to exceed 20,000 acre-feet per year from Lake O' the Pines at a maximum diversion rate of 100 cfs (44,883 gpm) for municipal and industrial purposes in the Sabine River Basin; and

WHEREAS, Owner is authorized to use the bed and banks of Cypress Creek below Lake O' the Pines to convey and deliver water to downstream diversion points; and

WHEREAS, Owner's time priority for this Certificate is September 6, 1957, and multiple special conditions apply; and

WHEREAS, pursuant to the Northeast Texas Municipal Water District Raw Water Purchase Contract with the City of Marshall, dated February 1, 2006, Northeast Texas Municipal Water District has applied to amend Certificate of Adjudication No. 04-4590 to authorize an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines (out of the water currently authorized for diversion) for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall; and

WHEREAS, the water will be conveyed using the bed and banks of Cypress Creek and diverted at the City of Marshall's diversion point on Cypress Creek authorized under Certificate of Adjudication No. 04-4614, and

WHEREAS, this application is subject to the obligations of the state of Texas pursuant to the terms of the Red River Compact; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends that special conditions be included in the amendment; and

WHEREAS, no requests for a contested case hearing were received for this application; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality Commission in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 04-4590, designated Certificate of Adjudication No. 04-4590B, is issued to the Northeast Texas Municipal Water District, subject to the following terms and conditions:

#### 1. USE

In addition to the current authorization, Owner is authorized an exempt interbasin transfer of 9,000 acre-feet of water per year from Lake O' the Pines (out of the water currently authorized for diversion) for municipal, domestic, and industrial purposes from that portion of Harrison County located in the Cypress Creek Basin to that portion of Harrison County in the Sabine River Basin for use by the City of Marshall pursuant to the Northeast Texas Municipal Water District Raw Water Purchase Contract, dated February 1, 2006.

#### 2. PRIORITY

The time priority for this amendment is September 6, 1957.

#### CONSERVATION

Owner shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses. Such plans shall include a requirement that in every wholesale water contract entered into, on or after the effective date

of this amendment, including any contract extension or renewal, that each successive wholesale customer develop and implement conservation measures. If the customer intends to resell the water, then the contract for resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water is required to implement water conservation measures.

#### 4. SPECIAL CONDITIONS

In addition to the special conditions already present in Certificate of Adjudication No. 04-4590, as amended, which remain in effect, the following special conditions apply:

- A. The authorization granted herein is subject to the continued maintenance of the Northeast Texas Municipal Water District Raw Water Purchase Contract, dated February 1, 2006, between Northeast Texas Municipal Water District and the City of Marshall or extensions thereof. Upon expiration of said contract, Owner shall cease conveyance of the authorized water to the City of Marshall and the City of Marshall shall cease diversion of that water and either apply to amend the certificate, or voluntarily forfeit this amendment. If the Owner does not amend the Certificate or forfeit the amendment, the Commission may begin proceedings to cancel this amendment. The Commission shall be notified immediately by Owner upon amendment or expiration of the water supply contract and provided with copies of appropriate documents effecting such changes.
- B. Within 90 days prior to diversion of the water for industrial use, the applicant or contract customer must submit a water conservation plan for industrial use to the TCEQ that complies with Title 30 Texas Administrative Code §288.3.

This amendment is issued subject to all terms, conditions, and provisions contained in Certificate of Adjudication No. 04-4590, as amended, except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the Cypress Creek Basin.

This amendment is issued subject to the obligations of the state of Texas pursuant to the terms of the Red River Compact

Owner agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

For the Commission

ISSUED: OCT 1 4 2008