Bryan W. Shaw, Ph.D., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 1, 2013

Ms. Bridget Bohac, Chief Clerk
Office of the Chief Clerk
Texas Commission on Environmental Quality
P.O. Box 13087, MC-105
Austin, Texas 78711-3087

Re: Docket No. 2013-1871-UCR. Consideration of the compensation phase of a petition from EB Windy Hill, L.P. to decertify a portion of certificate of convenience and necessity (CCN) No. 12983 held by Monarch Utilities I, L.P.

Dear Ms. Bohac:

Enclosed for filing with the Texas Commission on Environmental Quality (Commission) is the original plus seven copies of the following backup materials for the November 20, 2013, agenda item on the above referenced matter:

1. Agenda Executive Summary;

2. Caption;

3. Proposed order;

4. Petition for expedited release from EB Windy Hill, L.P., filed January 8, 2013;

5. Order from the Executive Director granting EB Windy Hill's expedited release petition, dated February 13, 2013;

6. Letter from the City of Kyle expressing its intent to provide EB Windy Hill with water service, dated May 8, 2013;

7. Letter from City of Kyle authorizing EB Windy Hill to file appraisal, dated July 8, 2013;

8. Appraisal prepared for EB Windy Hill by Murfee Engineering Company, Inc., dated July 8, 2013;

9. Letter from ED directing parties to obtain independent appraisers, dated July 12, 2013;

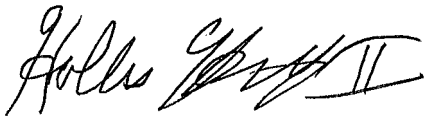
10. Appraisal prepared for Monarch Utilities I, L.P. by Jones – Heroy & Associates, Inc, dated July 19, 2013;

11. Appraisal (REVISED) prepared for EB Windy Hill by Murfee Engineering Company, Inc., dated July 19, 2013;

12. Appraisal prepared for the Commission by Bret Fenner, P.E., dated August 14, 2013.

Please do not hesitate to contact me at (512) 239-0602 if you have any questions regarding this material. Thank you for your attention to this matter.

Respectfully submitted,



Hollis Henley
Staff Attorney
Environmental Law Division

Enclosure

cc: Brian Dickey, Water Supply Division, MC-153
Elizabeth Flores, Water Supply Division, MC-153
Blas Coy, TCEQ Office of Public Interest Counsel, MC-103
Lambeth Townsend, Attorney for Monarch Utilities I, L.P. (attachments 4-12 not included)
Ronald J. Freeman, Attorney for EB Windy Hill, L.P. (attachments 4-12 not included)

Attachment “1”

TCEQ DOCKET NO. 2013-1871-UCR
APPLICATION NO. 37655

CONSIDERATION OF A REQUEST	**§**	**TEXAS COMMISSION**
FOR A COMMISSION ORDER	**§**	
DETERMINING THE AMOUNT OF	**§**	
COMPENSATION OWED TO	**§**	
MONARCH UTILITIES I, L.P. BY EB	**§**	
WINDY HILL, L.P. FOR AREA	**§**	
DECERTIFIED FROM MONARCH	**§**	**ON**
UTILITIES I L.P.'S WATER	**§**	
CERTIFICATE OF CONVENIENCE	**§**	
AND NECESSITY (CCN) NO. 12983 IN	**§**	
HAYS COUNTY, TEXAS DUE TO AN	**§**	
EXPEDITED RELEASE PETITION	**§**	
FILED BY EB WINDY HILL, L.P.	**§**	**ENVIRONMENTAL QUALITY**

THE EXECUTIVE DIRECTOR'S BRIEF

TO THE HONORABLE COMMISSIONERS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

I. FACTUAL BACKGROUND

EB Windy Hill, L.P. (Applicant) submitted a petition to the Commission to decertify a portion of Monarch Utilities I, L.P.'s (Monarch) CCN on January 8, 2013. This petition was submitted under section 13.254(a-5) of the Texas Water Code (TWC). The petition was accepted for filing on January 24, 2013. The petition was granted by order of the Executive Director on February 13, 2013. The monetary compensation amount for the former CCN holder is determined when a retail public utility seeking to serve the decertified area notifies the Commission (TCEQ) of its intent to serve. 30 TAC §291.113(i). On May 20, 2013, the TCEQ received a letter from the City of Kyle dated May 8, 2013 notifying TCEQ of its intent to provide service to the decertified area.

The City of Kyle sent the TCEQ a letter, dated July 8, 2013, authorizing Windy Hill to file the required appraisal report. On July 8, 2013, the Applicant submitted an appraisal and documentation, with a proposed valuation of the decertified property of $25,223. In the cover letter to the compensation report, Windy Hill states that it, rather than the City of Kyle, will compensate Monarch for the decertified area.

As of July 12, 2013, there was no agreement between the parties on an independent appraiser. The ED sent a letter to each party instructing them to individually engage an independent appraiser at their own expense and submit the appraisal by July 19, 2013.

On July 19, 2013, the Applicant submitted an appraisal and documentation, revising Applicant's original appraisal report, with a proposed valuation of the decertified property of $25,223. On July 19, 2013, Monarch submitted an appraisal and documentation, with a proposed valuation of the decertified property of $3,748,489.

On July 31, 2013, the ED appointed a third appraiser, Bret Fenner, P.E., to determine the amount of compensation pursuant to TWC §13.254(g-1). Mr. Fenner completed his appraisal on August 14, 2013, setting the value of compensation due to the Monarch at $275,512.

II. LEGAL AUTHORITY

Section 13.254(a-5) of the Texas Water Code allows a landowner to petition the Commission for expedited release from a CCN if: (1) the landowner's tract is at least 25 acres; (2) the tract is not receiving water or sewer service; and (3) the tract is located in a county with a population of at least one million, a county a county adjacent to a county with a population of at least one million, or a county with a population of more than 200,000 and less than 220,000 that does not contain a public or private university that had a total enrollment in the most recent fall semester of 40,000 or more, and not in a county that has a population of more than 45,500 and less than 47,500.

If a retail public utility (RPU) intends to provide water or sewer service to a decertified area, the new RPU must compensate the former CCN holder before serving the area.[1] Once the new RPU notifies the Commission of its intent to serve the area, the compensation amount is determined through one of two different ways. Either the RPUs agree on an independent appraiser, whose determination is binding on the Commission;[2] or if the RPUs do not agree on an appraiser, each hires its own.[3] In the latter scenario, the ED must appoint a third appraiser.[4] This third appraisal cannot be less than the lower appraisal nor more than the higher appraisal.[5] The appraisers must use the standards found in section 30 TAC 291.113(k) when conducting their appraisals and determining the amount of compensation.

III. BASIS FOR STAFF RECOMMENDATION

The following items were considered in developing the staff's recommendation:

1. Appraisal of the area released from Monarch's CCN prepared for Applicant, under the authorization of the City of Kyle, by Murfee Engineering Company, Inc., filed on July 8, 2013;

2. Appraisal of the area released from Monarch's CCN prepared for Monarch by Jones – Heroy & Associates, Inc., dated July 19, 2013;

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[1] *Id.* § 291.113(h).
[2] *Id.* § 291.113(j).
[3] *Id.* § 291.113(j)(1).
[4] *Id.* § 291.113(j)(2).
[5] *Id.*

3. Revised appraisal of the area released from Monarch's CCN prepared for Applicant, under the authorization of the City of Kyle, by Murfee Engineering Company, Inc., dated July 19, 2013; and

4. Appraisal of the area released from Monarch's CCN prepared for the Commission by Bret Fenner, P.E., dated August 14, 2013.

IV. STAFF RECOMMENDATION

Bret Fenner calculated a compensation amount of $275,512. As detailed in the attached appraisal, this value included the amount of any expenditure for planning design, or construction of service facilities that are allocable to service the Applicant's area; any demonstrated impairment of service or increase of cost to consumers of the retail public utility remaining after the decertification; and necessary and reasonable legal expenses and profession fees. Therefore, the ED recommends that the amount of compensation be set at $275,512.

In accordance with the compensation process detailed in 30 TAC § 291.113, the ED recommends that the Commission approve the attached order, which directs Windy Hill to pay $275,512 to Monarch as compensation for the territory removed from its CCN.

Respectfully submitted,

Texas Commission on Environmental Quality

Zak Covar
Executive Director

Robert Martinez, Director
Environmental Law Division

By_____

Hollis Henley, Staff Attorney
Environmental Law Division
State Bar of Texas No. 24066672
P.O. Box 13087, MC-173
Austin, Texas 78711-3087
Phone: 512.239.0602
Fax: 512.239.0606

REPRESENTING THE
EXECUTIVE DIRECTOR OF THE TEXAS
COMMISSION ON ENVIRONMENTAL QUALITY

CERTIFICATE OF SERVICE

I certify that on November 1, 2013, a copy of the foregoing document was sent by electronic mail and/or electronic service to the persons on the attached Mailing List.

Hollis Henley, Staff Attorney
Environmental Law Division

Mailing List

Monarch Utilities I, L.P.

TCEQ Docket No. 2013-1871-UCR

FOR MONARCH UTILITIES I, L.P.:
Lambeth Townsend
Lloyd Gosselink Rochelle & Townsend
816 Congress Avenue, Suite 1900
Austin, Texas 78701
Fax: (512) 472-0532
Phone: (512) 322-5866
Email: ltownsend@lglawfirm.com

FOR EB WINDY HILL, L.P.:
Ronald Freeman
Freeman & Corbett
8500 Bluffstone Cove, Suite B-104
Austin, Texas 78759
Phone: (512) 451-6689
Fax: (512) 453-0865
Email: rfreeman@freemanandcorbett.com

Brian Dickey
Elizabeth Flores
TCEQ Water Supply Division MC 159
PO Box 13087
Austin, Texas 78711-3087
Phone: (512) 239-4691
Fax: (512) 239-2214

Blas Coy
Office of Public Interest Counsel
Texas Commission on Environmental Quality
P.O. Box 13087, MC-103
Austin, Texas 78711-3087
Phone: (512) 239-6363
Fax: (512) 239-6377

Attachment “2”

CAPTION
MONARCH UTILITIES I, L.P.
Application No. 37510-C

TCEQ Docket No. 2013-1871-UCR. Consideration of a Commission order setting the compensation amount for the decertification from Monarch Utilities I, L.P. of a portion of Certificate of Convenience and Necessity (CCN) No. 12983, in Hays County, Texas, pursuant to section 13.254(a-6) of the Texas Water Code. The Commission will consider appraisals of the decertified area conducted on behalf of Monarch, the landowner EB Windy Hill, L.P., and the Executive Director. (Hollis Henley, Brian Dickey)

Attachment “3”

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER determining the amount of compensation owed to Monarch Utilities I, L.P. by EB Windy Hill, L.P. for area decertified from Monarch Utilities I, L.P.'s water certificate of convenience and necessity (CCN) No. 12983 due to an expedited release petition filed by EB Windy Hill, L.P.; TCEQ Docket No. 2013-1871-UCR.

A request for a Commission order determining the amount of compensation owed to Monarch Utilities I, L.P. (Monarch) by EB Windy Hill, L.P. for area decertified from Monarch's CCN No. 12983 due to an expedited release petition filed by EB Windy Hill, L.P. (Windy Hill), in Hays County, Texas, was presented to the Texas Commission on Environmental Quality (TCEQ or Commission) pursuant to section 13.254(a-6) of the Texas Water Code.

On January 8, 2013, Windy Hill filed a petition for an expedited release of approximately 445 acres from Monarch's water CCN No. 12983. The Executive Director (ED) granted the petition in an order dated February 13, 2013. The City of Kyle sent a letter to the TCEQ dated May 8, 2013, informing the agency that it intends to provide Windy Hill's property with water utility service. In a letter dated July 8, 2013, the City of Kyle authorized Windy Hill to file the compensation report on its behalf. Windy Hill submitted an appraisal report on July 8, 2013. Because Monarch and Windy Hill were unable to agree on an appraiser, Monarch submitted its own appraisal and Windy Hill modified its original appraisal, both on July 19, 2013. ED staff then requested a third appraisal to be completed based on the first two appraisals. The third appraisal, dated August 14, 2013, was provided to the TCEQ. The cost of the third appraisal was $5,100.

Windy Hill's appraisal valued Monarch's loss at $25,223.00. Monarch's appraisal valued Monarch's loss at $3,748,489.00. The third appraisal valued Monarch's loss at $275,512.00.

The Commission held a hearing on the request at its November 20, 2013, agenda meeting and found the request has merit.

Pursuant to 30 TAC § 291.113, City of Kyle may not render retail water service to the decertified area without Monarch being provided compensation for this property.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY that:

1. Within ninety days of this order, the Windy Hill shall pay $275,512.00 to Monarch and the City of Kyle shall not in any way render service to Windy Hill's property until this amount has been paid.
2. If they have not already done so, within thirty days of this order, Windy Hill and Monarch shall each pay one-half of the cost of the third appraisal, $5,100 to Bret Fenner, P.E.
3. The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this order to the parties.
4. If any provision, sentence, clause, or phrase of this order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the order.

Issue Date:

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

_____

For the Commission

Attachment "4"

PETITION FOR EXPEDITED RELEASE OF PROPERTY

THE STATE OF TEXAS §

COUNTY OF TRAVIS §

TO THE HONORABLE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

The undersigned ("Petitioner") acting pursuant to the provisions of Chapter 13 of the Texas Water Code, respectfully petitions the Texas Commission on Environmental Quality (the "Commission") for expedited release of the lands hereinafter described from the certificated service territory of Monarch Utilities I LP ("Monarch") and would show the following:

I.

Petitioner is the owner of the approximate 445.11 acre tract of real property further described by metes and bounds and by sketch in **Exhibit "A"** attached hereto and hereby incorporated by reference for all purposes (the "Property"). Petitioner intends to file a petition with the Commission to create a municipal utility district on the property and attached as **Exhibit "B"** hereto is a copy of the Hays Central Appraisal District Chief Appraiser evidencing Petitioner's fee ownership of the Property.

II.

Monarch is the holder of water Certificate of Convenience and Necessity No. 12983 (the "CCN"). The Property is located within the certificated water service territory of Monarch, as defined by the CCN.

III.

The Property is located within Hays County. According to the United States 2010 Census, Hays County has a population of 157,107. Hays County is adjacent to Travis County, which according to the United States 2010 Census, has a population of 1,024,266.

IV.

Petitioner affirms that the Property is not receiving water or sewer service from Monarch.

V.

Pursuant to Section 13.254(a-5) and (a-6) of the Texas Water Code, Petitioner is entitled to expedited release of the Property from the CCN because the

Property: (i) is a tract of land at least 25 acres; (ii) is located within the CCN; (iii) is not receiving water or sewer service from Monarch; and (iv) is located within a county adjacent to a county with a population of at least one million.

VI.

WHEREFORE, Petitioner prays that this Petition be deemed properly filed in accordance with Section 13.254(a-5) and (a-6) of the Texas Water Code; that this Petition be heard and granted in all respects; that the Commission enter an order releasing the Property from CCN No. 12983, and that such other orders, acts, procedures and relief be granted as are necessary and proper for the release of the Property from CCN No. 12983.

RESPECTFULLY SUBMITTED this _____ day of _____, 2012

EB WINDY HILL, L.P., a Texas limited partnership
By EBWH GP, Inc., its general

Rick Parke

By Rick Parke
Its Vice President

STATE OF TEXAS §
§
COUNTY OF TRAVIS §

This instrument was acknowledged before me on the 2nd day of November, 2012, by Rick Parke, as Vice President of EBWH GP, Inc., a Texas corporation, general partner of EB Windy Hill, L.P., a Texas limited partnership, on behalf of said limited partnership.

(Seal and Expiration)

LISA C BARLOW
Notary Public, State of Texas
My Commission Expires
April 25, 2015

Lisa C Barlow

Notary Public, State of Texas

EXHIBIT A

FIELD NOTES

BEING ALL THAT CERTAIN TRACT OR PARCEL OF LAND OUT OF AND A PART OF THE JESSE B. EAVES SURVEY, ABSTRACT 166, AND THE SAMUEL LITTLE SURVEY, ABSTRACT 286, SITUATED IN HAYS COUNTY, TEXAS, SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS BEING A PORTION OF THAT CERTAIN 446.80 ACRES OF LAND CONVEYED TO H.H. PHILLIPS IN VOLUME 201, PAGE 19 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS, SAID TRACT BEING 445.11 ACRES OF LAND MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING, at an iron pin found on the South right-of-way line of County Road 131, said iron pin also being located at the most northeasterly corner of Lot 27, Block D, of Dove Hills Estates Section One, a subdivision recorded in Volume 2, Page 325 of the Deed Records of Hays County, Texas, said iron pin also being located at the most northwesterly corner of the herein described tract, and also **POINT OF BEGINNING** of the herein described tract,

THENCE, with the new South right-of-way line of said County Road 131 S89°08'29"E, a distance of 2,340.02 feet to an iron pin found, said iron pin being located at a point of curvature to the left,

THENCE, continuing with curve along the new South right-of-way line of said County Road 131 that has a central angle of 12°27'00", a radius of 1628.52 feet, a length of 353.87 feet, a chord of 353.17 feet, and a bearing of N84°38'01"E, to an iron pin found,

THENCE, leaving the new right-of-way line of said County Road 131 and continuing with the old right-of-way line of said County Road 131, S89°59'48"E, a distance of 124.98 feet to a concrete nail, said nail being located along the common line of said Samuel Little Survey and said Jesse B. Eaves Survey, said nail also being located at the most northeasterly corner of the herein described tract,

THENCE, leaving the old right-of-way line of said County Road 131 and continuing with the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S45°23'27"W, a distance of 981.04 feet to an iron pin, said iron pin being a westerly corner of the herein described tract,

THENCE, leaving the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S44°46'41"E, a distance of 134.69 feet to an iron pin found, said iron pin being located at the West corner of a 7.771 acre tract of land conveyed to Alice Rios in Document 9925762 of the Deed Records of Hays County, Texas,

THENCE, continuing along an eastern line of the herein described tract S45°05'21"E, a distance of 1,003.31 feet to an iron pin found, said iron pin being located at the South corner of a 9.998 acre tract of land conveyed to Ronald D. Holifield and Melodie A. Holifield in Volume 1324, Page 651 of the Deed Records of Hays County, Texas,

THENCE, continuing along an east line of the herein described tract S44°42'12"E, a distance of 181.24 feet to a concrete nail, said nail being located at the North corner of a 100.15 acre tract of land conveyed to Ray E. Jones and Annie B. Jones in Volume 1135, Page 868 of the Deed Records of Hays County, Texas, said nail also being located at an East corner of the herein described tract,

THENCE, with the North line of said Jones Tract, S45°25'00"W, a distance of 1,662.52 feet to an iron pin, said iron pin being located at the West corner of said Jones Tract, said iron pin also being located at an East corner of the herein described tract,

THENCE, with the East line of said Jones Tract S44°45'16"E, a distance of 2,630.83 feet to a concrete nail, said nail being located at the South corner of said Jones Tract, said nail also being located at the most easterly corner of the herein described tract, said nail also being located on the North right-of-way line of County Road 157,

THENCE, with the North right-of-way line of said County Road 157 S45°00'00"W a distance of 3,404.46 feet to a concrete nail found, said nail being located at the most easterly corner of Lot 94 of Sunrise Acres, a subdivision recorded in Volume 2, Page 346 of the Deed Records of Hays County, Texas, said nail also being located at the most southern corner of the herein described tract,

THENCE, leaving the North right-of-way line of said County Road 157 and continuing with the most westerly line of said Sunrise Acres the following three (3) courses and distances:

(1) N44°43'39"W, a distance of 2,207.70 feet to an iron pin found,
(2) N44°53'47"W, a distance of 969.22 feet to an iron pin found,
(3) N44°48'29"W, a distance of 758.82 feet to an iron pin found, said iron pin being located at the most northerly corner of said Sunrise Acres, said iron pin also being located at the most westerly corner of the herein described tract,

THENCE, with a west line of the herein described tract N44°38'24"E, a distance of 1,058.81 feet to an iron pin, said iron pin being located at an angle point of Lot 25, of Dove Hills Estates Section Two, a subdivision recorded in Volume 3, Page 179 of the Deed Records of Hays County, Texas,

THENCE, with an eastern line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) N44°52'26"E, a distance of 1,105.77 feet to a 60d nail found,
(2) N44°51'31"E, a distance of 661.25 feet to an iron pin found,
(3) N44°50'37"E, a distance of 399.21 feet to an iron pin found,
(4) N44°44'50"E, a distance of 175.19 feet to an iron pin, said iron pin being located at the most westerly corner of Lot 12 of said Dove Hills Estates Section Two,

THENCE, leaving the eastern line of said Dove Hills Estates Section Two N44°44'50"E, a distance of 14.18 feet to an iron pin found, said iron pin being located at an angle point for the herein described tract,

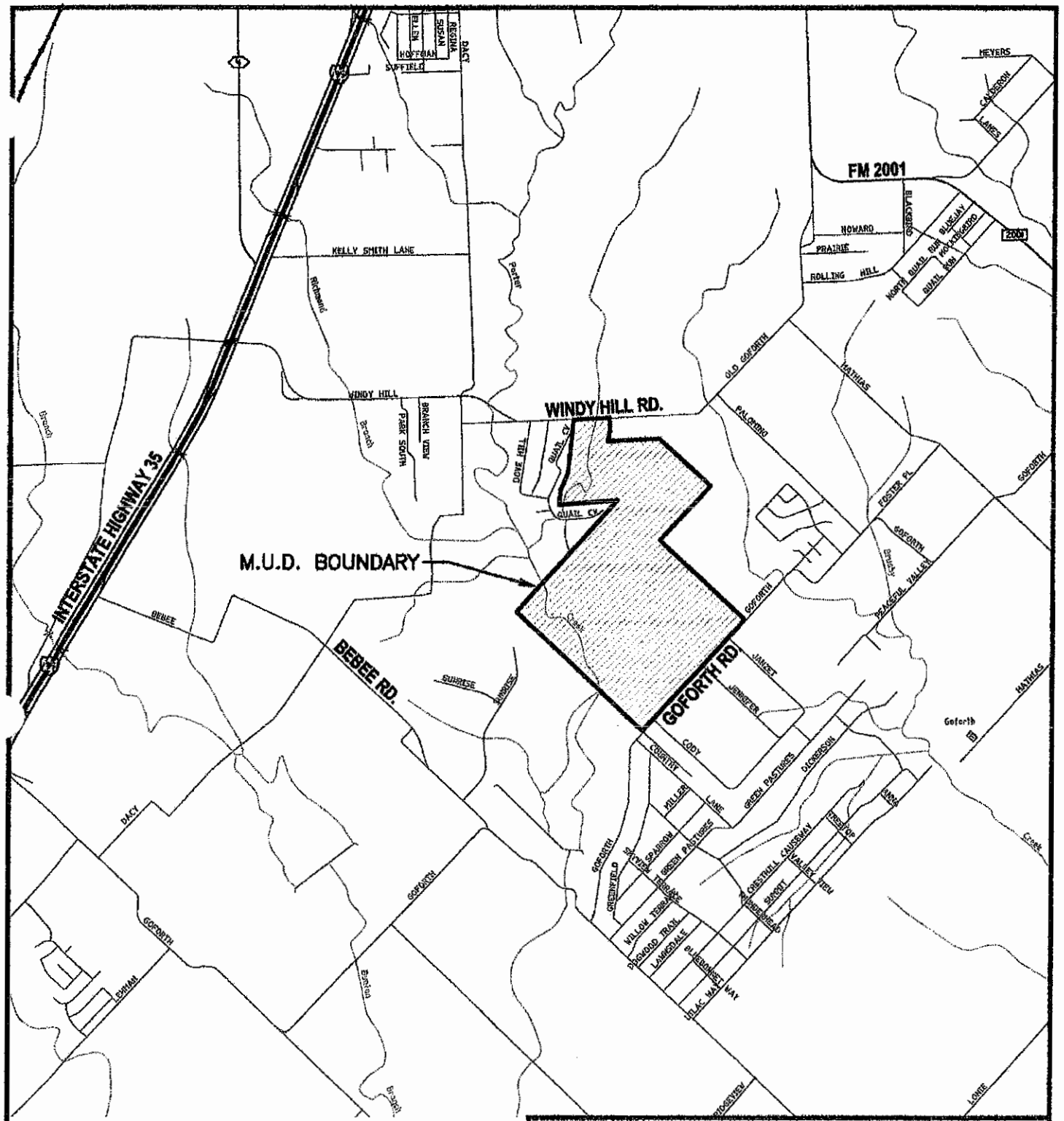
THENCE, S84°26'55"W, a distance of 19.78 feet to an iron pin found, said iron pin being located at the most northerly corner of said Lot 12 of Dove Hills Estates Section Two,

THENCE, with a north line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) S87°52'28"W, a distance of 456.24 feet to an iron pin found,
(2) S87°51'08"W, a distance of 526.71 feet to an iron pin found,
(3) S87°47'58"W, a distance of 300.16 feet to an iron pin found,
(4) S89°38'13"W, a distance of 46.72 feet to a 60d nail found in post, said nail being located at the common corner of Lot 1 of Dove Hills Estates Section Two and Lot 15 of Dove Hills Estates Section One, said nail also being located at an east corner of the herein described tract,

THENCE, with the east line of said Dove Hills Estates Section One the following nine (9) courses and distances:

(1) N08°33'38"E, a distance of 336.88 feet to an iron pin,
(2) N25°12'16"E, a distance of 56.49 feet to an iron pin found,
(3) N25°12'16"E, a distance of 362.11 feet to an iron pin found,
(4) N09°01'18"E, a distance of 41.65 feet to an iron pin found,
(5) N08°24'13"E, a distance of 276.06 feet to an iron pin found,
(6) N08°11'26"E, a distance of 179.37 feet to an iron pin found,
(7) N08°18'28"E, a distance of 158.36 feet to an iron pin found,
(8) N08°19'18"E, a distance of 315.02 feet to an iron pin found,
(9) N08°40'18"E, a distance of 230.02 feet to the **POINT OF BEGINNING,** containing the 445.11 acres tract of land.



MEC

Murfee Engineering Company

CROSSWINDS MUD

GENERAL LOCATION MAP

1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746 (512) 327-9204

Texas Registered Engineering Firm F-353

FILE(LAYOUT): O:\11\0117\30\110212-TXDOT-LOCATION.dwg(Layout1) | DATE: 11/2/2012 | DRAWN: RWH

Exhibit "B"

Hays Central Appraisal District Chief Appraiser Certificate Evidencing Ownership of Property

CERTIFICATE OF OWNERSHIP

THE STATE OF TEXAS §
§
COUNTY OF HAYS §

I, David Valle, Chief Appraiser of Hays County Central Appraisal District, Texas, hereby certify that **Exhibit A** lists the owners of the property within the area proposed to be Crosswinds Municipal Utility District, a legal description of which is attached as **Exhibit B**, which is within Hays County, Texas.

WITNESS MY SIGNATURE the 17 day of September, 2012.

David Valle
David Valle
Chief Appraiser
Hays County Appraisal District

STATE OF TEXAS §
§
COUNTY OF HAYS §

This instrument was acknowledged before me, on the 17 day of September, 2012, by David Valle, Chief Appraiser of the Hays County Appraisal District on behalf of said appraisal district.

GLORIA LUNA
Notary Public, State of Texas
My Commission Expires
FEBRUARY 20, 2013

Gloria Luna
Notary Public, State of Texas
Printed Name: Gloria Luna
My Commission Expires: Feb. 20, 2013

[SEAL]

EXHIBIT A
LANDOWNERS

EB WINDY HILL LP

EXHIBIT B

FIELD NOTES

BEING ALL THAT CERTAIN TRACT OR PARCEL OF LAND OUT OF AND A PART OF THE JESSE B. EAVES SURVEY, ABSTRACT 166, AND THE SAMUEL LITTLE SURVEY, ABSTRACT 286, SITUATED IN HAYS COUNTY, TEXAS, SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS BEING A PORTION OF THAT CERTAIN 446.80 ACRES OF LAND CONVEYED TO H.H. PHILLIPS IN VOLUME 201, PAGE 19 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS, SAID TRACT BEING 445.11 ACRES OF LAND MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING, at an iron pin found on the South right-of-way line of County Road 131, said iron pin also being located at the most northeasterly corner of Lot 27, Block D, of Dove Hills Estates Section One, a subdivision recorded in Volume 2, Page 325 of the Deed Records of Hays County, Texas, said iron pin also being located at the most northwesterly corner of the herein described tract, and also **POINT OF BEGINNING** of the herein described tract,

THENCE, with the new South right-of-way line of said County Road 131 S89°08'29"E, a distance of 2,340.02 feet to an iron pin found, said iron pin being located at a point of curvature to the left,

THENCE, continuing with curve along the new South right-of-way line of said County Road 131 that has a central angle of 12°27'00", a radius of 1628.52 feet, a length of 353.87 feet, a chord of 353.17 feet, and a bearing of N84°38'01"E, to an iron pin found,

THENCE, leaving the new right-of-way line of said County Road 131 and continuing with the old right-of-way line of said County Road 131, S89°59'48"E, a distance of 124.98 feet to a concrete nail, said nail being located along the common line of said Samuel Little Survey and said Jesse B. Eaves Survey, said nail also being located at the most northeasterly corner of the herein described tract,

THENCE, leaving the old right-of-way line of said County Road 131 and continuing with the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S45°23'27"W, a distance of 981.04 feet to an iron pin, said iron pin being a westerly corner of the herein described tract,

THENCE, leaving the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S44°46'41"E, a distance of 134.69 feet to an iron pin found, said iron pin being located at the West corner of a 7.771 acre tract of land conveyed to Alice Rios in Document 9925762 of the Deed Records of Hays County, Texas,

THENCE, continuing along an eastern line of the herein described tract S45°05'21"E, a distance of 1,003.31 feet to an iron pin found, said iron pin being located at the South corner of a 9.998

acre tract of land conveyed to Ronald D. Holifield and Melodie A. Holifield in Volume 1324, Page 651 of the Deed Records of Hays County, Texas,

THENCE, continuing along an east line of the herein described tract S44°42'12"E, a distance of 181.24 feet to a concrete nail, said nail being located at the North corner of a 100.15 acre tract of land conveyed to Ray E. Jones and Annie B. Jones in Volume 1135, Page 868 of the Deed Records of Hays County, Texas, said nail also being located at an East corner of the herein described tract,

THENCE, with the North line of said Jones Tract, S45°25'00"W, a distance of 1,662.52 feet to an iron pin, said iron pin being located at the West corner of said Jones Tract, said iron pin also being located at an East corner of the herein described tract,

THENCE, with the East line of said Jones Tract S44°45'16"E, a distance of 2,630.83 feet to a concrete nail, said nail being located at the South corner of said Jones Tract, said nail also being located at the most easterly corner of the herein described tract, said nail also being located on the North right-of-way line of County Road 157,

THENCE, with the North right-of-way line of said County Road 157 S45°00'00"W a distance of 3,404.46 feet to a concrete nail found, said nail being located at the most easterly corner of Lot 94 of Sunrise Acres, a subdivision recorded in Volume 2, Page 346 of the Deed Records of Hays County, Texas, said nail also being located at the most southern corner of the herein described tract,

THENCE, leaving the North right-of-way line of said County Road 157 and continuing with the most westerly line of said Sunrise Acres the following three (3) courses and distances:

(1) N44°43'39"W, a distance of 2,207.70 feet to an iron pin found,
(2) N44°53'47"W, a distance of 969.22 feet to an iron pin found,
(3) N44°48'29"W, a distance of 758.82 feet to an iron pin found, said iron pin being located at the most northerly corner of said Sunrise Acres, said iron pin also being located at the most westerly corner of the herein described tract,

THENCE, with a west line of the herein described tract N44°38'24"E, a distance of 1,058.81 feet to an iron pin, said iron pin being located at an angle point of Lot 25, of Dove Hills Estates Section Two, a subdivision recorded in Volume 3, Page 179 of the Deed Records of Hays County, Texas,

THENCE, with an eastern line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) N44°52'26"E, a distance of 1,105.77 feet to a 60d nail found,
(2) N44°51'31"E, a distance of 661.25 feet to an iron pin found,
(3) N44°50'37"E, a distance of 399.21 feet to an iron pin found,

(4) N44°44'50"E, a distance of 175.19 feet to an iron pin, said iron pin being located at the most westerly corner of Lot 12 of said Dove Hills Estates Section Two,

THENCE, leaving the eastern line of said Dove Hills Estates Section Two N44°44'50"E, a distance of 14.18 feet to an iron pin found, said iron pin being located at an angle point for the herein described tract,

THENCE, S84°26'55"W, a distance of 19.78 feet to an iron pin found, said iron pin being located at the most northerly corner of said Lot 12 of Dove Hills Estates Section Two,

THENCE, with a north line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) S87°52'28"W, a distance of 456.24 feet to an iron pin found,
(2) S87°51'08"W, a distance of 526.71 feet to an iron pin found,
(3) S87°47'58"W, a distance of 300.16 feet to an iron pin found,
(4) S89°38'13"W, a distance of 46.72 feet to a 60d nail found in post, said nail being located at the common corner of Lot 1 of Dove Hills Estates Section Two and Lot 15 of Dove Hills Estates Section One, said nail also being located at an east corner of the herein described tract,

THENCE, with the east line of said Dove Hills Estates Section One the following nine (9) courses and distances:

(1) N08°33'38"E, a distance of 336.88 feet to an iron pin,
(2) N25°12'16"E, a distance of 56.49 feet to an iron pin found,
(3) N25°12'16"E, a distance of 362.11 feet to an iron pin found,
(4) N09°01'18"E, a distance of 41.65 feet to an iron pin found,
(5) N08°24'13"E, a distance of 276.06 feet to an iron pin found,
(6) N08°11'26"E, a distance of 179.37 feet to an iron pin found,
(7) N08°18'28"E, a distance of 158.36 feet to an iron pin found,
(8) N08°19'18"E, a distance of 315.02 feet to an iron pin found,
(9) N08°40'18"E, a distance of 230.02 feet to the **POINT OF BEGINNING,** containing the 445.11 acres tract of land.

Attachment "5"

THE STATE OF TEXAS
COUNTY OF TRAVIS
I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF A TEXAS DOCUMENT ON FILE IN MY OFFICE.
FEB 19 2013
OFFICIAL OVERSEER OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

APPLICATION NO. 37510-C

PETITION FROM EB WINDY HILL, LP, FOR AN EXPEDITED RELEASE FROM MONARCH UTILITIES I, LP'S CERTIFICATE OF CONVENIENCE AND NECESSITY (CCN) NO. 12983 IN HAYS COUNTY, TEXAS	§ § § § § § §	**BEFORE THE** **TEXAS COMMISSION ON** **ENVIRONMENTAL QUALITY**

ORDER

On **February 13, 2013**, the Executive Director of the Texas Commission on Environmental Quality, pursuant to Chapters 5 and 13 of the Texas Water Code, considered the petition of EB Windy Hill, LP, (Petitioner) for expedited release from water CCN No. 12983, held by Monarch Utilities I, LP, in Hays County, Texas.

The criteria set forth in section 13.254(a-5) of the Texas Water Code has been considered. The Petitioner has satisfied all criteria to be released from the CCN pursuant to that section.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY that

1. The petition from EB Windy Hill, LP, for expedited release from water CCN No. 12983 of Monarch Utilities I, LP, as reflected in the attached copy of the official

water service area map for Hays County, Texas, is hereby approved.

2. The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this Order and the attached map to the petitioner and the CCN holder.
3. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

Issue Date: **February 13, 2013**

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

For the Commission

Texas Commission on Environmental Quality

By These Presents Be It Known To All That

Monarch Utilities I, LP

having duly applied for certification to provide water utility service for the convenience and necessity of the public, and it having been determined by this Commission that the public convenience and necessity would in fact be advanced by the provision of such service by this Applicant, is entitled to and is hereby granted this

Certificate of Convenience and Necessity No. 12983

to provide continuous and adequate water utility service to that service area or those service areas in Bandera, Brazoria, Chambers, Denton, Grayson, Hays, Henderson, Hood, Johnson, Liberty, Marion, Matagorda, Medina, Montgomery, Parker, Polk, San Jacinto, Smith, Tarrant, trinity, Tyler, Van Zandt, Wise and Wood Counties as by final Order or Orders duly entered by this Commission, which Order or Orders resulting from Application No. 37510-C are on file at the Commission offices in Austin, Texas; and are matters of official record available for public inspection; and be it known further that these presents do evidence the authority and the duty of Monarch Utilities I, LP, to provide such utility service in accordance with the laws of this State and Rules of this Commission, subject only to any power and responsibility of this Commission to revoke or amend this Certificate in whole or in part upon a subsequent showing that the public convenience and necessity would be better served thereby.

Issued at Austin, Texas, this **February 13, 2013**

For the Commission

Attachment "6"

CITY OF KYLE

100 W. Center • P.O. Box 40 • Kyle, Texas 78640 • (512) 262-1010 • FAX (512) 262-3800

May 8, 2013

Mr. Zak Kovar
Executive Director
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F
Austin, TX 78753

Re: Determination of Compensation, if any, to Monarch Utilities I, LP Prior to Commencement of Retail Potable Water Utility Service by City of Kyle to EB Windy Hill, LP Property

Dear Mr. Kovar:

EB Windy Hill, LP ("Landowner") has requested that the City of Kyle undertake necessary steps to be able to provide retail potable water utility service to the property owned by EB Windy Hill, LP and described in the attached metes and bounds description (the "Property"). The Property was formerly in the retail water utility service area of Monarch Utilities I, LP ("Monarch") pursuant to CCN No. 12983 (the "CCN"). At the request of EB Windy Hill, LP, the Texas Commission on Environmental Quality ("TCEQ") adopted an order (copy also attached) removing the property from Monarch's CCN.

Kyle hereby notifies the TCEQ, the Landowner and Monarch, by copy of this letter, that Kyle is prepared to initiate retail potable water utility service to the Property.

Thank you for your attention to this matter. If you have any questions, please contact the undersigned.

Very truly yours,

Lanny S. Lambert

Lanny S. Lambert
City Manager
City of Kyle, Texas

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CITY OF KYLE

100 W. Center • P.O. Box 40 • Kyle, Texas 78640 • (512) 262-1010 • FAX (512) 262-3800

cc: Mr. Doug Fike, EB Windy Hill, LP
3711 Meredith Street
Austin, TX 78703

Mr. Ronald J. Freeman, Attorney for EB Windy Hill, LP
8500 Bluffstone Cove, Ste. B-104
Austin, TX 78759

Mr. Charles Profilet, Monarch Utilities I, LP
12535 Reed Road
Sugar Land, TX 77478-2837

Mr. Lambeth Townsend, Attorney for Monarch Utilities I, LP
Lloyd Gosselink Rochelle & Townsend, P.C.
816 Congress Avenue, Suite 1900
Austin, TX 78701

Attachment "7"

CITY OF KYLE

100 W. Center ● P.O. Box 40 ● Kyle, Texas 78640 ● (512) 262-1010 ● FAX (512) 262-3800

July 8, 2013

Mr. Doug Fike
EB Windy Hill, LP
3711 Meredith Street
Austin, TX 78703

RE: Determination of Compensation, if any, to Monarch Utilities I, LP Prior to Commencement of Retail Potable Water Utility Service by City of Kyle to EB Windy Hill, LP Property

Dear Mr. Fike:

EB Windy Hill, LP ("Landowner") has previously requested that the City of Kyle undertake necessary steps to be able to provide retail potable water utility service to the approximately 445.11 acres of land owned by EB Windy Hill, LP (the "Property"). The Property was formerly in the retail water utility service area of Monarch Utilities I, LP ("Monarch") pursuant to CCN No. 12983 (the "CCN"). At the request of the Landowner, the Texas Commission on Environmental Quality ("TCEQ") adopted an order removing the property from Monarch's CCN.

Subsequently, the City of Kyle notified the TCEQ, the Landowner and Monarch that Kyle is prepared to initiate retail potable water utility service to the Property. As a result, an appraisal report is due to the TCEQ regarding the amount of compensation, if any, that the Landowner must pay to Monarch before retail water service can begin. Because the Landowner will pay the compensation, you are hereby authorized to file the required appraisal report.

Thank you for your attention to this matter. If you have any questions, please contact the undersigned.

Very truly yours,

Steven D. Widacki

Steven D. Widacki, P.E.
City Engineer
City of Kyle

Cc: James Earp, Assistant City Manager

Attachment "8"

FREEMAN & CORBETT

PHONE (512) 451-6689 | 8500 Bluffstone Cove, Suite B-104 | FAX (512) 453-0865

Austin, Texas 78759

July 8, 2013

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WATER SUPPLY DIV.
2013 JUL 8 PM 3 [illegible]

Mr. Zak Covar
Executive Director (MC 109)
P.O. Box 13087
Austin, TX 78711-3087

Re: Compensation Appraisal Report related to Petition for Special Expedited Release Pursuant to Texas Water Code Section 13.254 (a-5) and (a-6)—EB Windy Hill LP (Landowner) and Monarch Utilities I L.P. (Decertified Utility)

Dear Mr. Covar:

Enclosed please find the original and three copies of the **Compensation Appraisal Report** of Windy Hill LP ("Landowner") related to the TCEQ's Order dated February 13, 2013, granting Landowner's Petition for Expedited Release from Water Certificate of Public Convenience and Necessity No. 12983 of Monarch Utilities I L.P. ("Monarch" or "Utility"), pursuant to Texas Water Code §13.254 (a-5) and (a-6) for the property owned by EB Windy Hill, LP and described in the attached metes and bounds description (the "Property"). Landowner has previously requested that the City of Kyle undertake necessary steps to be able to provide retail potable water utility service to the Property in accordance with Texas law discussed below. Accordingly, by letter dated May 8, 2013, the City of Kyle requested that the TCEQ initiate the statutory process to determine the amount of compensation, if any due to the Utility under Texas law.

The Compensation Appraisal Report examines the criteria set out in Section 13.254, Water Code (the "Statute"), to determine the amount of compensation, if any, to be paid by Windy Hill LP to the Utility. Even though Texas law specifically provides that the Utility's CCN rights are not property rights, the Statute provides that after the decertification no new utility service provider, like the City of Kyle, may provide retail water utility service to an area that has been decertified unless compensation is paid to Monarch for any property that the TCEQ determines is rendered useless or valueless. Of course, this limitation set forth in the Statute constitutes an impediment to Landowner's ability to get retail potable water utility service to its Property thereby potentially impairing the value of the Property.

In preparing its Compensation Appraisal Report, Landowner relied on the specific documents identified in the report together with the knowledge of its consulting appraisers who have first-hand knowledge of the design and capabilities of the Utility's system. The Statute does not allow a landowner, such as Windy Hill LP, the opportunity to obtain any documents or information directly from the Utility. Therefore, by filing its Compensation Appraisal Report, Windy Hill LP does not waive, and hereby specifically retains, it rights under the due process clauses of the state and federal constitutions, as well as under the Texas Administrative Procedures Act, to challenge the

Ronald J. Freeman
rfreeman@freemanandcorbett.com

Anthony S. Corbett
tcorbett@freemanandcorbett.com

constitutionality and legality of the Statute in so far as the process set forth therein fails to provide for a hearing, whether evidentiary or otherwise, for determining the level of compensation to be paid the Utility.

I am providing a copy of this letter and all enclosures to Monarch Utilities I, L.P. and its attorneys, the TCEQ staff and the City of Kyle, by certified mail, return receipt requested as shown in the certificate of service below.

Thank you,

Ronald J. Freeman

Ronald J. Freeman

Enclosures

cc: Ms. Tammy Benter, Manager
TCEQ Utilities & Districts Section
Utilities Financial Review (MC 153)
P.O. Box 13087
Austin, TX 78711-3087

Monarch Utilities I LP
12535 Reed Road
Sugar Land, Texas 77478-2837

Mr. Lambeth Townsend
Lloyd Gosselink Rochelle & Townsend, PC
816 Congress Ave.
Suite 1900
Austin, Texas 78701

City of Kyle, Texas
Attn: Lanny Lambert, City Manager
100 W. Center
P.O. Box 40
Kyle, Texas 78753

Ronald J. Freeman
rfreeman@freemanandcorbett.com

Anthony S. Corbett
tcorbett@freemanandcorbett.com

Certificate of Service

I certify that a copy of the foregoing letter together with all attachments described therein were mailed by United States mail, postage prepaid on July 8, 2013, to Monarch Utilities I LP at its address of record according to TCEQ records, being 12535 Reed Road, Sugar Land, Texas 77478-2837 and to its attorneys, Lloyd Gosselink Rochelle & Townsend PC at their address shown above in this letter, and to the other persons listed as cc's in the letter attached hereto.

Ronald J. Freeman

Ronald J. Freeman

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WATER SUPPLY DIV.
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Ronald J. Freeman
rfreeman@freemanandcorbett.com

Anthony S. Corbett
tcorbett@freemanandcorbett.com

Compensation Appraisal Report
Regarding Decertification of
445.11 Acres of Land Owned by EB Windy Hill, LP From Water CCN No. 12983 of Monarch Utilities I, L.P.

Purpose

This Compensation Appraisal Report is submitted on behalf of EB Windy Hill, LP ("EB Windy Hill"). EB Windy Hill filed a petition with the Texas Commission on Environmental Quality (TCEQ) on January 7, 2013, requesting that the TCEQ decertify 445.11 acres of land ("Property") owned by EB Windy Hill in Hays County, Texas, from the certificated water service are of Monarch Utilities I, L.P. ("Monarch") under CCN# 12983 (the "CCN"). **Tab 1** is a copy of that petition. The TCEQ Executive Director determined that petition to be administratively complete by letter dated January 23, 2013. See a copy of that determination in **Tab 2** attached. No protest of the petition was filed by Monarch. Accordingly, by Order dated February 13, 2013 TCEQ granted the petition for decertification of the Property on February 13, 2013. **Tab 3** attached contains a copy of that Order.

This appraisal report addresses the amount of compensation, if any, that the TCEQ may require to be paid to Monarch under Section 13.254, Texas Water Code, and 30 TAC Chapter §291.113, as a result of the decertification of the Property.

Documents Reviewed

Documents reviewed for the preparation of this Comprehensive Appraisal Report include, but are not limited to:

Tab 4: Monarch Utilities I, L.P. Plum Creek Water Master Plan, August 2011

Tab 5: TCEQ Letter to Mr. Paul D. Beaver, P.E.
RE: Request for Minimum Alteration Capacity Requirements.
Plum Creek – PWS ID # 1050028,
Hays County, Texas,
August 3 2009

Tab 6: David Malish, P.E.
Letter to TCEQ
RE: Monarch Utilities Proposed 211,000 gallon Ground Storage tank,
Request for Expedited Plan Review
PWS ID # 1050028
CCN # 12983
April 20, 2006

Tab 7: Texas Commission on Environmental Quality
Water System Data Sheet
Plum Creek
PWS ID # 1050028
June 17, 2013

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7-9-13

STATE OF TEXAS
DAVID A. MALISH
47757
REGISTERED
PROFESSIONAL ENGINEER

Tab 8: Monarch Utilities I, L.P.
Rate Application Highlights

Tab 9: Letter to TCEQ from Paul D. Beaver, P.E.
Request for Alternative Minimum Capacity Exception
Hays County, Texas
May 27, 2009
Plum Creek
PWS ID # 1050028

Tab 10: Monarch Utilities I, L.P.
Rate Application Overview
Appendix I

Tab 11: Monarch-GBRA Water Supply Agreements

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Background

Monarch's CCN service area covers several different, and widely separated areas across the State of Texas. The portion of the CCN service area at issue in this appraisal report is Monarch's "Plum Creek" service area since, prior to the decertification Order, the Property was located within the Plum Creek portion of Monarch's CCN service area. That portion of the Monarch service area is situated immediately south of the City of Buda wholly within Hays County and straddles IH 35. A general location map of the Plum Creek service area with respect to the decertified Property, the City of Buda, the City of Austin, and IH 35 is provided in **Tab 12**. Under **Tab 13**, we have provided a more detailed specific boundary map that delineates the Property decertified by the TCEQ Order in February 2013.

Murfee Engineering is personally familiar with the Monarch water system facilities in the Plum Creek service area having served as the design engineer on many of those facilities. As demonstrated later in this appraisal report, Monarch does not have sufficient water supplies for its Plum Creek service area to meet the state minimum requirements of 0.6 gpm/connection for customers projected to be within its Plum Creek service area even without the decertified Property. As a result, Monarch recently (May 2009) applied to the TCEQ for and received a variance (exception request 290.45(B)(1)(i)) reducing, until further review by the TCEQ, Monarch's minimum water supply criteria to 0.44 gpm/connection. This reduced ability of Monarch to supply water service to the Property and other areas of the Plum Creek service area was the primary reason why EB Windy Hill sought the decertification of the Property since the Property is now within the Crosswinds Municipal Utility District (the "District") recently created by the Texas Legislature. A copy of the statute creating the District over the Property is provided in **Tab 14**. Of course, the District must at least meet State minimum water system criteria and would be unable to do so if the water were supplied by Monarch's Plum Creek system. As a result, during creation of the District, EB Windy Hill entered into a consent agreement with the City of Kyle ("Kyle") to partner with Kyle to supply water to the Property. A copy of the consent agreement, as amended, is attached in **Tab 15**.

Compensation Factors

Section 13.254, Texas Water Code and TCEQ rule 30 TAC Sec. 291.113 establish the criteria to be used to determine any compensation due to Monarch as a result of the decertification of the Property. The remainder of this report will address each of those factors.

Factor 1 The amount of the retail public utility's debt allocable for service to the area in question.

We are unaware of any debt owed by Monarch. TCEQ Rule 30 TAC 292.113 (q) requires that Monarch file with TCEQ within ten days after EB Windy Hill's petition for decertification was filed information related to the amount of any debt secured by one or more liens so that the TCEQ may gather information concerning how much of that debt would be allocable to the Property which has been decertified. Monarch filed no such information. And, it seems inconceivable that Monarch would have any other debt not secured by liens. **Accordingly, the compensation due Monarch based on this factor is $0 because the existence of any debt has not been demonstrated by Monarch.**

Factor 2 The value of the service facilities of the retail public utility located within the area in question.

Monarch owns and maintains a 6-inch transmission main which passes through the Property generally parallel to the northern and eastern property lines. This main provides service exclusively to the Green Pastures Subdivision which consists of approximately 735 mostly mobile home lots located outside of the Property. This 6-inch main provides no service to the Property and is in fact oversubscribed in accordance with 30 TAC §290.44(c) which limits the service capacity of a 6-inch main to 250 lots. This main provides no service to the Property, is currently oversubscribed as discussed above, and has no value in providing service to the Property. Monarch will continue to own and utilize this main to serve its remaining service area. **Therefore, the compensation due Monarch based on this factor is $0.**

Factor 3 The amount of any expenditures for planning, design, or construction of service facilities that are allocable to service to the area in question.

a. Expenditures for construction of service facilities.

There are two ways to possibly analyze this Factor 3: (i) by looking only at the facilities serving Monarch's Plum Creek service area and seeing what portion of those costs should be attributed to the Property or (ii) by looking at all Monarch water systems and seeing what portion of all Monarch's water system costs should be attributed to the Property. This report looks at both analyses.

(i) Allocation of construction expenditures based on Monarch's expenditures for only the Plum Creek system:

On behalf of EB Windy Hill and in support of this compensation appraisal, Murfee Engineering Company prepared a somewhat exhaustive Facilities Analysis as a result of the decertification of the Property from Monarch's Plum Creek water service area. This report is attached as **Tab 16** to this Compensation Appraisal Report.

The technical approach used for this facilities analysis in **Tab 16** was to inventory the location and size of existing major facilities components of Monarch's water system that serve the Plum Creek service area and to analyze their relationship to Monarch's ability to meet its obligation to serve the existing and future anticipated land uses and associated water demands of the Plum Creek service area. Because Monarch's facilities do not meet TCEQ minimum criteria for public water systems, Monarch has been granted a conditional variance from those standards. Eventually, however, based on information provided within Monarch's Plum Creek Water Master Plan (**Tab 4**) Monarch will most likely be required to comply with TCEQ's minimum criteria. Accordingly, Murfee Engineering performed two analyses:

one assuming Monarch would be required to meet TCEQ minimum standards and a second assuming Monarch would continue to rely on its variance from those minimum standards.

In the first analysis in **Tab 16**, current TCEQ design criteria was used to assess the capacity of each of Monarch's major water supply components for the Plum Creek service area. This information was then compared with the anticipated ultimate demands to assess any excess capacity for each of the components of Monarch's system. The ultimate demands used for the projections in the analysis (**Tab 16**) excluded any demands for the EB Windy Hill Property as it has now been decertified.

In the second analysis in **Tab 16** approved TCEQ variance criteria was used for an identical assessment as discussed above. Basically, Monarch was allowed to decrease its required water delivery from the State minimum 0.6 gpm/connection to 0.44 gpm/connection. In addition Monarch was allowed to reduce design capacity requirements for total storage, elevated storage, and pumping. Total storage was reduced from 200 gallons per connection to 146 gallons per connection and elevated storage was reduced from 100 gallons per connection to 73 gallons per connection. Firm pumping capacity was reduced from 2 gpm/connection to 1.46 gpm/connection. This second analysis is identical to the first analysis except for using the variance criteria.

The Plum Creek water system includes two pressure zones, referred to as the North zone and the South zone, which are physical, but not hydraulically, connected. The Property is located in the South zone. A physical connection does exist with a 6-inch transmission emanating from the North pressure zone pump station to a connection with the South Pressure zone. However, this main is fitted with a pressure reducing valve hydraulically separating the two pressure zones. Therefore, both analyses as described above include separate assessments of the North zone and the South zone facilities.

It should also be recognized that Monarch does not currently have sufficient water supplies to service Plum Creek at full build out and it is projected that water supplies will be exhausted by 2015 as per Monarch's Plum Creek Water Master Plan (**Tab 4**). Based on the current TCEQ Water System Data Sheet Monarch currently operates two wells in the North zone, referred to as Wells 1 and 2, and two wells in the South zone, referred to as Wells 3 and 4. Again according to the TCEQ Water System Data Sheet, Wells 1 and 2 have a collective capacity of 700 gpm. Wells 3 and 4 have capacities of 460 and 425 gpm respectively but are unable to operate simultaneously owing to drawdown interferences. Therefore, Wells 3 and 4 have a maximum capacity of 460 gpm. It also should be noted that Monarch currently purchases treated water from the Guadalupe Blanco River Authority (see contract under **Tab 11**) for delivery into the North pressure zone at a maximum rate of 347 gpm. Therefore, the total pumping capacity at this time is 1507 gpm. Monarch's Plum Creek Water Master Plan (**Tab 4**) indicates that Monarch will serve 4131 LUEs by the year 2020 and 6580 by the year 2030. With current capacity of 1507 gpm Monarch can only deliver up to 0.3 gpm/connection through the year 2030 and less than 0.4 gpm/connection through the year 2020.

Based on the results of the first analysis as shown in Table 2 on page 6 of the referenced Facilities Analysis Report in **Tab 16,** none of the South zone water supply components currently have excess capacity and all will require expansion for ultimate development. The results of the analysis for the North zone components indicates some excess capacity in both the elevated and ground storage tanks as well as possibly in a 16-inch water transmission main. However, neither the elevated nor the ground storage tank provides any service to the South Zone developments in which EB Windy Hill is located. In addition, as demonstrated in **Tab 16**, service to the entire Plum Creek service area requires the installation of the 16-inch main and downsizing to a 12-inch main is not feasible. Therefore, the 16-inch main is not considered as oversized. Upon further analysis it is also shown that if EB Windy Hill Property demands were to remain in the service area this 16-inch water transmission main would have

to be increased to the equivalent of a 20-inch main. With the elimination of EB Windy Hill Monarch will not have to increase the size of this transmission main.

The results of the second analysis as shown on Table 3, page 7 of **Tab 16**, indicate that the South zone ground storage tanks will have an excess capacity of 1182 connections due to the conditional variance allowed Monarch of 73 gallons of ground storage per connection. If Monarch is allowed to benefit from the conditional TCEQ variance approval for reduced service obligations it is estimated that the value of this excess capacity would be $52,000 based on a unit cost of $0.60 per gallon. It should be understood however that this criteria variance will expire once unit demands exceed current unit demands as used for the basis for the variance. Therefore, Murfee Engineering believes it is inappropriate to use the variance analysis in determining compensation under Section 13.254, of the water Code.

In summary, Murfee Engineering believes that a maximum amount of $52,000 could possibly be allowed for the cost of the excess capacity of the South zone ground storage tank if the conditional variance criteria is used rather than minimum TCEQ standards. Because this facility was designed and constructed in 2006, long before the design variance was requested and granted by TCEQ in 2009, Murfee Engineering believes that TCEQ minimum criteria should be used rather than the conditional variance criteria. Therefore, no compensation should be allowed because no excess allocable capacity exists when using TCEQ minimum design criteria. In fact, the entire capacity of this facility will subsequently be needed for ultimate service needs in Monarch's Plum Creek service area even without the Property once the variance is rescinded in the future.

(ii) Allocation of construction expenditures based on Monarch's expenditures for all Monarch water systems:

An alternative approach to allocating costs of construction of Monarch water system facilities attributable to the decertified Property could be to use Monarch's "system-wide" costs (i.e., Monarch's expenditures for all of its water systems). In this approach, one could take the total costs of Monarch's investment for construction of water system facilities to serve new growth and then allocate those costs to the decertified Property based on some appropriate ratio of the property's relationship to all of the Monarch service areas in all of its systems. Murfee Engineering does not believe such an approach is appropriate because many, if not most, of such investment by Monarch would not be useful in providing water service to Monarch's Plum Creek water service area, much less to the Property itself. Also, Murfee Engineering does not have sufficient data at this time to make such an analysis.

Nonetheless, if such an approach is used, then based on the existing data available to Murfee Engineering (described below from data in Monarch's own records as of 2011), such a calculation would be done as follows:

Total expenditures for water and sewer system facilities by Monarch since 2006 thru 2011:	$70,000,000[1]
Less: Expenditures for "Compliance" which are attributable to existing customers:	$62,000,000[2]
Net Investment for facilities to serve future growth like the Property:	$8,000,000
Portion of $8,000,000 attributable to water service:	50%[3]
Net Water Investment for future growth	$4,000,000
Allocation of Net Water Investment to Plum Creek Service Area:	7.03%[4]
Amount Allocated to Plum Creek Service Area:	$281,176
Percent of Plum Creek Service Area represented by the Property:	9.38%[5]
Amount of Water Investment Allocated to the Property:	$26,274

b. Expenditures for Planning and Design. It is recognized Monarch has incurred additional costs for general engineering, water system analysis, connection fee analysis, and engineering fees specific to the EB Windy Hill Property that were performed on behalf of Monarch following its acquisition of the Plum Creek Water System. These costs are summarized in Table 4, page 12, of **Tab 16** and are based on

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[1] From Page 7 of Monarch's Rate Application Highlights **(Tab 8).**

[2] From Page 7 of Monarch's Rate Application Highlights **(Tab 8).** Facilities for "compliance" are related to existing customer demand and are, therefore, excluded from allocation to the Property which has no customers.

[3] Murfee Engineering has found no data to allocate the $8,000,000 expenditure between water and sewer other than to simply assume a 50/50 division. Therefore, water related projects are assumed to be 50% of total investment.

[4] Based on ratio of number of water customers in Plum Creek service area (2,390) from data on page 2-6, Table 2.4 of Monarch's Plum Creek Master Water Plan (see **Tab 16)** divided by total water customers in all Monarch systems (34,000) from page 4 of Monarch's Rate Application Highlights **(Tab 8)**, or 7.03%.

[5] Based on ratio of the property's acreage (445.11 acres) compared to total Plum Creek Service area before decertification (4,742 acres) from Table 2.3 on Page 2-6 of Monarch's Plum Creek Master Water Plan **(Tab 4):** 445.11 divided by 4,742 or 9.38%

actual invoices paid by Monarch. The total cost of these general engineering planning and design costs is estimated to be $8,223 as shown on Table 4, page 12 of **Tab 16**.

c. Summary of Factor 3. Based on the information presented herein and included in **Tab 16**, it is recommended that reimbursement to Monarch for planning, design and construction of facilities allocable to the property be $8,223. **Therefore, the compensation due Monarch based on this factor is $8,223.**

Factor 4 The amount of the retail public utility's contractual obligations allocable to the area in question.

The only contractual obligation of Monarch of which Murfee Engineering is aware that needs analysis under this criteria is Monarch's wholesale potable water supply contract with the Guadalupe-Blanco River Authority. A copy of that contract is attached under **Tab 11**. That contract allows Monarch to receive wholesale potable water supply from GBRA in an amount not to exceed 347 gpm. Monarch's Plum Creek Water Master Plan (see **Tab 4**) indicates that the GBRA supply provides a base flow to Monarch for its current customers. This base flow from the GBRA contract water is wholly used to supply current customers; therefore, none of its costs should be allocated to the Property. This base flow usage for current customers is also recognized by Monarch on page 4-11 of Monarch's Master Water Plan (**Tab 4**). In fact, Monarch's Plum Creek Water Master Plan indicates in Table 4.5, also on page 4-11 of **Tab 4**, that Monarch will be out of water supply by 2015, approximately 18 months from the date of this report. **Therefore, the compensation due Monarch based on this factor is $0.**

Factor 5 Any demonstrated impairment of service or increase of cost to consumers of the retail public utility remaining after the decertification.

As previously presented and as evidenced by Monarch's request for the conditional variance for reduced service level obligation and reduced facilities design criteria, Monarch's Plum Creek system admittedly does not have sufficient facilities capacity to meet TCEQ minimum water supply requirements. As shown in **Tab 16**, none of Monarch's water supply facility components will have excess capacity as a result of the decertification of the Property and, therefore, no additional costs are imposed om either existing or future customers or users with Monarch's Plum Creek service area. **Therefore, the compensation due Monarch based on this factor is $0.**

Factor 6 The impact on future revenues lost from existing customers.

There are no existing customers of Monarch on the Property and, therefore, no revenues from existing customers will be lost. **Therefore, the compensation due Monarch based on this factor is $0.**

Factor 7 Necessary and reasonable legal expenses and professional fees.

Monarch has certainly incurred legal and professional expenses in addressing the decertification of the Property earlier this year and in obtaining and filing its own appraisal report concerning any compensation due. Based on my professional experience and my activities in preparing this appraisal report for Windy Hill, it is my opinion that a reasonable amount of expense to be allowed to Monarch for preparation and filing of its compensation report is $8,000. In addition, I have discussed with the attorney for Windy Hill (Ronald Freeman) what he thinks would be a reasonable amount to be compensated to Monarch for legal expenses in its participation in the decertification process. Mr. Freeman charges slightly under $300 per hour and believes that approximately 20 hours of attorney time at that rate for filing a motion for rehearing with the TCEQ regarding the Executive Director's decision to decertify the property would be reasonable. In addition, Monarch appealed the decision to state district court raising one legal issue on appeal. No further action has been taken on the appeal. Mr. Freeman believes that 10 hours is a reasonable amount of time for preparation and filing of that appeal. Accordingly, we estimate

that a total of 30 hours at $300 per hour (or $9,000) would be reasonable for legal fees. **Therefore, the compensation due Monarch based on this factor is $17.000.**

Factor 8 Other relevant factors.

We are unaware of any other relevant factors that might increase the compensation to Monarch.

CONCLUSION

In the opinion of Murfee Engineering, compensation to Monarch as a result of the decertification of the Wind Hill Property is $25,223, composed of the following:

Factor 1:	$0.00
Factor 2:	$0.00
Factor 3:	$8,223
Factor 4:	$0.00
Factor 5:	$0.00
Factor 6:	$0.00
Factor 7:	$17,000
Factor 8:	$0.00
Total Compensation:	$25,223

1

PETITION FOR EXPEDITED RELEASE OF PROPERTY

THE STATE OF TEXAS §

COUNTY OF TRAVIS §

TO THE HONORABLE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

The undersigned ("Petitioner") acting pursuant to the provisions of Chapter 13 of the Texas Water Code, respectfully petitions the Texas Commission on Environmental Quality (the "Commission") for expedited release of the lands hereinafter described from the certificated service territory of Monarch Utilities I LP ("Monarch") and would show the following:

I.

Petitioner is the owner of the approximate 445.11 acre tract of real property further described by metes and bounds and by sketch in **Exhibit "A"** attached hereto and hereby incorporated by reference for all purposes (the "Property"). Petitioner intends to file a petition with the Commission to create a municipal utility district on the property and attached as **Exhibit "B"** hereto is a copy of the Hays Central Appraisal District Chief Appraiser evidencing Petitioner's fee ownership of the Property.

II.

Monarch is the holder of water Certificate of Convenience and Necessity No. 12983 (the "CCN"). The Property is located within the certificated water service territory of Monarch, as defined by the CCN.

III.

The Property is located within Hays County. According to the United States 2010 Census, Hays County has a population of 157,107. Hays County is adjacent to Travis County, which according to the United States 2010 Census, has a population of 1,024,266.

IV.

Petitioner affirms that the Property is not receiving water or sewer service from Monarch.

V.

Pursuant to Section 13.254(a-5) and (a-6) of the Texas Water Code, Petitioner is entitled to expedited release of the Property from the CCN because the

Property: (i) is a tract of land at least 25 acres; (ii) is located within the CCN; (iii) is not receiving water or sewer service from Monarch; and (iv) is located within a county adjacent to a county with a population of at least one million.

VI.

WHEREFORE, Petitioner prays that this Petition be deemed properly filed in accordance with Section 13.254(a-5) and (a-6) of the Texas Water Code; that this Petition be heard and granted in all respects; that the Commission enter an order releasing the Property from CCN No. 12983, and that such other orders, acts, procedures and relief be granted as are necessary and proper for the release of the Property from CCN No. 12983.

RESPECTFULLY SUBMITTED this _____ day of _____, 2012

EB WINDY HILL, L.P., a Texas limited partnership
By EBWH GP, Inc., its general

Rick Parke

By Rick Parke
Its Vice President

STATE OF TEXAS §
§
COUNTY OF TRAVIS §

This instrument was acknowledged before me on the 2nd day of November, 2012, by Rick Parke, as Vice President of EBWH GP, Inc., a Texas corporation, general partner of EB Windy Hill, L.P., a Texas limited partnership, on behalf of said limited partnership.

(Seal and Expiration)

LISA C BARLOW
Notary Public, State of Texas
My Commission Expires
April 26, 2015

Lisa C Barlow

Notary Public, State of Texas

EXHIBIT A

FIELD NOTES

BEING ALL THAT CERTAIN TRACT OR PARCEL OF LAND OUT OF AND A PART OF THE JESSE B. EAVES SURVEY, ABSTRACT 166, AND THE SAMUEL LITTLE SURVEY, ABSTRACT 286, SITUATED IN HAYS COUNTY, TEXAS, SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS BEING A PORTION OF THAT CERTAIN 446.80 ACRES OF LAND CONVEYED TO H.H. PHILLIPS IN VOLUME 201, PAGE 19 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS, SAID TRACT BEING 445.11 ACRES OF LAND MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING, at an iron pin found on the South right-of-way line of County Road 131, said iron pin also being located at the most northeasterly corner of Lot 27, Block D, of Dove Hills Estates Section One, a subdivision recorded in Volume 2, Page 325 of the Deed Records of Hays County, Texas, said iron pin also being located at the most northwesterly corner of the herein described tract, and also **POINT OF BEGINNING** of the herein described tract,

THENCE, with the new South right-of-way line of said County Road 131 S89°08'29"E, a distance of 2,340.02 feet to an iron pin found, said iron pin being located at a point of curvature to the left,

THENCE, continuing with curve along the new South right-of-way line of said County Road 131 that has a central angle of 12°27'00", a radius of 1628.52 feet, a length of 353.87 feet, a chord of 353.17 feet, and a bearing of N84°38'01"E, to an iron pin found,

THENCE, leaving the new right-of-way line of said County Road 131 and continuing with the old right-of-way line of said County Road 131, S89°59'48"E, a distance of 124.98 feet to a concrete nail, said nail being located along the common line of said Samuel Little Survey and said Jesse B. Eaves Survey, said nail also being located at the most northeasterly corner of the herein described tract,

THENCE, leaving the old right-of-way line of said County Road 131 and continuing with the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S45°23'27"W, a distance of 981.04 feet to an iron pin, said iron pin being a westerly corner of the herein described tract,

THENCE, leaving the common line of the Samuel Little Survey and the Jesse B. Eaves Survey S44°46'41"E, a distance of 134.69 feet to an iron pin found, said iron pin being located at the West corner of a 7.771 acre tract of land conveyed to Alice Rios in Document 9925762 of the Deed Records of Hays County, Texas,

THENCE, continuing along an eastern line of the herein described tract S45°05'21"E, a distance of 1,003.31 feet to an iron pin found, said iron pin being located at the South corner of a 9.998 acre tract of land conveyed to Ronald D. Holifield and Melodie A. Holifield in Volume 1324, Page 651 of the Deed Records of Hays County, Texas,

THENCE, continuing along an east line of the herein described tract S44°42'12"E, a distance of 181.24 feet to a concrete nail, said nail being located at the North corner of a 100.15 acre tract of land conveyed to Ray E. Jones and Annie B. Jones in Volume 1135, Page 868 of the Deed Records of Hays County, Texas, said nail also being located at an East corner of the herein described tract,

THENCE, with the North line of said Jones Tract, S45°25'00"W, a distance of 1,662.52 feet to an iron pin, said iron pin being located at the West corner of said Jones Tract, said iron pin also being located at an East corner of the herein described tract,

THENCE, with the East line of said Jones Tract S44°45'16"E, a distance of 2,630.83 feet to a concrete nail, said nail being located at the South corner of said Jones Tract, said nail also being located at the most easterly corner of the herein described tract, said nail also being located on the North right-of-way line of County Road 157,

THENCE, with the North right-of-way line of said County Road 157 S45°00'00"W a distance of 3,404.46 feet to a concrete nail found, said nail being located at the most easterly corner of Lot 94 of Sunrise Acres, a subdivision recorded in Volume 2, Page 346 of the Deed Records of Hays County, Texas, said nail also being located at the most southern corner of the herein described tract,

THENCE, leaving the North right-of-way line of said County Road 157 and continuing with the most westerly line of said Sunrise Acres the following three (3) courses and distances:

(1) N44°43'39"W, a distance of 2,207.70 feet to an iron pin found,
(2) N44°53'47"W, a distance of 969.22 feet to an iron pin found,
(3) N44°48'29"W, a distance of 758.82 feet to an iron pin found, said iron pin being located at the most northerly corner of said Sunrise Acres, said iron pin also being located at the most westerly corner of the herein described tract,

THENCE, with a west line of the herein described tract N44°38'24"E, a distance of 1,058.81 feet to an iron pin, said iron pin being located at an angle point of Lot 25, of Dove Hills Estates Section Two, a subdivision recorded in Volume 3, Page 179 of the Deed Records of Hays County, Texas,

THENCE, with an eastern line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) N44°52'26"E, a distance of 1,105.77 feet to a 60d nail found,
(2) N44°51'31"E, a distance of 661.25 feet to an iron pin found,
(3) N44°50'37"E, a distance of 399.21 feet to an iron pin found,
(4) N44°44'50"E, a distance of 175.19 feet to an iron pin, said iron pin being located at the most westerly corner of Lot 12 of said Dove Hills Estates Section Two,

THENCE, leaving the eastern line of said Dove Hills Estates Section Two N44°44'50"E, a distance of 14.18 feet to an iron pin found, said iron pin being located at an angle point for the herein described tract,

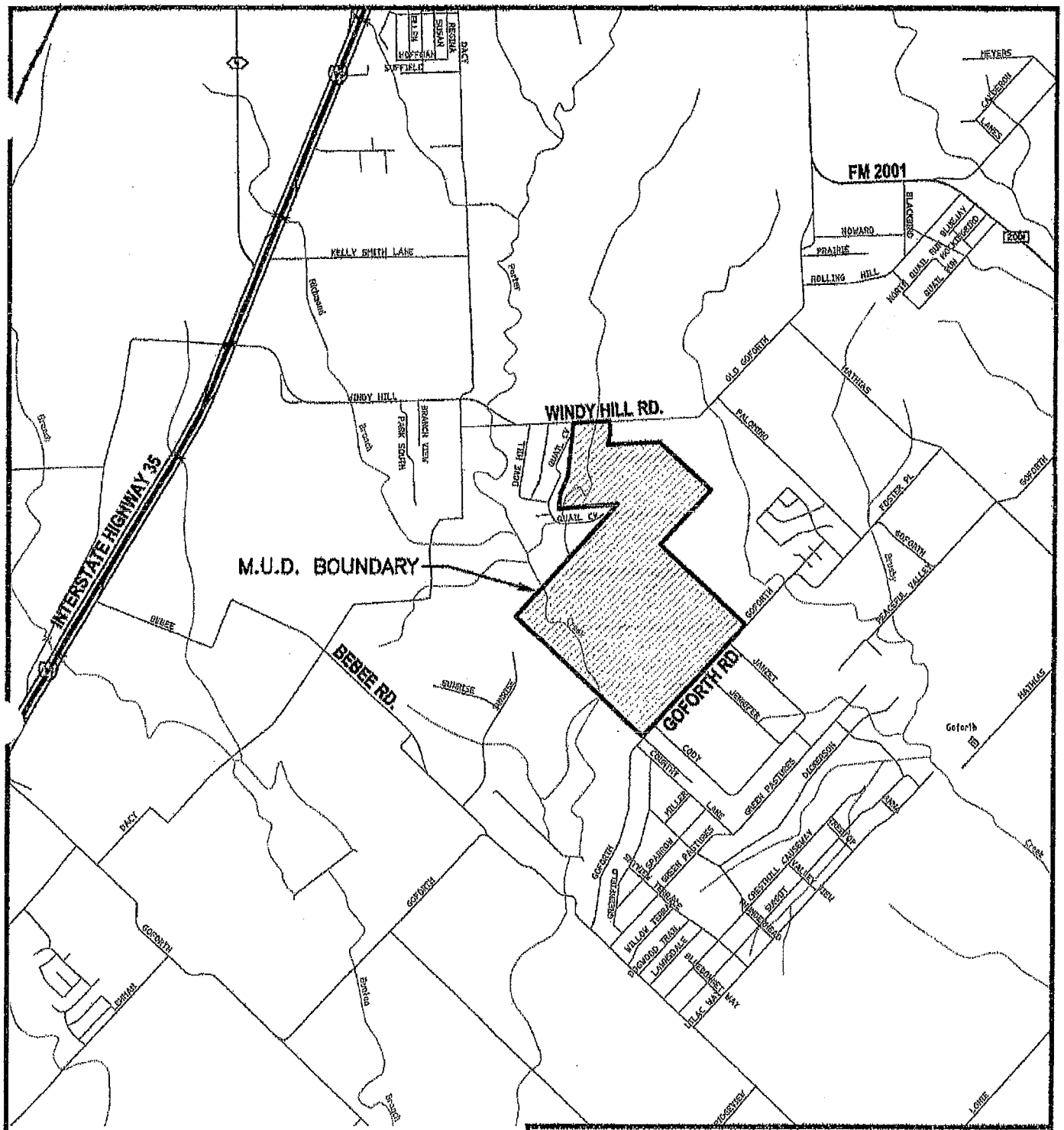
THENCE, S84°26'55"W, a distance of 19.78 feet to an iron pin found, said iron pin being located at the most northerly corner of said Lot 12 of Dove Hills Estates Section Two,

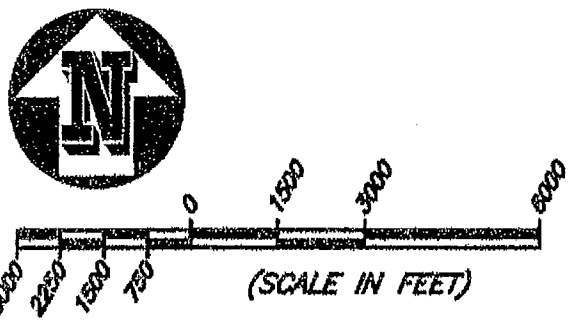
THENCE, with a north line of said Dove Hills Estates Section Two the following four (4) courses and distances:

(1) S87°52'28"W, a distance of 456.24 feet to an iron pin found,
(2) S87°51'08"W, a distance of 526.71 feet to an iron pin found,
(3) S87°47'58"W, a distance of 300.16 feet to an iron pin found,
(4) S89°38'13"W, a distance of 46.72 feet to a 60d nail found in post, said nail being located at the common corner of Lot 1 of Dove Hills Estates Section Two and Lot 15 of Dove Hills Estates Section One, said nail also being located at an east corner of the herein described tract,

THENCE, with the east line of said Dove Hills Estates Section One the following nine (9) courses and distances:

(1) N08°33'38"E, a distance of 336.88 feet to an iron pin,
(2) N25°12'16"E, a distance of 56.49 feet to an iron pin found,
(3) N25°12'16"E, a distance of 362.11 feet to an iron pin found,
(4) N09°01'18"E, a distance of 41.65 feet to an iron pin found,
(5) N08°24'13"E, a distance of 276.06 feet to an iron pin found,
(6) N08°11'26"E, a distance of 179.37 feet to an iron pin found,
(7) N08°18'28"E, a distance of 158.36 feet to an iron pin found,
(8) N08°19'18"E, a distance of 315.02 feet to an iron pin found,
(9) N08°40'18"E, a distance of 230.02 feet to the **POINT OF BEGINNING,** containing the 445.11 acres tract of land.





Murfee Engineering Company

CROSSWINDS MUD

GENERAL LOCATION MAP

1101 Capital of Texas Highway South, Building D, Suite 110, Austin, Texas 78746 (512) 327-9204

Texas Registered Engineering Firm F-353

FILE(LAYOUT): O:\1101\1301\110212-TXDOT-LOCATION.dwg (Layout1) | DATE: 11/2/2012 | DRAWN: RWH

Exhibit "B"

Hays Central Appraisal District Chief Appraiser Certificate Evidencing Ownership of Property

CERTIFICATE OF OWNERSHIP

THE STATE OF TEXAS §
§
COUNTY OF HAYS §

I, David Valle, Chief Appraiser of Hays County Central Appraisal District, Texas, hereby certify that **Exhibit A** lists the owners of the property within the area proposed to be Crosswinds Municipal Utility District, a legal description of which is attached as **Exhibit B**, which is within Hays County, Texas.

WITNESS MY SIGNATURE the 17 day of September, 2012.

David Valle
David Valle
Chief Appraiser
Hays County Appraisal District

STATE OF TEXAS §
§
COUNTY OF HAYS §

This instrument was acknowledged before me, on the 17 day of September, 2012, by David Valle, Chief Appraiser of the Hays County Appraisal District on behalf of said appraisal district.

GLORIA LUNA
Notary Public, State of Texas
My Commission Expires
FEBRUARY 20, 2013

Gloria Luna
Notary Public, State of Texas
Printed Name: Gloria Luna
My Commission Expires: Feb. 20, 2013

[SEAL]

EXHIBIT A
LANDOWNERS

EB WINDY HILL LP

EXHIBIT B

FIELD NOTES

BEING ALL THAT CERTAIN TRACT OR PARCEL OF LAND OUT OF AND A PART OF THE JESSE B. EAVES SURVEY, ABSTRACT 166, AND THE SAMUEL LITTLE SURVEY, ABSTRACT 286, SITUATED IN HAYS COUNTY, TEXAS, SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS BEING A PORTION OF THAT CERTAIN 446.80 ACRES OF LAND CONVEYED TO H.H. PHILLIPS IN VOLUME 201, PAGE 19 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS, SAID TRACT BEING 445.11 ACRES OF LAND MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

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THENCE, with the east line of said Dove Hills Estates Section One the following nine (9) courses and distances:

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2

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 24, 2013

BY CERTIFIED MAIL

Mr. Ronald J. Freeman
Freeman & Corbett
8500 Bluffstone Cove, Ste. B-104
Austin, TX 78759

Re: Petition for Expedited Release Pursuant to Texas Water Code, Section 13.254(a-5) from EB Windy Hill, L.P., to Decertify a Portion of Certificate of Convenience and Necessity (CCN) No. 12983 held by Monarch Utilities I, L.P., in Hays County; Application No. 37510-C

CN: 602740706; RN: 102904596

Dear Mr. Freeman:

Your petition for expedited release from a portion of Monarch Utilities I, L.P.'s CCN, received on January 8, 2013, has been accepted for filing. Thank you for providing the items we requested. Ms. Kristy Nguyen has been assigned to perform the technical review. The petition has been assigned Application No. 37510-C. Please refer to this number in future correspondence.

Additional information may also be requested through future correspondence.

If you have any questions, please contact Ms. Kristy Nguyen at 512/239-4634, or if by correspondence, include Mail Code 153 in the letterhead address.

Sincerely,

Lisa Fuentes for

Tammy Benter, Manager
Utilities & Districts Section
Water Supply Division

TB/KN/mmg

cc: Monarch Utilities I, L.P.

3

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 19, 2013

Ronald J. Freeman
Freeman & Corbett
8500 Bluffstone Cove, Suite B-104
Austin, Texas 78759

Monarch Utilities I, LP
12535 Reed Road
Sugar Land, Texas 77478

RE: Monarch Utilities I, LP
Certificate of Convenience and Necessity No. 12983

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 effective date of the approval. 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 Public Education Program, toll free, at 1-800-687-4040.

Sincerely,

Bridget C. Bohac

Bridget C. Bohac
Chief Clerk

BCB/ms

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

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 19, 2013

Mr. Ronald J. Freeman
Freeman & Corbett
8500 Bluffstone Cove, Ste. B-104
Austin, TX 78759

Re: Petition for Expedited Release Pursuant to Texas Water Code, Section 13.254(a-5) from EB Windy Hill, LP, to Decertify a Portion of Certificate of Convenience and Necessity (CCN) No. 12983 held by Monarch Utilities I, LP, in Hays County; Application No. 37510-C

CN: 602740706; RN: 102904596

Dear Mr. Freeman:

Enclosed are the following documents issued by the Commission in the above referenced application:

- certified copy of the order,
- certified copies of the map, and
- copy of the certificate.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

If you have any questions, please contact Ms. Kristy Nguyen at 512/239-4634, or if by correspondence, include Mail Code 153 in the letterhead address.

Sincerely,

Linda Brookins, Director
Water Supply Division

LB/KN/ln

Enclosures

cc: mailing list

Mailing List for Application No. 37510-C

Ronald Freeman
Freeman & Corbett
8500 Bluffstone Cove, Ste. B-104
Austin, TX 78759

Monarch Utilities 1, LP
12535 Reed Rd
Sugar Land, Texas 77478

THE STATE OF TEXAS
COUNTY OF TRAVIS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

03 19 2013

APPLICATION NO. 37510-C

PETITION FROM EB WINDY HILL, LP, FOR AN EXPEDITED RELEASE FROM MONARCH UTILITIES I, LP'S CERTIFICATE OF CONVENIENCE AND NECESSITY (CCN) NO. 12983 IN HAYS COUNTY, TEXAS	§ § § § § § §	**BEFORE THE** **TEXAS COMMISSION ON** **ENVIRONMENTAL QUALITY**

ORDER

On **February 13, 2013**, the Executive Director of the Texas Commission on Environmental Quality, pursuant to Chapters 5 and 13 of the Texas Water Code, considered the petition of EB Windy Hill, LP, (Petitioner) for expedited release from water CCN No. 12983, held by Monarch Utilities I, LP, in Hays County, Texas.

The criteria set forth in section 13.254(a-5) of the Texas Water Code has been considered. The Petitioner has satisfied all criteria to be released from the CCN pursuant to that section.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY that

1. The petition from EB Windy Hill, LP, for expedited release from water CCN No. 12983 of Monarch Utilities I, LP, as reflected in the attached copy of the official

water service area map for Hays County, Texas, is hereby approved.

2. The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this Order and the attached map to the petitioner and the CCN holder.
3. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

Issue Date: **February 13, 2013**

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

For the Commission

Texas Commission on Environmental Quality

By These Presents Be It Known To All That

Monarch Utilities I, LP

having duly applied for certification to provide water utility service for the convenience and necessity of the public, and it having been determined by this Commission that the public convenience and necessity would in fact be advanced by the provision of such service by this Applicant, is entitled to and is hereby granted this

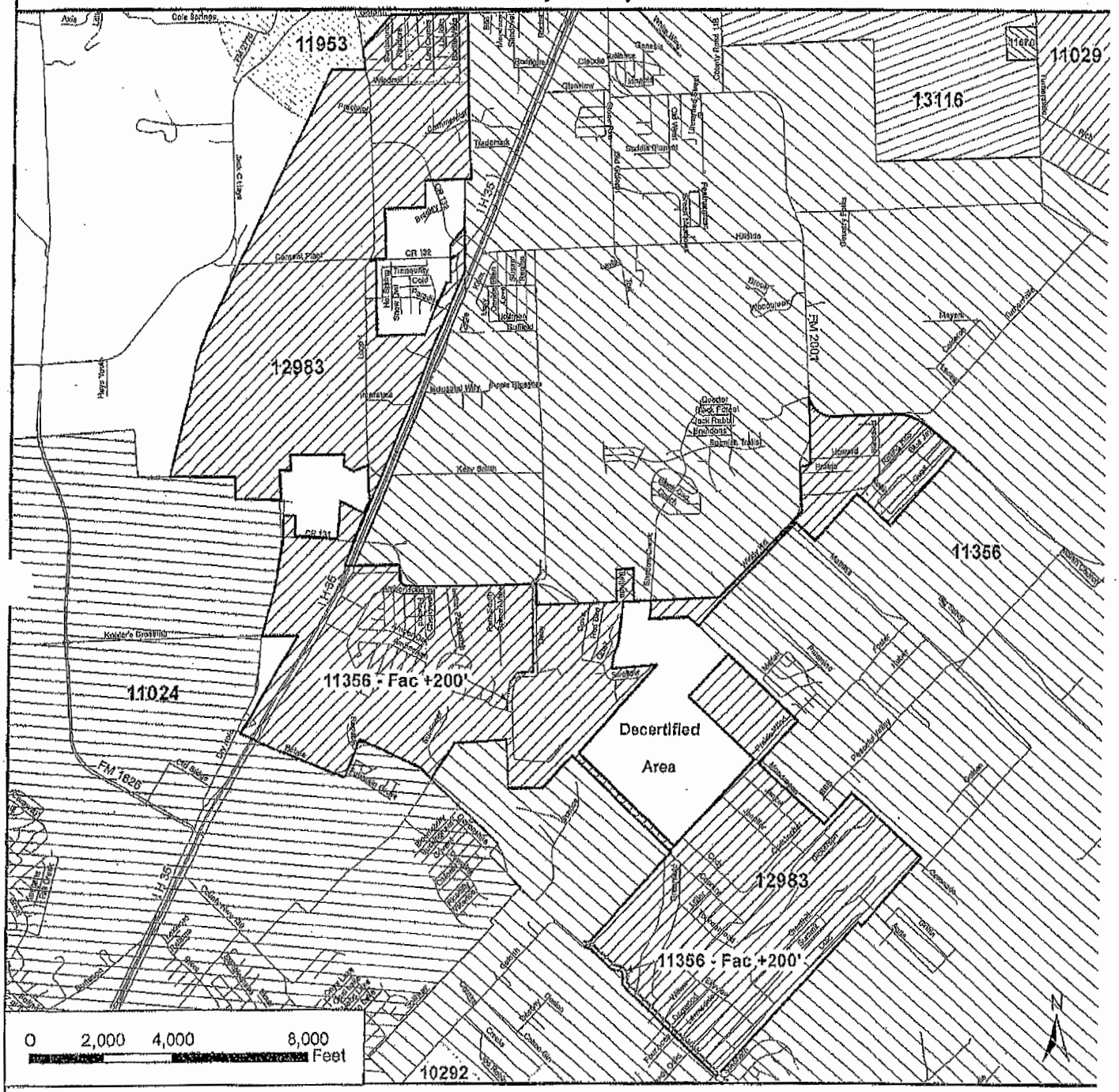
Certificate of Convenience and Necessity No. 12983

to provide continuous and adequate water utility service to that service area or those service areas in Bandera, Brazoria, Chambers, Denton, Grayson, Hays, Henderson, Hood, Johnson, Liberty, Marion, Matagorda, Medina, Montgomery, Parker, Polk, San Jacinto, Smith, Tarrant, trinity, Tyler, Van Zandt, Wise and Wood Counties as by final Order or Orders duly entered by this Commission, which Order or Orders resulting from Application No. 37510-C are on file at the Commission offices in Austin, Texas; and are matters of official record available for public inspection; and be it known further that these presents do evidence the authority and the duty of Monarch Utilities I, LP, to provide such utility service in accordance with the laws of this State and Rules of this Commission, subject only to any power and responsibility of this Commission to revoke or amend this Certificate in whole or in part upon a subsequent showing that the public convenience and necessity would be better served thereby.

Issued at Austin, Texas, this **February 13, 2013**

For the Commission

Monarch Utilities I, LP
Portion of Water Service Area
CCN No. 12983
Application No. 37510-C
Petition for Expedited Release from EB Windy Hill, LP
to Decertify a Portion of CCN No. 12983 from Monarch Utilities I, LP
in Hays County



Decertified Area

Water CCN Service Areas

- 12983 - Monarch Utilities I LP
- 10292 - County Line WSC
- 11024 - City of Kyle
- 11029 - Creedmoor Maha WSC
- 11356 - Goforth SUD
- 11670 - Lower Colorado River Authority
- 11953 - City of Buda
- 13116 - Sunfield MUD 4

Water CCN Facilities + 200'

- 11356 - Goforth SUD

TCEQ

Map by: Suzanne Jaster
Date Created: February 4, 2013
Project Path: c:/gis/projects/applications/37510-c.mxd

Monarch Utilities I, LP
Portion of Water Service Area
CCN No. 12983
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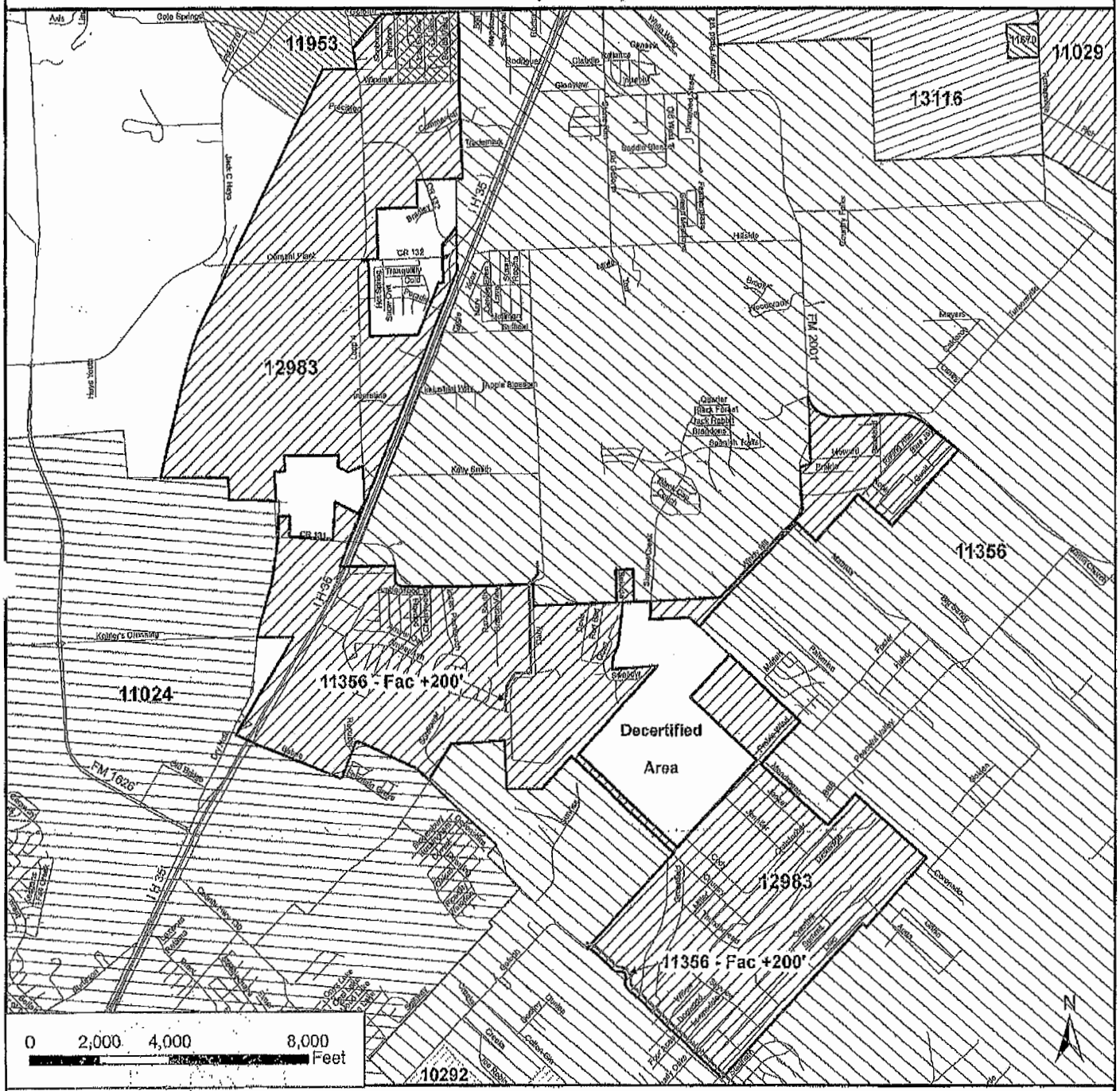

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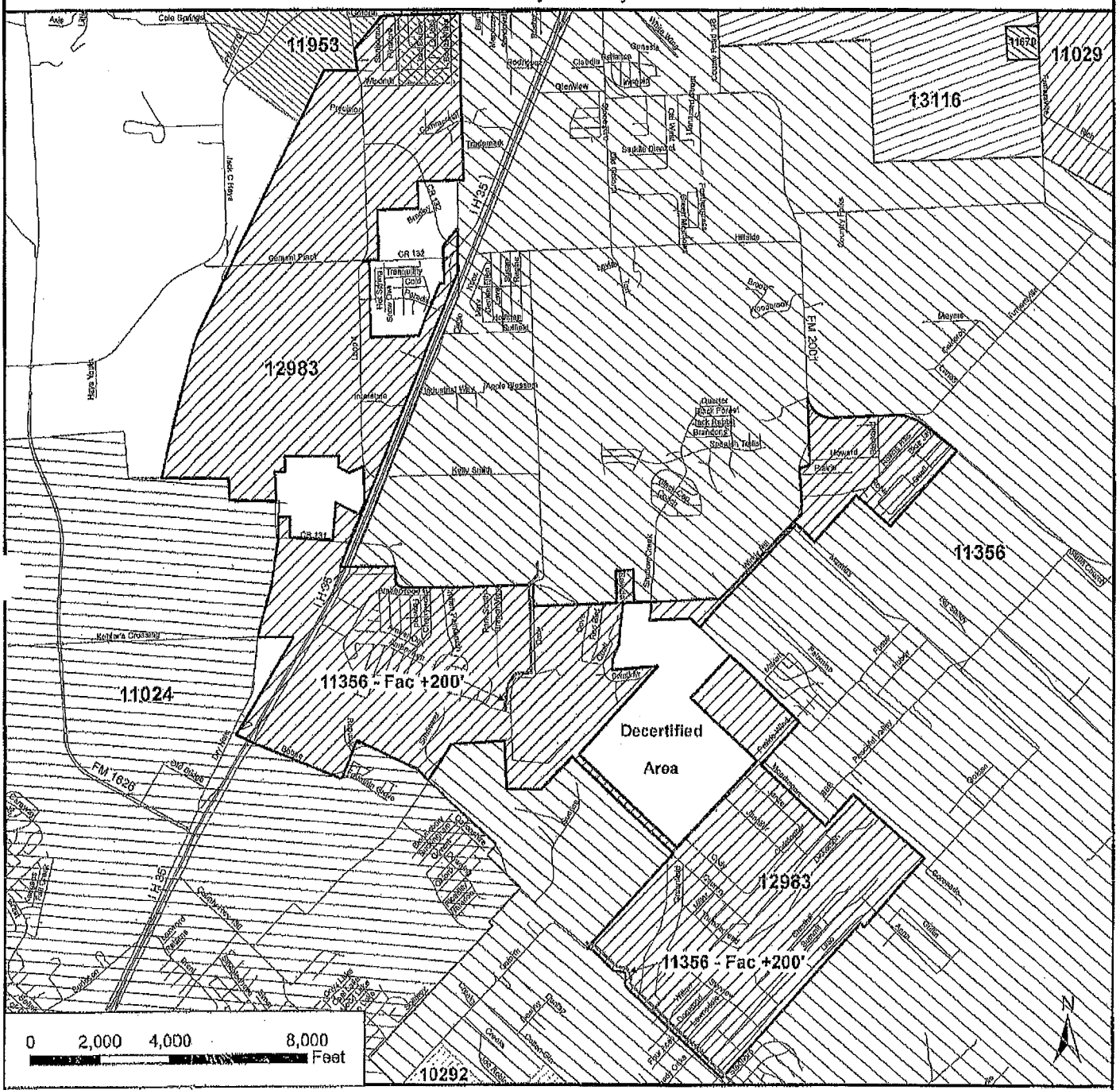

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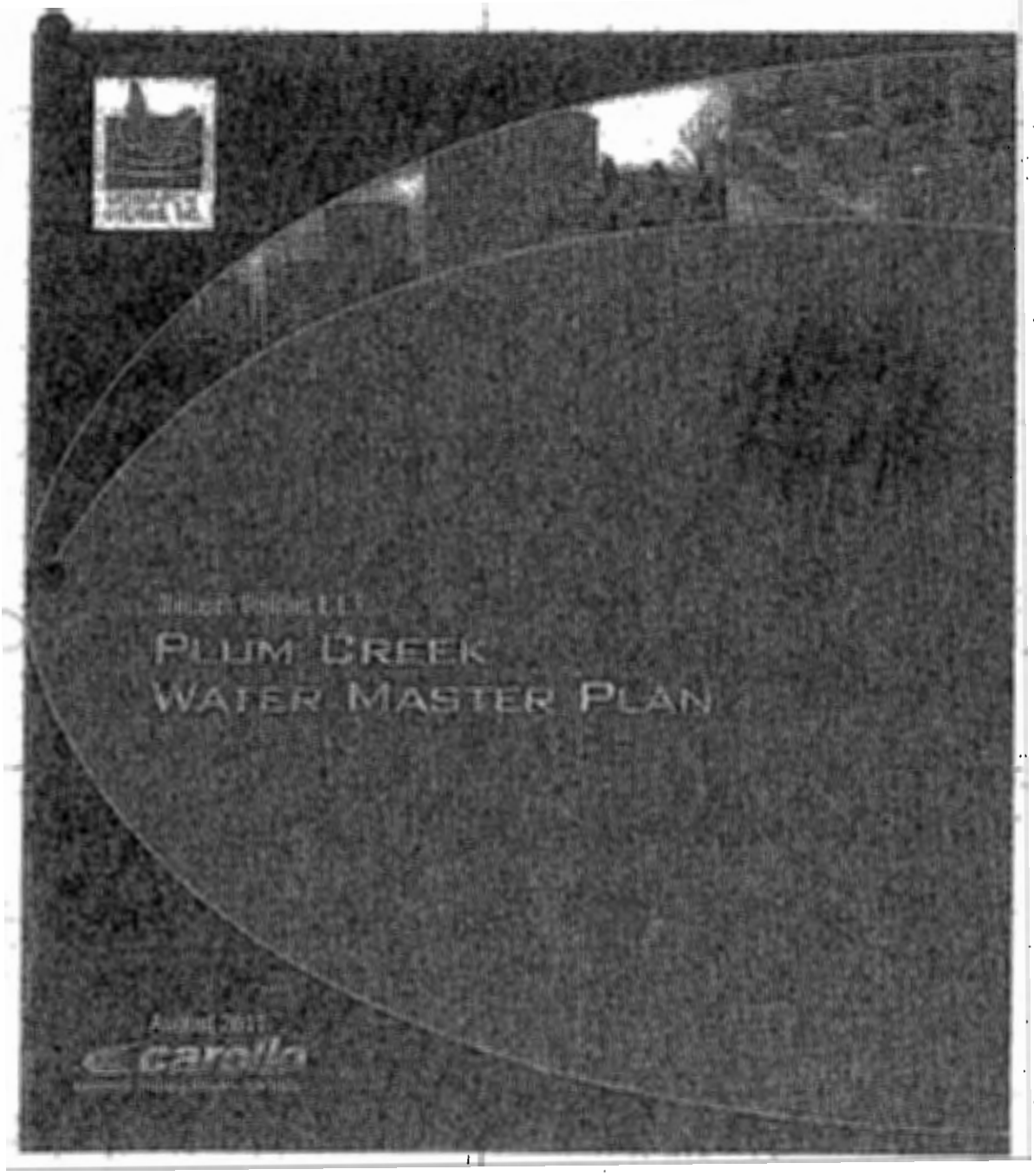
PLUM CREEK
WATER MASTER PLAN
carollo

Monarch Utilities I LP

PLUM CREEK WATER SYSTEM MASTER PLAN

August 2011

STATE OF TEXAS
HANI EMIL MICHEL
60763
LICENSED
PROFESSIONAL ENGINEER
8-23-11

Carollo Engineers, Inc.

TBPE No. F-882

FINAL

carollo

8911 CAPITAL OF TEXAS HIGHWAY NORTH, SUITE 2200 • AUSTIN, TEXAS 78759 • (512) 453-5303 • FAX (512) 453-0101
pw://CarolloDocumentsClient/TX/SWW/Cr0403800/Deliverables/Plum Creek/Plum Creek Master Plan (Final August 2011).

Monarch Utilities I LP

PLUM CREEK WATER SYSTEM MASTER PLAN

TABLE OF CONTENTS

Page No.

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND 1-1
1.2 SERVICE AREA 1-1
1.3 AUTHORIZATION AND SCOPE 1-1
1.4 REPORT ORGANIZATION 1-2

CHAPTER 2 PLANNING FRAMEWORK

2.1 LAND USE PLAN 2-1
2.2 UNIT DEMANDS 2-2
2.3 DEMAND PROJECTIONS 2-5
2.3.1 Existing Plum Creek CC&N Area 2-5
2.3.2 Living Unit Equivalent Projections 2-6
2.4 WATER SYSTEM PERFORMANCE/DESIGN CRITERIA 2-9
2.4.1 Water System Components 2-9
2.4.2 Basis of Criteria 2-9
2.4.3 Water Supplies 2-10
2.4.4 Storage Facilities 2-10
2.4.5 Booster Pump Stations 2-10
2.4.6 Major Transmission Mains 2-11
2.4.7 Fire Flow 2-12
2.4.8 Peaking Factors 2-13
2.4.9 Criteria Summary 2-13

CHAPTER 3 HYDRAULIC MODEL

3.1 PURPOSE 3-1
3.2 DEVELOPMENT 3-1
3.2.1 Infrastructure 3-1
3.2.2 Demands 3-2
3.3 CALIBRATION 3-2
3.4 SCENARIOS 3-6

STATE OF TEXAS
HANI EMIL MICHEL
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LICENSED
PROFESSIONAL ENGINEER
8-23-11

Carollo Engineers, Inc.
TBPE No. F-862

CHAPTER 4 WATER SYSTEM MASTER PLAN
4.1 WATER INFRASTRUCTURE IN 2010 4-1
4.2 MASTER PLANNING EVALUATIONS 4-5
4.2.1 Evaluation of 2011 Infrastructure 4-5
4.2.2 Water Supplies 4-5
4.2.3 Pressure Planes 4-12
4.2.4 Storage 4-12
4.2.5 Pump Stations 4-15
4.2.6 Water Mains 4-16
4.2.7 Phased Improvements 4-19

CHAPTER 5 CAPITAL IMPROVEMENT PLAN
5.1 UNIT COSTS 5-1
5.2 CAPITAL PLAN 5-1
5.3 CAPITAL COST RECOVERY 5-8
5.4 RECOMMENDATIONS 5-8

APPENDIX A – DETAIL MAPS OF THE PLUM CREEK DISTRIBUTION SYSTEM
APPENDIX B – MODEL CALIBRATION GRAPHS
APPENDIX C – CONDITION ASSESSMENT PROJECT MEMORANDUM

LIST OF TABLES

Table 2.1 Plum Creek Service Area Acreages by Land Use 2-1
Table 2.2 Plum Creek Current Water Demands Developed From Land Use Plan 2-5
Table 2.3 Plum Creek Buildout Water Demands Developed From Land Use Plan 2-6
Table 2.4 Living Unit Equivalent Projections by Planning Year 2-9
Table 2.5 Pump Station Reliability Criteria 2-11
Table 2.6 Recommended Pipeline Water Velocity and Head Loss Criteria 2-12
Table 2.7 Fire Flow Criteria/Guidelines 2-13
Table 2.8 Water System Criteria Summary 2-14

Table 3.1 Hydraulic Model Calibration Summary 3-5

Table 4.1 Plum Creek Wells In 2010 4-1
Table 4.2 Plum Creek Storage Facilities in 2010 4-2
Table 4.3 Plum Creek Booster Station Facilities in 2010 4-2
Table 4.4 Plum Creek Water Main Table 4-5
Table 4.5 Plum Creek Water Supply Plan 4-11
Table 4.6 Water Storage Requirements for the Plum Creek CC&N 4-15
Table 4.7 Pumping Requirements in Each Planning Year through Buildout 4-16

Table 5.1 Unit Costs 5-2
Table 5.2 Phased Capital Improvements May 25 - 2011 Distribution System / Transmission Pipes 5-4
Table 5.3 Repair and Replacement Summary Recommendations 5-7
Table 5.4 Phased Capital Improvements to Provide Fire Flows 5-7
Table 5.5 Capital Cost Improvements Required to Serve Growth in the Plum Creek Water CC&N 5-8

LIST OF FIGURES

Figure 1.1 Plum Creek CC&N 1-3

Figure 2.1 Plum Creek CC&N Land Use 2-3
Figure 2.2 Plum Creek Current CC&N Projected Living Equivalents (LUEs) 2-7

Figure 3.1 Plum Creek February 2011 Field Test Locations 3-3

Figure 4.1 Plum Creek Pressure Plane Schematic 4-3
Figure 4.2 Plum Creek Current Water Distribution System Infrastructure 4-7
Figure 4.3 Plum Creek Fire Flow Analysis Results for 2011 Demand Conditions 4-9
Figure 4.4 Pressure Plane Schematic for Buildout Conditions 4-13
Figure 4.5 Plum Creek Buildout Water Distribution System Infrastructure 4-17

Figure 5.1 CIP Project Locations 5-5

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INTRODUCTION

1.1 BACKGROUND

Monarch Utilities I, LP (Monarch) owns and operates the Plum Creek Water System (Plum Creek) that provides water service to customers in an area south of Austin, Texas. The water service area is approximately 7.4 square miles. This master plan project was undertaken at this time because Monarch needs to identify additional water sources to serve the area. Monarch currently purchases well water from the Guadalupe Basin River Authority (GBRA) in addition to its own wells to serve Plum Creek; but this well water is not sufficient to serve the entire CC&N service area. To meet projected future demands, Monarch may elect to develop a new well in the Plum Creek northern service area or to purchase wholesale water from a neighboring community.

The south and southeastern portions of the Plum Creek service area are supplied by small diameter mains that are not capable of supplying fire flows. Monarch would like to have a plan to be able to provide fire flows to the entire service area.

The master plan provides recommendations for water system improvements that are needed to serve the Plum Creek service area between 2011 and 2030. Growth and development projections were made for planning years in five-year planning increments between 2011 and the projected system buildout by 2030. Larger distribution system mains, storage, and pumping requirements are included in this master plan. Smaller mains are assumed to be the responsibility of individual developers and will need to be defined when specific developments are designed and laid out. These smaller mains are not included in this water system master plan capital improvement program.

1.2 SERVICE AREA

Monarch operates the Plum Creek system within an established Certificate of Convenience and Necessity (CC&N) boundary that is shown in Figure 1.1. This service area is approximately 4,742 acres and is located on both sides of I-35, south of Buda, Texas. A portion of the Cities of Kyle and Buda, Texas is within the Plum Creek CC&N.

1.3 AUTHORIZATION AND SCOPE

This project was authorized in an agreement between Carollo Engineers and Monarch Utilities I LP dated June 14, 2010. The scope of services is outlined in the task order dated January 4, 2011.

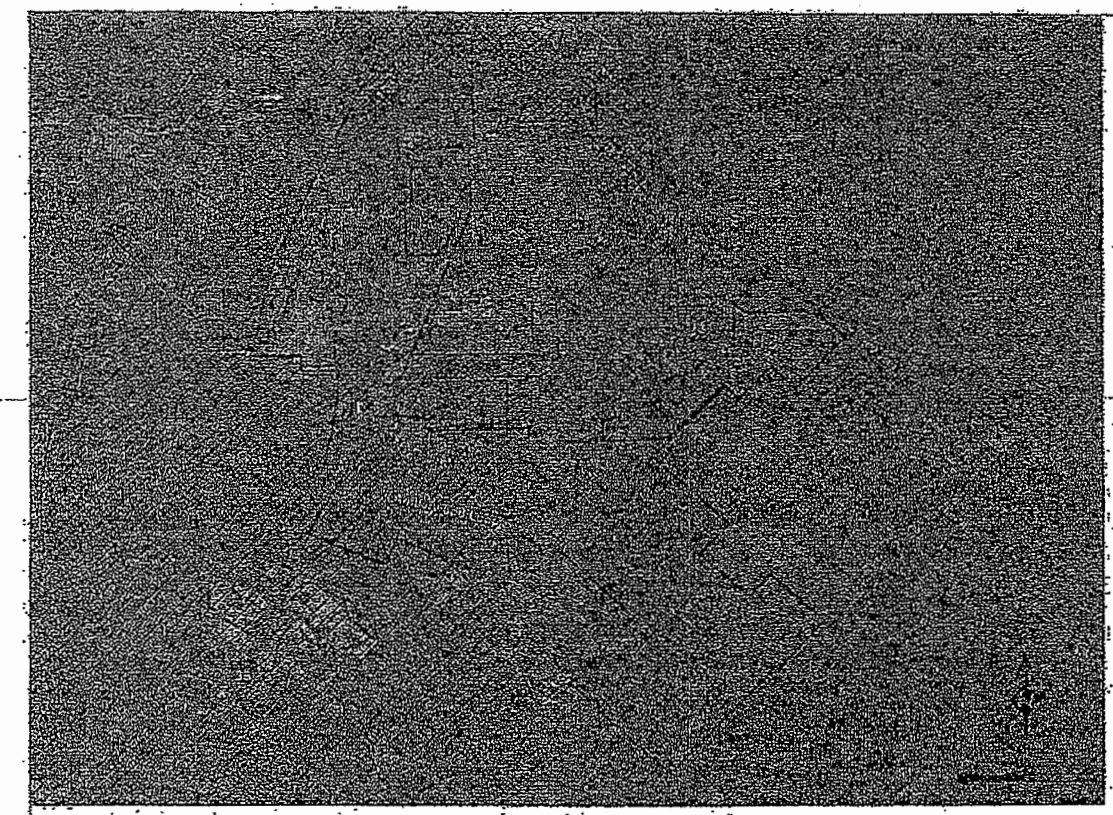
Major components of this master plan scope include:

- Create and calibrate a hydraulic model of the water distribution system.
- Evaluate the current water supply and distribution system for deficiencies and provide recommendations as appropriate.
- Plan the infrastructure needed to support full buildout of the service area.
- Perform a condition assessment of the wells, reservoirs, and pump stations.
- Evaluate new water supply infrastructure requirements.
- Develop a capital improvement plan and calculate the capital cost recovery.

1.4 REPORT ORGANIZATION

This report is divided into the following major sections:

1. **Planning Framework** – This section describes how water demands were developed for each planning period. Growth projections are documented, to provide a basis for the rate of growth in each planning period. Performance criteria, which is the measure of acceptability for water infrastructure is also documented.
2. **Hydraulic Model** – This section describes how the hydraulic model was created, calibrated, and applied to develop the infrastructure recommendations for this master plan.
3. **Water System Master Plan** – This section documents the current water infrastructure and contains an assessment of the current ability of the water system to deliver water and satisfy regulatory requirements. The infrastructure and water supplies needed to serve the area in each planning period until buildout are documented.
4. **Capital Improvement Plan** – This section contains a definition of the infrastructure required to fully develop the service area and associated costs. Capital improvements are grouped into each planning period to establish a capital spending program. Capital recovery costs are also provided.
5. **Appendices** – Appendix A contains map details where data clarifications have been requested. Appendix B contains hydraulic model calibration results. Appendix C contains the infrastructure condition assessment results.



SouthWest Water Company

Legend

Current Plum Creek CC&N

City of Kyle

City of Buda

PLUM CREEK CC&N

FIGURE 1.1

SOURCE: STRUTTES OF PLUM CREEK WATER SYSTEM MASTER PLAN

carollo

2.1 LAND USE PLAN

A land use plan was developed for the current and proposed future Plum Creek water service areas based on zoning information provided by Monarch. The land use plan consists of a geographic information system (GIS) data layer with polygons surrounding land areas that either have or are expected to have a homogeneous type of development. Current (2009) aerial photography was used to estimate the amount of currently developed acreage in each land use polygon in the Plum Creek CC&N area. The land use plan contains information on the type of development, the total number of acres currently developed, and the total number of acres that could potentially be developed.

Table 2.1 summarizes the acreage estimated to be currently developed and the acreage that potentially would be developed at buildout by land use category within the existing Plum Creek service area.

Table 2.1 Plum Creek Service Area Acreages by Land Use
Plum Creek Water System Master Plan
Monarch Utilities I LP

Land Use Category	Plum Creek Service Area Land Use (acres)	
	2010	Buildout
Agriculture/Conservation	341	341
Commercial	325	689
Industrial	604	760
Rural Residential	1,161	1,364
Low Density Residential	143	143
Medium Density Residential	384	614
Multi Family Residential	0	72
School	44	44
Mixed Use	0	191
Phillips Ranch Development	0	604
Total	2,982	4,742

Figure 2.1 shows the land use plan for the current Plum Creek water service area.

The characteristics of different types of land use result in varying water demands on a per acre basis. The land use plan was developed for the Plum Creek service area primarily for the purpose of projecting future water demands. The land use derived from aerial photographs was used to classify all areas into logical categories that have similar water usage patterns. The following sections describe how the land use plan was used to develop current and future water demand estimates.

2.2 UNIT DEMANDS

Water unit demands were developed for each of the land use types included in the land use plan and are expressed on a per acre basis. Initial water unit demands were estimated using typical water use values observed in communities similar to Plum Creek and then adjusted so that the total estimated current and projected demand correlates with the demand projections based on the Living Unit Equivalents (LUEs) provided by Monarch. The unit demands estimated for the existing commercial and industrial development in the Plum Creek system are based on the approximately 281 LUEs Monarch estimates are associated with non-residential customers and their associated average day demand (0.2 gpm/LUE). The commercial and industrial unit water demands of 126 and 67 gpad, respectively, are the result of the LUE predicted demand for 281 LUEs and the commercial and industrial acreage estimated to be currently developed. By buildout, the commercial and industrial unit water demands are estimated to be 286 gpad (assuming 1 commercial LUE/acre). If commercial and industrial development constructed in the future is more dense (2.5 – 5 LUEs/acre), then the unit demand values could be between 700 to 1,400 gpad. The LUE projections are described in more detail in the following section.

Approximately 73 percent of Plum Creek's current water service area is composed of single family residential land use types. As the service area develops, more commercial, industrial and mixed use development is expected to occur. By buildout, it is expected that approximately 57 percent of the service area will include single- and multi-family residential land use types.

Table 2.2 summarizes the area currently developed, the unit demand, and the total demand generated for each land use type in the current Plum Creek water service area. The total demand predicted by the land use plan is consistent with the demand estimated from Plum Creek's LUE count.

Legend
Land Types
PLUM CREEK OCAW
LAND USE PLAN

Table 2.2 Plum Creek Current Water Demands Developed From Land Use Plan Plum Creek Water System Master Plan Monarch Utilities I LP			
Land Use Type	Area Currently Developed [1] (acres)	Unit Demand (gal/ac/day)	Total Demand (gal/day)
Agriculture/Conservation	341	0	0
Commercial	325	125 [2]	40,625
Industrial	604	67 [2]	40,468
Rural Residential	1,151	144	165,744
Low Density Residential	143	576	82,368
Medium Density Residential	384	864	331,776
School	44	576	25,344
Total Land Use Acreage/Demand	2,992	--	686,325
LUE-based Estimated 2010 Annual Average Day Demand (gpd) [3]			686,880

Notes:
(1) Based on 2009 aerial photography.
(2) Assumes 281 existing commercial/industrial (non-residential) LUEs
(3) Plum Creek 2010 estimated average day demand (2,390 LUEs x 0.2 gpm/LUE = 478 gpm or 0.69 mgd)

2.3 DEMAND PROJECTIONS

2.3.1 Existing Plum Creek CC&N Area

Monarch provided growth projections based on LUEs that were used as the basis for water demand projections for the water service area. For this master plan, interim planning years were established every 5 years from 2010 through 2030 (buildout). Figure 2.2 illustrates the number of LUEs expected to be active in each planning year from 2010 through 2030.

Water demand projections were developed for the current Plum Creek CC&N area for buildout (2030) conditions using the land use plan and the unit load factors discussed previously. These demands are summarized in Table 2.3.

Table 2.3 Plum Creek Buildout Water Demands Developed From Land Use Plan Plum Creek Water System Master Plan Monarch Utilities I LP			
Land Use Type	Area Developed at Buildout (1) (acres)	Unit Demand (gal/ac/day)	Total Projected Demand (gal/day)
Agriculture/Conservation	341	0	0
Commercial	669	288 (2)	198,432
Industrial	780	288 (2)	224,640
Rural Residential	1,364	144	196,416
Low Density Residential	143	576	82,368
Medium Density Residential	514	864	444,096
Multi Family Residential	72	1,728	124,416
School	44	576	24,344
Mixed Use	191	576	110,016
Phillips Ranch Development	604	812	490,448
Total Land Use Acreage/Demand		-	**1,896,176**
LUE-based Estimated 2030 Annual Average Day Demand (gpd) (3)			**1,895,628**

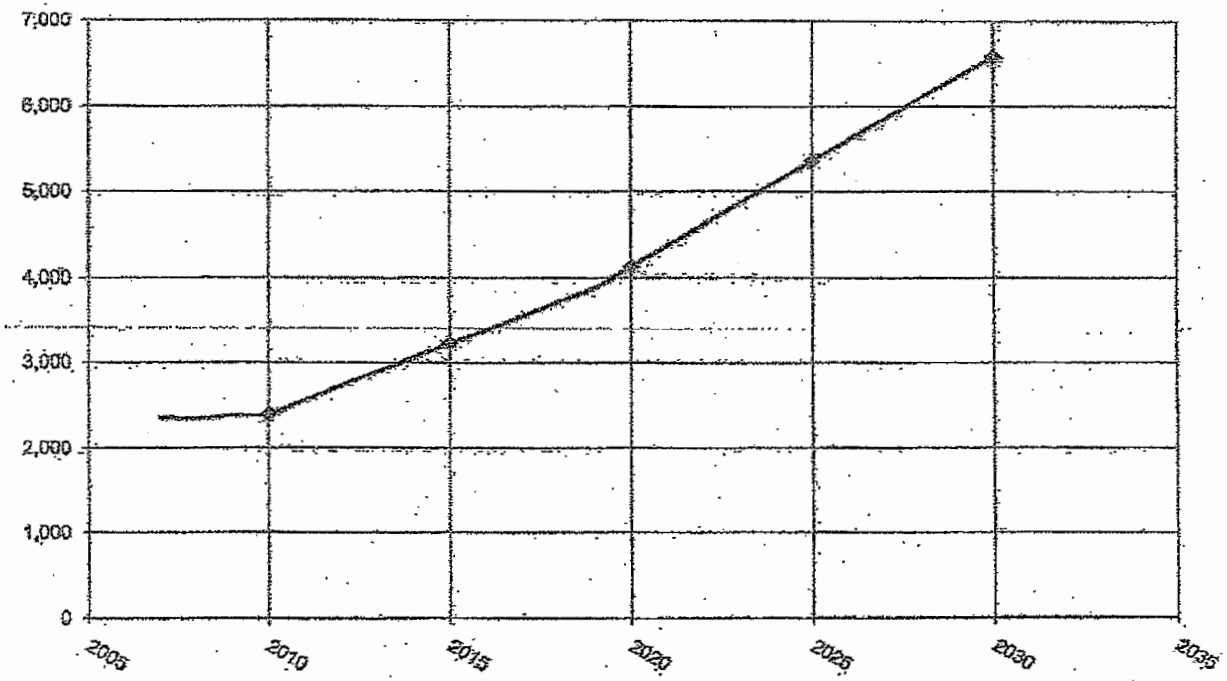
Notes:
(1) Based on 100% buildout of all areas within the current Plum Creek CC&N.
(2) Assumes 1 LUE/acre for future industrial and commercial development.
(3) Plum Creek buildout estimated demand (6,580 LUEs x 0.2 gpm/LUE = 1,316 gpm or 1.9 mgd).

2.3.2 Living Unit Equivalent Projections

The number of LUEs that would be included in the Plum Creek CC&N in the future was calculated using a methodology similar to what was used to estimate LUEs in the current Plum Creek Water CC&N. Table 2.4 shows the total number of LUEs projected for the current Plum Creek Water CC&N.

Table 2.4 Living Unit Equivalent Projections by Planning Year Plum Creek Water System Master Plan Monarch Utilities I LP					
Location	2010	2015	2020	2025	2030
Plum Creek Customers	2,240	2,972	3,781	4,905	6,080
Plum Creek Wholesale Customers (1)	150	250	350	450	500
Total	2,390	3,222	4,131	5,355	6,580

Notes:
(1) South Buda assumed to have 150 homes in 2011 with another 350 homes possible in the immediate area.



PLUM CREEK CURRENT CC&N PROJECTED LIVING EQUIVALENTS (LUES)

FIGURE 2.2

MONARCH UTILITIES I LP
PLUM CREEK WATER MASTER PLAN

carollo

2.4 WATER SYSTEM PERFORMANCE/DESIGN CRITERIA

This section describes the "standards of measurement" that were used to evaluate the performance of the existing water system, as well as to determine the capability requirements of future improvements. The determination of production, booster pumping, transmission, and storage facilities sizing is based on these performance and design criteria.

2.4.1 Water System Components

The major components of the Plum Creek water system where performance criteria applies include the following:

- Water supplies
- Groundwater wells
- Storage facilities (elevated and ground storage)
- Booster pump stations
- Major transmission mains

The components of the water system are discussed in the following sections, and performance and design criteria are recommended for each.

2.4.2 Basis of Criteria

For some components of the performance criteria, the Texas Commission on Environmental Quality (TCEQ) provides guidance.

The acceptable level of service expected from the water distribution system is defined by the adequacy and reliability of the water supply delivered to the customer. A reasonable level of service includes provisions for adequate system pressures, fire protection, and supply reliability. Therefore, water system performance and design criteria address the following areas:

- **Water System Reliability/Redundancy:** A level of service such that the components of the water system collectively can produce and deliver water even when some treatment, storage, or pumping facilities are not in service.
- **Water System Operational Requirements:** A level of service such that water can be delivered reliably under fire flow, high demand, or other extreme or unusual operating conditions.

2.4.3 Water Supplies

Water supply redundancy is an important component of the overall reliability/redundancy of Plum Creek's water system. Water supply redundancy refers to the degree to which water can be supplied to Plum Creek in the event that one or more of the water supply sources becomes unavailable. Decisions about the extent of redundancy are often policy decisions influenced by the price a utility wants to pay for the redundancy compared to the risk of having to implement water use restrictions or provide a lower level of service to customers if a water supply source is unavailable.

The redundancy criterion used in this study is backup supply and facilities needed to meet the maximum day water demand condition. According to TCEQ regulations, water supply requirements are normally 0.6 gallons per minute (gpm) per connection. However, Plum Creek requested and was granted a capacity exception so that only 0.44 gpm per connection is required. This capacity exception includes a 15 percent safety factor.

The total well capacity should also be set so that the maximum daily demand can be delivered with the largest well out of service.

2.4.4 Storage Facilities

Because production facilities are designed to operate at a steady rate over an extended period of time, storage reservoirs are used to accommodate fluctuating water demands. Storage facilities should be designed and operated to provide daily demand fluctuations, fire demand, and emergency reserve storage, while achieving storage turnover to minimize water quality degradation.

The TCEQ Rules and Regulations for Public Water Systems dictate that 100 gallons per connection of elevated storage and 200 gallons per connection of total storage be provided for community water systems with more than 2,500 connections. However, Plum Creek requested and was granted a capacity exception, so that 73 gallons per connection of elevated storage and 146 gallons per connection of total storage are required. These capacity exception criteria were used to evaluate existing and future storage requirements.

2.4.5 Booster Pump Stations

Pump stations are often the most critical components in a distribution system with respect to meeting reliability/redundancy performance criteria because these facilities are subject to disruption by power outages, mechanical failures, and line breaks.

Table 2.5 summarizes these disrupting conditions and the criteria to be employed for pump station reliability.

Table 2.5	Pump Station Reliability Criteria. Plum Creek Water System Master Plan Monarch Utilities I LP	
Condition	**Result**	**Criteria**
Power Outage	Creates loss of pumping capacity at one or more pumping facilities.	Elevated storage is used to maintain a pressurized water supply during temporary power outages. Provide emergency backup power supply generation or dual power feed to critical facilities.
Mechanical Failure	Creates loss of pumping capacity due to one or more pumps at a facility being out of service.	Provide sufficient pumping capacity at each booster pumping station to meet peak hour demands with the largest pump out of service (referred to as "firm capacity" of the station). This allows for pumps to be out of service due to mechanical failure or unscheduled maintenance.
Line Break	Occurs at or near the booster station, creating a loss of all or a portion of the pumping capacity at the facility.	Mitigate a short-term (less than one day) disruption in supply caused by a line break at or near a booster station by providing multiple pumping facilities, storage, and looped transmission throughout the system.

Per TCEQ rules, pump stations will be sized to deliver the peak hourly demand with the largest pump in the station out of service.

2.4.6 Major Transmission Mains

Water system piping serves three basic purposes:

- Transferring water from the source of production to storage.
- Distributing water from production or storage to the consumer.
- Providing a conduit for firefighting water.

Distributing water to the consumer requires a system capable of meeting instantaneous demands that vary with the time of day and season of year. Therefore, transmission and distribution mains are sized for the greater of the maximum day demand plus fire flow or the peak hour demand.

The following pressure criteria are outlined in TCEQ rules to assess the adequacy of the water transmission/distribution system under the following two demand conditions:

- **Maximum Day Demand plus Fire-Flow Condition:** A minimum of 20 pounds per square inch (psi) at the point of maximum fire draft.
- **Peak Hour Demand:** Pressures must be greater than 35 psi at all points within the distribution network.

The recommended pipeline water velocity and head loss criteria are listed in Table 2.6 for maximum day, peak hour, and fire demand conditions. These head loss and velocity criteria are based on commonly accepted practices for water distribution system planning and design.

Table 2.6 Recommended Pipeline Water Velocity and Head Loss Criteria Plum Creek Water System Master Plan Monarch Utilities I L.P.			
Demand Condition	Pipe Diameter (inches)	Velocity (feet per second, fps)	Head Loss (feet of head loss per 1,000 feet of pipe)
Maximum Day	≤ 36	≤ 5	2-7
Peak Hour	–	≤ 7	≤ 10
Fire Demand	–	≤ 10	–

2.4.7 Fire Flow

Retail public water utilities are not required by Texas law to provide fire flows or fire protection under Chapter 341 of the Texas Health and Safety Code or Texas Water Code, Chapter 13. However, local fire departments are permitted to take water service, as available, from the Plum Creek system as needed for fire fighting and other emergency services.

Although not required, many areas in the Plum Creek system are able to provide fire flows. Monarch has a goal to provide fire flows within the Kyle city limits. To evaluate these areas, the following criteria were used. Fire flow requirements are usually determined by the local fire department. However, fire codes and building codes such as the International Fire Code (2003) and International Building Code (2003) serve as guidelines.

For one- and two-family dwellings, the International Fire Code specifies minimum required fire flow as follows:

- < 3,600 square foot fire area = 1,000 gpm for 2 hours duration.
- ≥ 3,600 square foot fire area = 1,500 gpm for 2 hours duration depending on construction type.

Depending on the type of use, construction, and fire area, the required fire flow and duration for commercial and industrial buildings ranges from 1,500 gpm for 2 hours to 8,000 gpm for 4 hours.

Table 2.8	Water System Criteria Summary Plum Creek Water System Master Plan Monarch Utilities I LP
Description	**Criteria**
System Pressure Criteria:	
Pressure at Service Connections	≥ 35 psi and ≤ 100 psi
Transmission/Distribution – Velocity and Head Loss Criteria:	
Maximum Day	Velocity ≤ 5 feet per second (fps) Head Loss ≤ 7 feet / 1,000 feet
Peak Hour	Velocity ≤ 7 fps Head Loss ≤ 10 feet / 1,000 feet
Fire Flow Condition (1)	Velocity ≤ 10 fps Pressure ≥ 20 psi at point of maximum fire draft
Well Criteria:	
Capacity	Supply maximum day demands with largest well out of service
Booster Pump Station Criteria:	
Firm Capacity	Supply maximum demands with the largest pump out of service
Storage Criteria:	
Elevated Storage:	100 gallons per service connection (LUE)
Total Storage	200 gallons per service connection (LUE)
Fire Demand Criteria: (1)	
Fire flow demand to be added to the maximum day demand at specific model nodes	Residential = 1,000 gpm for 2 hours Multi-family Residential = 1,500 gpm for 2 hours Commercial/Industrial/Retail = 3,000 gpm for 3 hours
Peaking Factors:	
Maximum Day / Average Annual Day:	1.57
Peak Hour / Maximum Day:	1.7

Note:
(1) Optional Criteria: The Texas Water Code does not mandate that retail water providers provide fire flow as a condition for holding a CC&N.

HYDRAULIC MODEL

3.1 PURPOSE

A hydraulic model was developed for the Plum Creek water distribution system in H_2OMAP Water from Innovyze (formerly MWHSoft). H_2OMAP Water allows both steady state and extended period simulation analyses, and provides tools that facilitate data exchange between Geographical Information Systems (GIS) and other data sources such as SCADA. H_2OMAP Water also provides tools that assist the user in identifying and rectifying errors in input data and filling in data gaps if necessary. Model output can be viewed from within the software in both graphical and tabular form or can be easily exported into GIS, Microsoft Excel, and other programs for additional analyses or to illustrate model results.

The Plum Creek water system hydraulic model was developed for this master plan in order to accomplish several tasks. These tasks include:

- Evaluating the capacity and performance of the existing distribution system under current and ultimate buildout demand conditions.
- Sizing and locating future infrastructure needed to serve the areas in the current Plum Creek Water CC&N.
- Identifying the infrastructure needed to utilize an additional water supply that has not yet been identified.

The hydraulic model developed for this master plan achieves all of these purposes and will provide Monarch with a valuable planning tool to assist in future system analysis and decision making. The model development, calibration, analyses and results are discussed in the following sections.

3.2 DEVELOPMENT

3.2.1 Infrastructure

AutoCAD data provided by Monarch was used as the primary framework for developing the water hydraulic model. All the pipes in the CAD database were imported into H_2OMAP Water and QA/QC checks were performed to identify and fix topology errors. In areas where connectivity was unclear, maps were provided to Monarch for clarification. Figures were also taken of each water storage and booster pumping facility and provided to Monarch to verify that the connectivity represented by the hydraulic model facilities was representative of how the facilities were constructed and operating. These figures are included in Appendix A.

Each pipe in the model is connected to a junction that either represents a model facility such as a tank, or a location along a pipeline. The elevations of tanks were taken from

as-built drawings or from tables provided by Monarch. The elevations of the junctions that represented locations along pipelines were interpolated from contour data. The volume for the elevated waterspheroid, EST 2, was modeled using a curve developed with a gauging table provided by Chicago Bridge & Iron Company (CBI). The other tanks were modeled as cylindrical tanks with the appropriate bottom and top elevations.

Pump curves were not available for any of the pump stations. Design points were available for some of the pump stations. Where design points were not available, reasonable assumptions were made to approximate pump operations.

Wells were represented as junctions in the model that provided a constant flow either to a tank or to the distribution system. Wells 1 and 2 pump to a ground storage tank at Site P2. Wells 1 and 2 are operated such that only one well operates at a time. Wells 3 and 4 pump to a ground storage tank at Site P4. Wells 3 and 4 are also operated such that only one well operates at a time. The flow rates for the wells was provided by Monarch and included in the model.

Future facilities were located by utilizing street centerline GIS data and aerial photography in order to avoid obvious alignment conflicts (e.g., new pipe going through existing buildings) so that the overall conceptual layout would make sense from a high-level perspective. All future facility locations in the model are approximate. The precise location of future pipes and other facilities will need to be determined when the infrastructure is designed.

3.2.2 Demands

The demands included in the model were based on the land use plan and unit demand values discussed in Chapter 2. In the model, demands were allocated to the junctions along pipelines to represent approximate customer demands at those locations. Demands were not allocated to nodes associated with facilities such as wells, pumps, valves or tanks. Demands were apportioned among the model nodes by overlaying the land use plan over the model nodes.

3.3 CALIBRATION

The primary purpose of model calibration is to make sure that the model is configured the same way as the actual distribution system, and to be certain that demands are allocated properly.

The model was calibrated for existing conditions using data from a field test conducted in February 2011. February 16, 2011 was selected as the calibration day. Six locations were initially selected to place pressure transducers for approximately one week. Figure 3.1 shows the locations where the pressure transducers were located during the field test.

Monarch provided daily totals for each of the water supplies during the test.

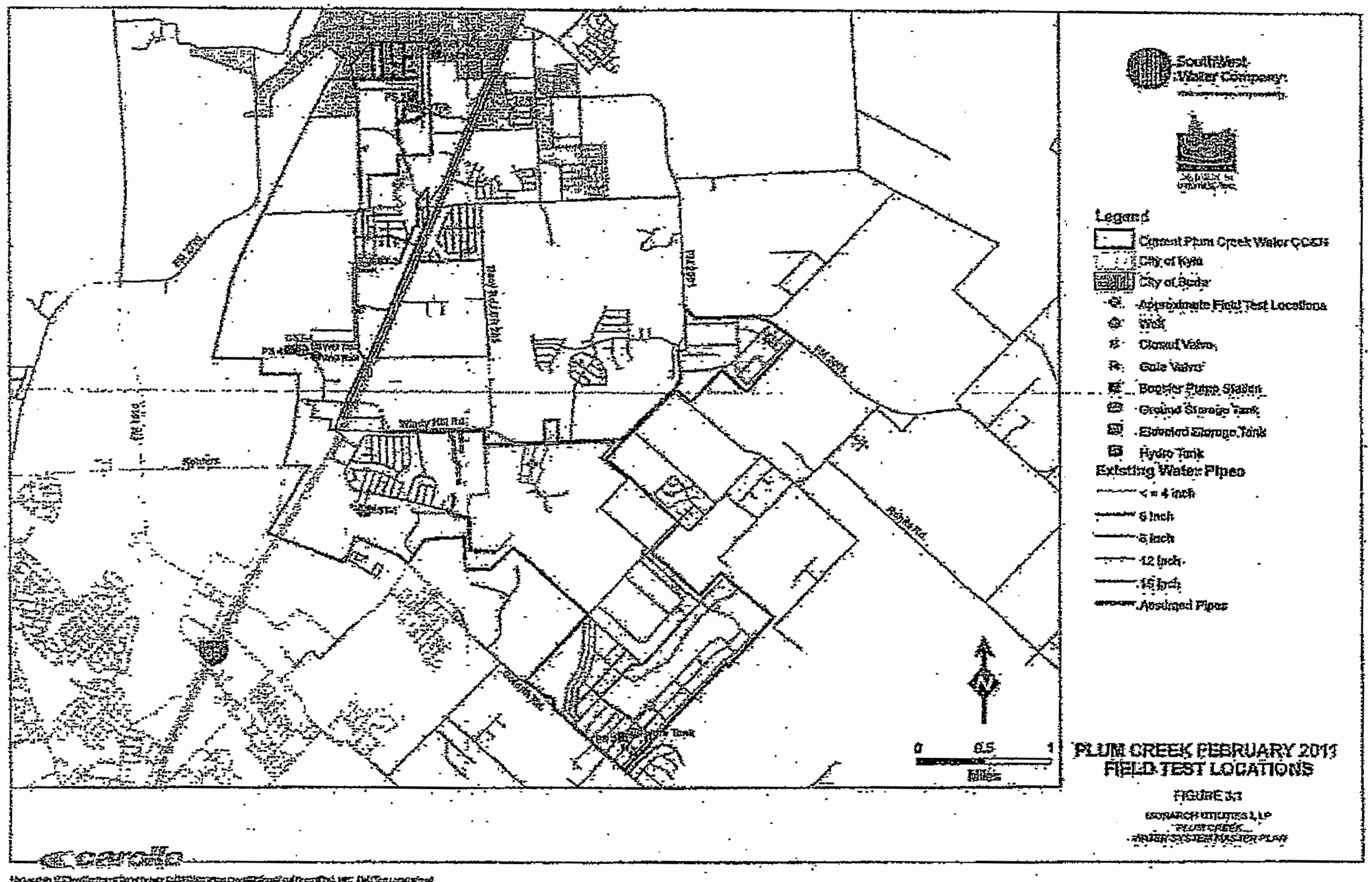

SouthWest Water Company
Legend
Current Plum Creek Water CCN
City of Kyle
City of Buda
Approximate Field Test Locations
Well
Closed Valve
Gate Valve
Booster Pump Station
Ground Storage Tank
Elevated Storage Tank
Hydro Tank
Existing Water Pipes
< = 4 inch
6 inch
8 inch
12 inch
16 inch
Abandoned Pipes
Windy Hill Rd.
0
0.5
1
Miles
PLUM CREEK FEBRUARY 2011
FIELD TEST LOCATIONS
FIGURE 3.1
MONARCH UTILITIES I, LP
PLUM CREEK
WATER SYSTEM MASTER PLAN

Table 3.1 shows the results of the model calibration for the pressure transducer locations. The model and test pressures shown in Table 3.1 represent the average pressure over the calibration day. Calibration graphs for each location are included in Appendix B that show how the hourly pressures at each location correlate between the model and field data.

In the model calibration process, several adjustments were made to the model so that the field data in the southeastern portion of the service area (Green Pastures) would match the model results. The Green Pastures area is served primarily by pipes between 1.5 and 6 inches in diameter. Hazen Williams C factors for these pipes were set to between 70 and 80. A 6-inch transmission line from the west portion of the distribution system feeds the Green Pastures Subdivision. Monarch indicated that there is a connection between this 6-inch transmission line and a newer 12-inch main near Windy Hill Road and Dove Lane. When the connection between the 6-inch and 12-inch main was closed in the model for the calibration period, the hydraulic gradeline predicted by the model for Green Pastures more reasonably matched the field data. Model simulations with this connection open resulted in a predicted gradeline higher than the field measurements. It would be beneficial for this connection to be open and it is recommended that Monarch verify the connection and associated valving so that the system can operate with a connection between these two lines.

Pressures as recorded in the field are within 1.5 percent when compared with the hydraulic model. This level of accuracy is considered good for model calibration purposes.

Table 3.1 Hydraulic Model Calibration Summary
Plum Creek Water System Master Plan
Plum Creek Utility Company

Pressure Logger No.	Location	Model (psi)	Test (psi)	Percent Difference
1	Near Rolling Hills Estates	82.3	83.6	-1.6%
2	Near EST 2	61.5	61.7	-0.3%
3	Near South Buda No 1	71.2	70.4	1.1%
4	Near Dove Hills	88.9	86.9	2.3%
5	Near EST 1	66.9	65.3	1.1%
6	Near Green Pastures	74.9	73.4	2.0%

3.4 SCENARIOS

One of the benefits of the H_2OMAP Water hydraulic model is the ability to efficiently create different scenarios that can represent various demand or operational conditions. For this master plan, the model was developed to represent three infrastructure conditions:

- Scenario 1 – Existing infrastructure in the Plum Creek CC&N (pipes, storage facilities, pumps and wells). Compare field test data with model results.
- Scenario 2 – Evaluate the capability of the existing system to deliver water under maximum day and peak hour conditions.
- Scenario 3 – Evaluate fire flow delivery capabilities under current maximum day conditions.
- Scenario 4 – Evaluate the infrastructure and operating conditions that would be needed to add an undetermined additional water supply to serve new growth.
- Scenario 5 – Evaluate fire flow conditions at buildout to determine what would be required to provide fire flow service to the entire service area.
- Scenario 6 – Evaluate the interim planning years to determine appropriate phasing for planned water system infrastructure

WATER SYSTEM MASTER PLAN

A water master plan identifies the capital improvements that a water system should plan to construct to provide acceptable long-term service to customers. An understanding of the current water distribution system is important to determine limitations to existing infrastructure that can be resolved prior to recommending capital improvements. The hydraulic model is the tool that is used to predict hydraulic behavior in the distribution system. The performance criteria contained in Chapter 2 defines the measure of acceptability that the water distribution system is compared against.

This chapter contains the evaluation of the current water system. Key components of this chapter include:

- The size and capabilities of the current infrastructure are described.
- Limitations of the current infrastructure when compared with the performance criteria are identified.
- Infrastructure requirements needed by buildout are described.

4.1 WATER INFRASTRUCTURE IN 2010

The Plum Creek water system is currently supplied by a combination of wells and a water wholesaler. Table 4.1 lists the Plum Creek wells in 2010. In addition to the wells, Plum Creek may take up to 600,000 gallons per day from GBRA.

Table 4.1 Plum Creek Wells in 2010
Plum Creek Water System Master Plan
Monarch Utilities I LP

Name	Pumping Capacity, gpm	Notes
Well 1	358	Pump to ground storage at Site P2 – only Well 1 or Well 2 operated at one time
Well 2	448	
Well 3	625	Pump to ground storage at Site P4 – only Well 3 or Well 4 operated at one time
Well 4	505	

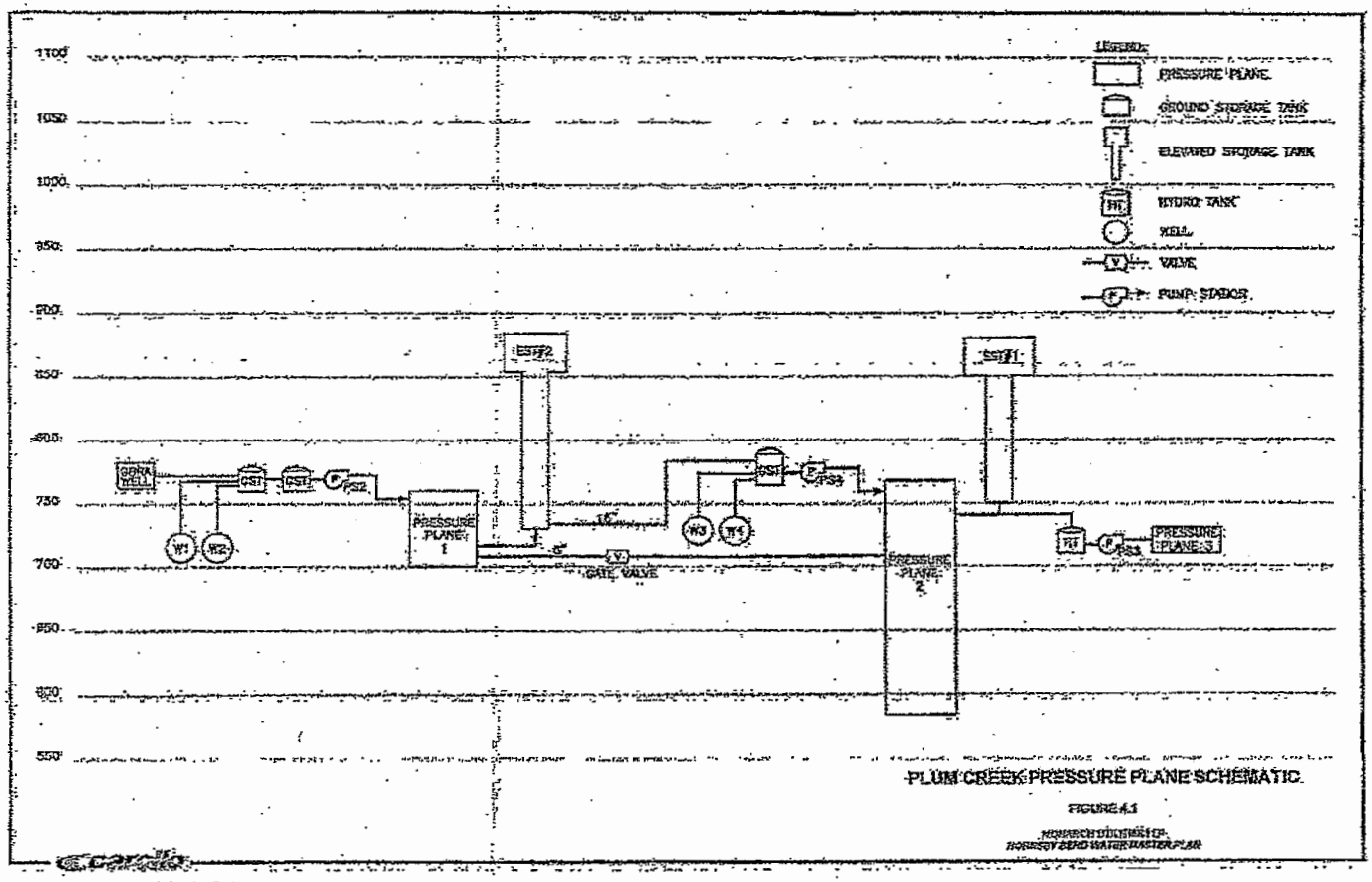
Plum Creek is served by multiple ground storage reservoirs and elevated storage tanks. Table 4.2 lists the names and sizes of these storage facilities.

Table 4.2	Plum Creek Storage Facilities in 2010 Plum Creek Water System Master Plan Monarch Utilities I LP					
Name	Description	Ground Elevation (ft)	Tank Height (ft)	Tank Top Elevation (ft)	Tank Diameter (ft)	Tank Volume (gal)
EST 1	Elevated Storage	750	130	880	-	250,000
EST 2	Elevated Storage	730	150	880	-	250,000
GST P2-1	Ground Storage	760	16	776	60	84,000
GST P2-2	Ground Storage	760	16	776	88.5	136,000
GST P4-1	Ground Storage	765	24	789	38.5	211,000
GST P4-2	Ground Storage	765	24	789	30	125,000
					Total (gallons)	1,056,000

Plum Creek has several booster pump stations that deliver water into the distribution system, or that increase pressures in portions of the distribution system where ground elevations or building heights require higher pressures. Table 4.3 lists the booster pump stations and the pumping capacities of each station.

Table 4.3	Plum Creek Booster Station Facilities in 2010 Plum Creek Water System Master Plan Monarch Utilities I LP			
Name	Description	Design Flow (gpm)	Design Head (ft)	Notes
Site P2	Pump 1	1,400	125	Pumps to EST 2
	Pump 2	1,400	125	
Site P4	Pump 1	400	120	Pumps to EST 1
	Pump 2	400	120	
	Pump 3	400	120	
	Pump 4	400	120	

The Plum Creek system is served primarily by two pressure planes, although there is one additional boosted area that functions as a separate plane. Figure 4.1 is a pressure plane schematic that shows the pressure planes in 2010 in relation to the storage and booster facilities that serve each pressure plane.



PLUM CREEK PRESSURE PLANE SCHEMATIC

FIGURE 4.1

MONARCH UTILITIES LTD.
THORNTON-BERO WATER MASTER PLAN

The Plum Creek system contains approximately 53 miles of water main. Table 4.4 shows the breakdown of water mains by diameter. Figure 4.2 is a map of the Plum Creek Water distribution system, showing the location of pipes and other infrastructure.

Table 4.4 Plum Creek Water Main Table
Plum Creek Water System Master Plan
Monarch Utilities I LP

Diameter (in)	Length (ft)
1.5	4,004
2	31,119
2.5	542
3	47,931
4	38,430
6	79,182
8	38,885
12	30,464
16	13,157
Total (ft)	281,707
(mi)	53.4

4.2 MASTER PLANNING EVALUATIONS

4.2.1 Evaluation of 2011 Infrastructure

The hydraulic model was used to evaluate the performance of the existing infrastructure under maximum day demand conditions. The data that was used to create the model shows several areas where homes are built and it would be expected that a water distribution main would be serving the area, although the data on the Plum Creek system does not show a pipe in the area. Reasonable assumptions were made to approximate the size and alignment of such mains and these mains were included in the hydraulic model. Figure 4.2 shows the layout of existing infrastructure and also indicates the location of suspected missing pipe data. If Plum Creek owns pipes in this area, then these pipes should be added to the distribution system data.

The hydraulic model was used to determine how well the distribution system provides water under maximum day demand plus fire flow conditions and peak hour conditions. The model results show that the existing facilities provide adequate pressures for both maximum day and peak hour demand conditions. However, the model results also identify several areas where maximum day plus fire flow demands could not be delivered. According to the performance criteria, single family residential areas have a fire flow requirement of 1,000 gpm, the requirement for multi-family housing is 1,500 gpm, and the requirement for

commercial and industrial areas is 3,000 gpm. Figure 4-3 shows areas in the system where pressures are inadequate to maintain 20 psi during fire flow conditions. These areas are served by mains between 2 and 6 inch, and the deficiencies could be resolved with additional looping and by upsizing some water mains.

The Texas Water Code does not mandate that retail water providers provide fire flow as a condition for holding a CC&N. Although Monarch is not required to provide fire flow to the Plum Creek system, many areas of the water distribution system can provide both maximum day demands as well as fire flows. Monarch can deliver maximum day demands and fire flows to the areas in the Plum Creek CC&N that serve the City of Kyle, Texas. Areas in the Plum Creek CC&N where fire flows cannot be achieved can be provided with maximum day and peak hour demands.

A condition assessment of Plum Creek's pump, well, and storage facilities was undertaken to determine the condition of this infrastructure and establish a plan to maintain this infrastructure. The results of this condition assessment are documented in Appendix C.

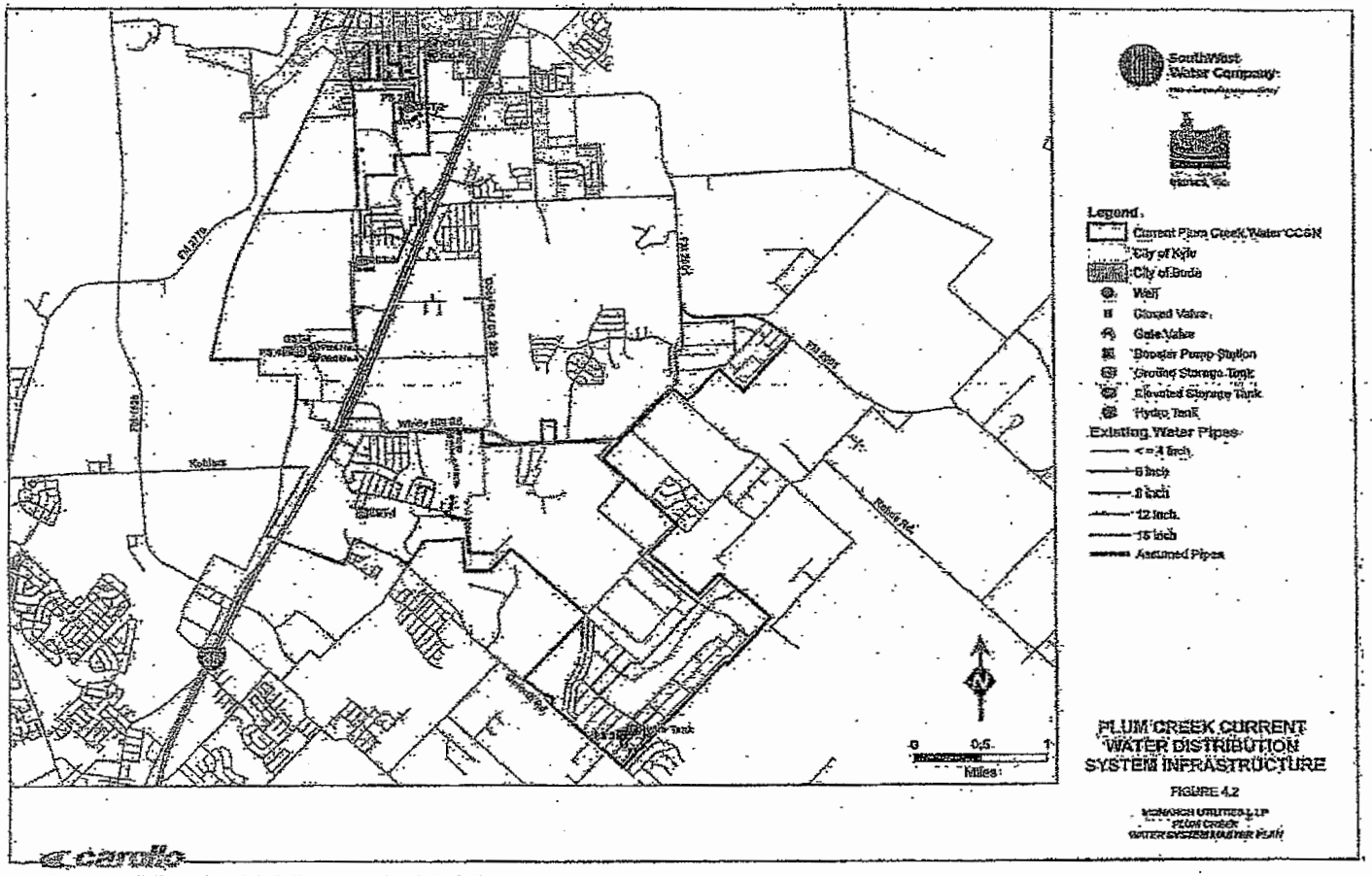
4.2.2 Water Supplies

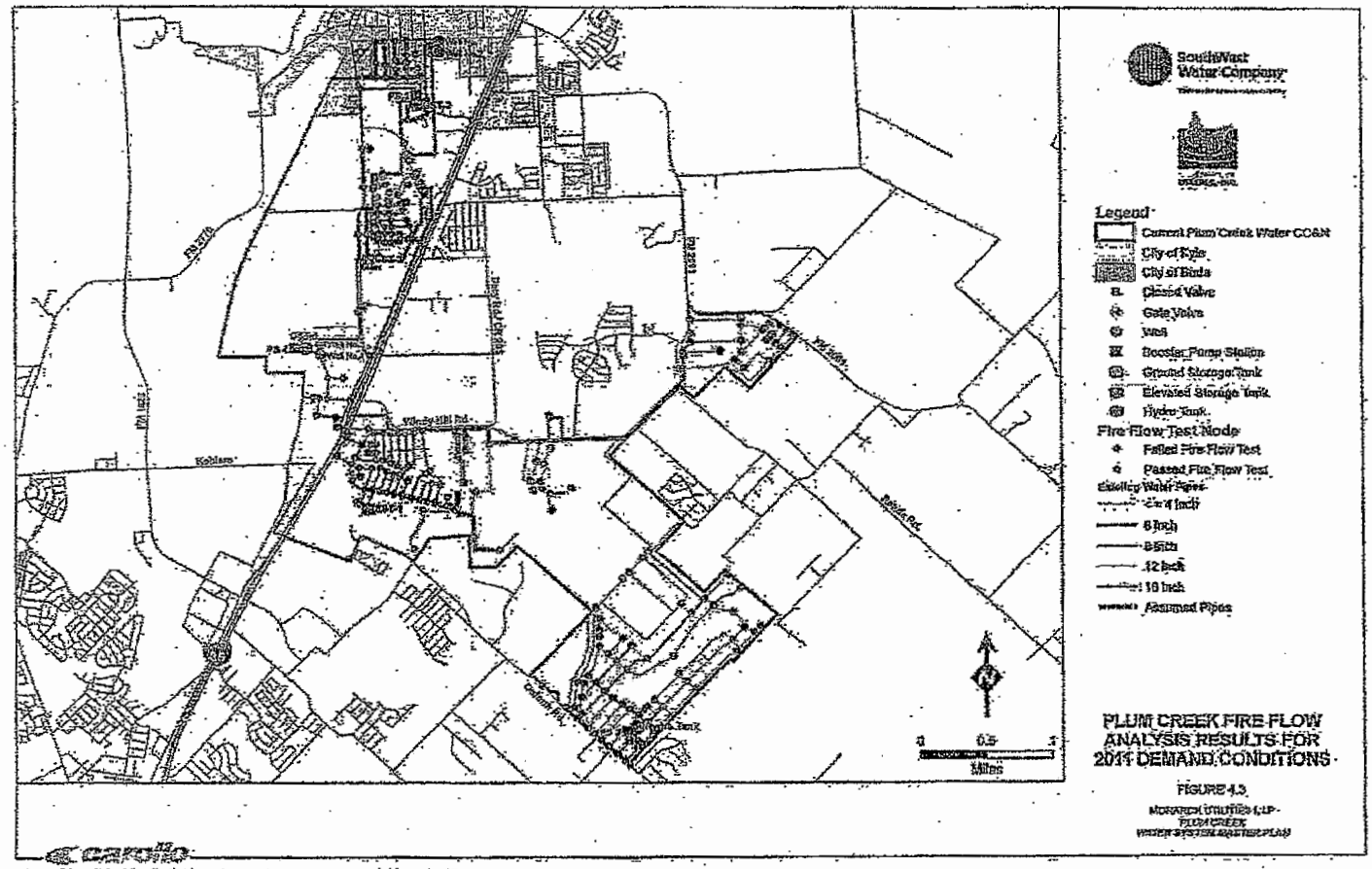
Currently, Plum Creek Wells 1, 2, 3, and 4 are in operation. However, only Well 1 or Well 2 can operate at any given time. Also, only Well 3 or Well 4 can operate at any given time. Monarch is currently exploring different water supply alternatives.

One alternative Monarch has been exploring is purchasing water from the City of Kyle, Texas, which is located south of the Plum Creek system with a portion of the City of Kyle located within the Plum Creek CC&N. Possible connection points with the City of Kyle include:

1. Connecting to the 12-inch main along the I-35 corridor
2. Connecting to the 12-inch main near EST 1
3. Connecting to the 8-inch main on the east end of Amberwood Loop.

Each of these alternatives would require approximately 4,000 feet of new water mains within the Plum Creek CC&N. A connection to one of the 12-inch mains would provide greater overall capacity and allow more operational flexibility in conveying water than would the 8-inch connection. The connection along the I-35 corridor would also provide additional benefits in serving the industrial and commercial development that is expected to occur in this area by providing capacity for fire flows.


SouthWest Water Company
Legend
Current Plum Creek Water CCN
City of Kyle
City of Buda
Well
Closed Valve
Gate Valve
Booster Pump Station
Ground Storage Tank
Elevated Storage Tank
Hydro Tank
Existing Water Pipes
<= 4 inch
6 inch
8 inch
12 inch
15 inch
Assumed Pipes
0
0.5
1
Miles
PLUM CREEK CURRENT WATER DISTRIBUTION SYSTEM INFRASTRUCTURE
FIGURE 4.2
MONARCH UTILITIES, LP
PLUM CREEK
WATER SYSTEM MASTER PLAN



PLUM CREEK FIRE FLOW ANALYSIS RESULTS FOR 2014 DEMAND CONDITIONS

FIGURE 4.3

MORARIO UTILITIES, LLP
PLUM CREEK
WATER SYSTEM MASTER PLAN

carollo

Table 4.5 shows a water supply plan assuming that the GBRA water supply provides the base water supply, and the wells are used to provide peak flows. By 2015, additional water supplies are needed to meet projected demands. It is estimated that an additional 2.5 mgd of supply will be needed by buildout with approximately 0.5 mgd of that additional supply needed by 2015. The additional supplies needed for the Plum Creek system may come from wells, another municipality, or other sources. Although Monarch is currently pursuing opportunities to acquire additional water sources, a final solution has not yet been determined. To provide the greatest benefit and operational flexibility, the new water source should be delivered to a point in the upper pressure plane. This will allow Monarch to control how the water is distributed to the lower pressure planes, and will provide the supply needed to meet the projected maximum day demands in the upper pressure plane. The water supply plan forms the foundation of the infrastructure master plan, and the remaining infrastructure requirements are based on this water supply plan.

Table 4.5 Plum Creek Water Supply Plan
Plum Creek Water System Master Plan
Monarch Utilities I LP

	Planning Year				
	2010	2015	2020	2025	2030
Living Unit Equivalents (LUEs)	2,390	3,222	4,161	5,335	6,580
Average Annual Demand (mgd) (1)	0.65	0.88	1.13	1.47	1.80
Plum Creek Alternative Minimum Capacity Requirement/Maximum Day Demand (mgd) (2)	1.51	2.04	2.62	3.39	4.17
Available Supply (mgd)					
Guadalupe Basin River Authority	0.50	0.50	0.50	0.50	0.50
Well 1 (358 gpm)	0.52	0.52	0.52	0.52	0.52
Well 2 (148 gpm) (3)	0	0	0	0	0
Well 3 (625 gpm) (3)	0	0	0	0	0
Well 4 (505 gpm)	0.73	0.73	0.73	0.73	0.73
Future Water Supply	0	0.50	1.00	1.75	2.50
Total Supply	1.75	2.25	2.75	3.50	4.25
Surplus/(Deficit) Based on Capacity Exception (mgd)	0.24	0.21	0.13	0.11	0.08

Notes:
(1) Plum Creek ADD is approximately 0.19 gpm/LUE.
(2) Plum Creek Alternative Minimum Capacity Requirement is equal to projected MDD (0.44 gpm/LUE).
(3) Assumed out of service (well with least capacity assumed in service at each site: Well 1/Well 2 and Well 3/Well 4).

4.2.3 Pressure Planes

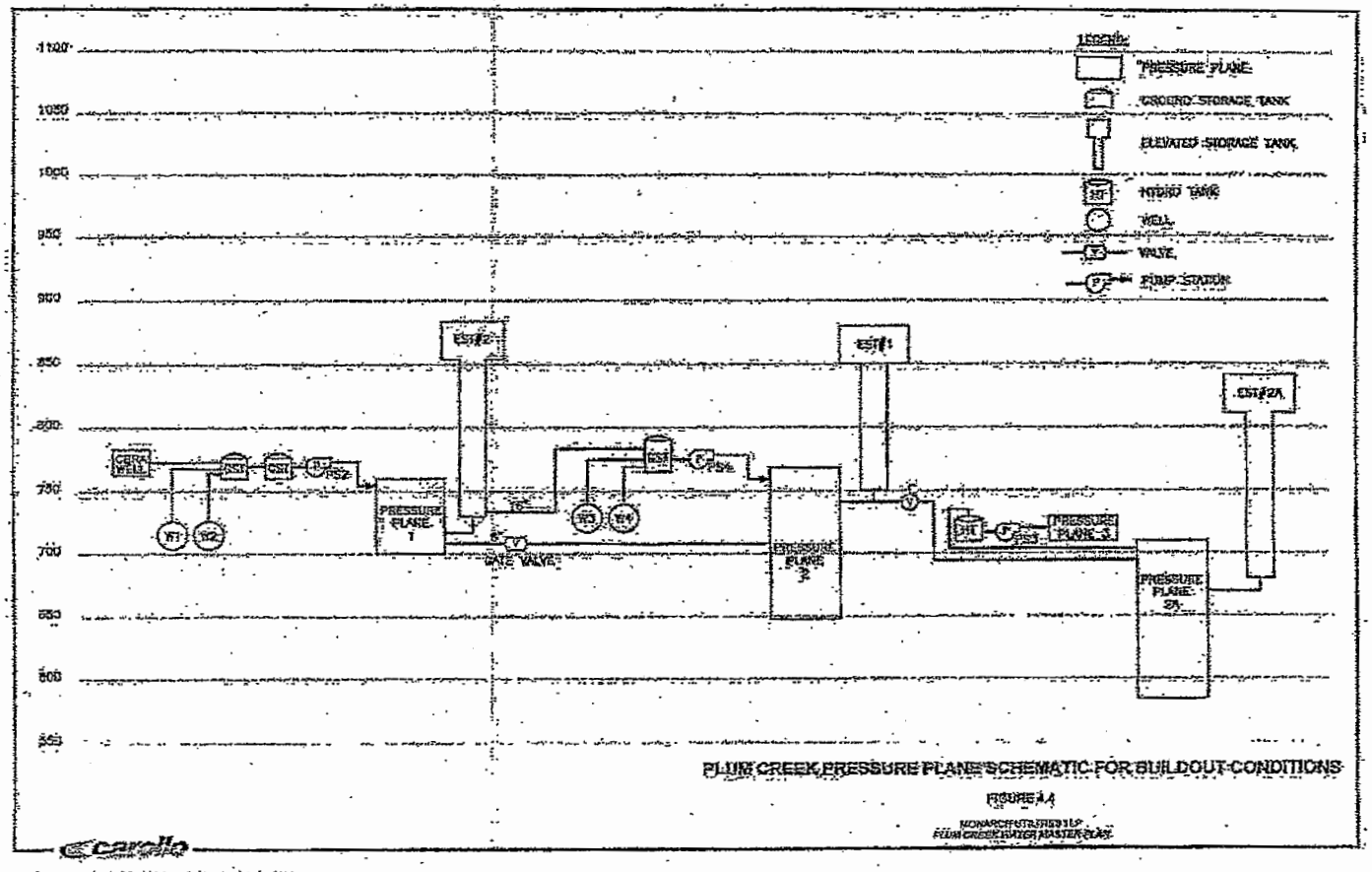
Figure 4.4 shows the pressure plane schematic with the pressure planes and the water supply infrastructure that will deliver water to each pressure plane at buildout, assuming an additional well will provide additional water supplies. Once the distribution system pipe improvements outlined in the following sections are implemented, the model predicts that some pressures in the southeastern portion of the service area may experience pressures above 100 psi during low demand periods. Because of this, it is recommended that the lower pressure plane be divided into two pressure planes with the lowest pressure plane serving the Dove Hill, Green Pastures, Rolling Hills Estates and the proposed Phillips Ranch development. This pressure plane would be served by two pressure reducing valves. The first would be located on Windy Hill Road near Dove Lane where the existing 12-inch and 8-inch mains connect and the second would be located on the existing 8-inch main on County Road 205 and Amberwood Loop.

4.2.4 Storage

Storage requirements have been identified for each planning year to buildout. Table 4.6 shows the storage requirements for the Plum Creek CC&N. Based on existing storage facilities and Plum Creek's capacity exception, the Plum Creek system has sufficient storage capacity for all planning years. However, one additional 0.25 MG elevated storage tank is recommended for the Phillips Ranch area to serve the proposed new pressure plane in the southeast portion of the service area. With this elevated storage plus the storage in the upper pressure planes, fire flows can be provided to the Phillips Ranch residences and elementary school.

The hydraulic model shows that when the additional 0.25 MG of elevated storage is added to the system and the lower (southeastern) pressure plane is established, pressures in the Green Pasture Subdivision upstream of the hydro system are approximately 40 psi at peak hour. This suggests that the hydro system may be unnecessary after these system changes take place. A field test to verify pressures should be conducted prior to decommissioning the hydro system.

Also, it is recommended that an additional 0.5 MG of ground storage be added to the GST P4 site in conjunction with recommended additional booster pumping capacity at this site as described in the following section. The reason for this additional ground storage is because the GST P4 site is adjacent to an area where commercial and industrial development is expected to occur and in order to provide commercial fire flows (3,000 gpm for 3 hours) including Kyle within the CC&N, approximately 0.54 MG of storage is required. In addition, Monarch has the option of sending water from EST 2 to GST P4 via a 16-inch transmission main that can then be sent to the lower pressure planes. Additional storage (and booster pumping capacity) will allow Monarch more operational flexibility to move water from the upper pressure plane to the lower pressure plane. This will be particularly important if the future Plum Creek water supplies are delivered to the upper pressure plane.



PLUM CREEK PRESSURE PLANE SCHEMATIC FOR BUILDOUT CONDITIONS

FIGURE 4.4

MONARCH PUTNAM 1 LP
PLUM CREEK WATER MASTER PLAN

carollo

If the future Plum Creek water supplies are delivered to the lower pressure plane (served by GST P4), then the recommended additional storage and booster pumping capacity at GST P4 may need to be configured to supply water to the upper pressure plane.

Table 4.6 Water Storage Requirements for the Plum Creek CC&N
Plum Creek Water System Master Plan
Monarch Utilities I LP

	Volume As Constructed	Planning Year				
		2010	2015	2020	2025	2030
Living Unit Equivalents (LUEs)		2,390	3,222	4,131	5,335	6,550
Storage Requirements (MG)						
Elevated Storage (1)	-	0.2	0.2	0.3	0.4	0.5
Total Storage (2)	-	0.3	0.5	0.6	0.8	1.0
Storage Facilities (MG)						
GST P2-1	0.08	0.08	0.08	0.08	0.08	0.08
GST P2-2	0.14	0.14	0.14	0.14	0.14	0.14
GST P4-1	0.21	0.21	0.21	0.21	0.21	0.21
GST P4-2	0.13	0.13	0.13	0.13	0.13	0.13
EST 1	0.25	0.25	0.25	0.25	0.25	0.25
EST 2	0.25	0.25	0.25	0.25	0.25	0.25
Additional Elevated Storage	-	0	0	0.25	0.25	0.25
Additional Ground Storage	-	0	0	0.50	0.50	0.50
Available Elevated Storage	0.50	0.50	0.50	0.75	0.75	0.75
Available Ground Storage	0.56	0.56	0.56	1.06	1.06	1.06
Total Available Storage	**1.06**	**1.06**	**1.06**	**1.81**	**1.81**	**1.81**
Elevated Storage Surplus/(Deficit)	-	0.3	0.3	0.4	0.4	0.3
Total Storage Surplus/(Deficit) (3)	-	0.7	0.5	1.2	1.0	0.8

Notes:
(1) 73 gal/LUE
(2) 145 gal/LUE
(3) Additional storage is required to provide commercial fire flow within the City of Kyle and fire flow to Phillips Ranch.

4.2.5 Pump Stations

The booster pumping requirements for the Plum Creek CC&N are shown in Table 4.7 for the Plum Creek water supply plan. Currently the system has sufficient booster pumping capacity to meet the project demands through 2015 assuming no fire flow requirement. For planning years 2020 and beyond, additional booster pumping capacity will be required. The water supply plan presented previously in Table 4.5 shows that additional supplies will be needed by 2015 to meet demands. These additional supplies may require additional booster pumping capacity to deliver the source water to the Plum Creek distribution system.

If a new well is added to the system, Monarch should consider making the well connect directly to the distribution system in order to use the well pumping capacity to make up a portion, if not all, of the additional booster pumping that is required.

Table 4.7 Pumping Requirements in Each Planning Year through Buildout
Plum Creek Water System Master Plan
Monarch Utilities I LP

	Design Capacity As Constructed	Planning Year				
		2010	2015	2020	2025	2030
Living Unit Equivalents (LUEs)		2,890	3,222	4,131	5,335	6,580
Average Annual Demand (mgd)	-	0.85	0.88	1.13	1.47	1.80
Booster Pumping Requirements (mgd) (1)						
Plum Creek Alternative Minimum Capacity Requirement/Peak Hour Demand (mgd) (2)	-	2.57	3.47	4.46	5.77	7.09
Available Firm Booster Pumping Capacity (mgd)						
Site PS 2	2.0	2.0	2.0	2.0	2.0	2.0
Site PS 4	1.72	1.72	1.72	1.72	1.72	1.72
Additional PS 4 Capacity	-			1.72	3.45	3.45
Total Firm Booster Pumping Capacity		3.72	3.72	5.44	7.17	7.17
Firm Booster Pumping Surplus/(Deficit)		1.15	0.25	0.99	1.4	0.08

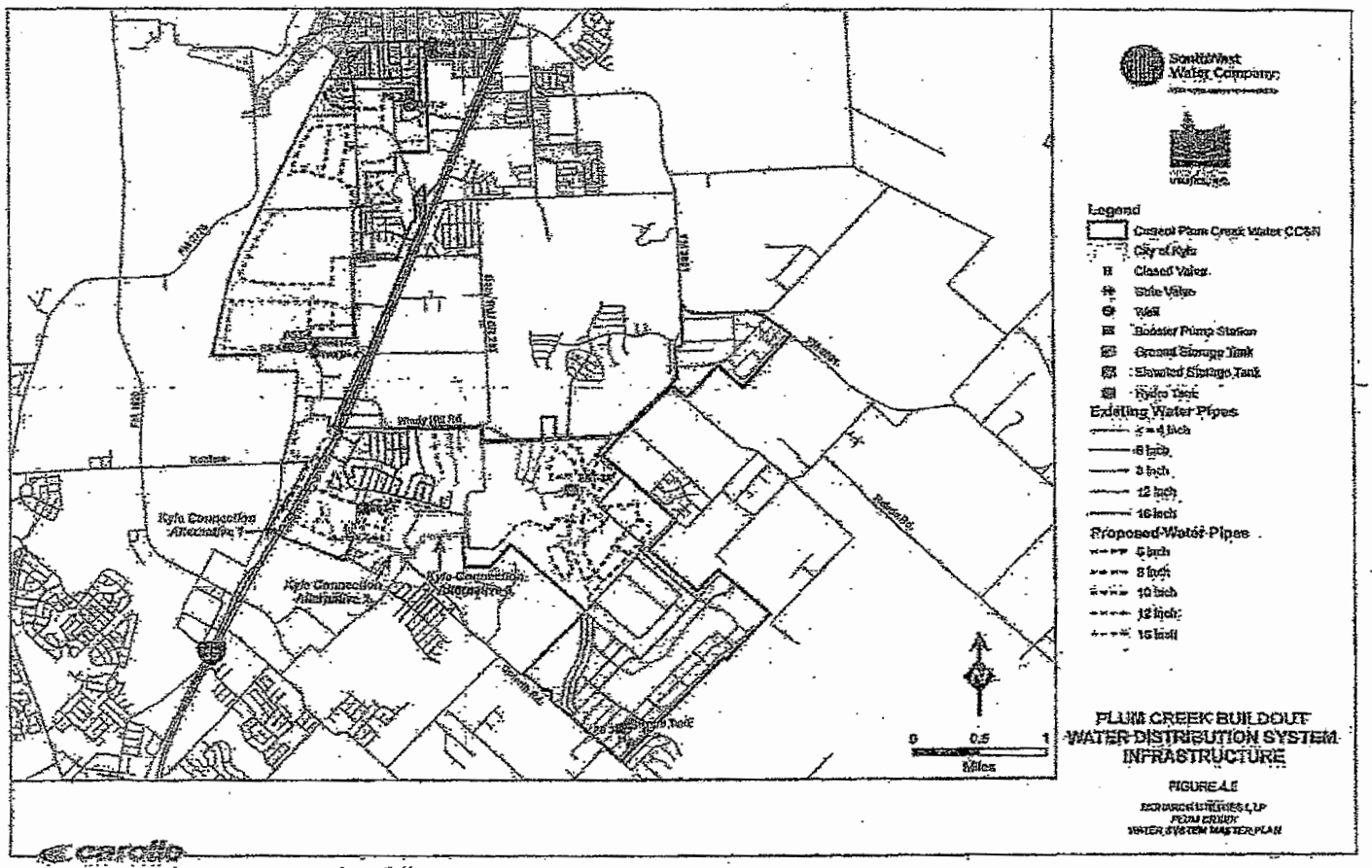
Notes:
(1) TCEQ 290.45 (D)(iii).
(2) Plum Creek Alternative Minimum Capacity Requirement is equal to projected MDD (0.44 gpm/LUE) x 1.7

Additional booster pumping capacity is recommended for the PS 4 site as explained previously. The current firm capacity of the PS 4 site is 1,200 gpm, which is less than the 3,000 gpm needed to provide commercial fire flows. It is recommended that the additional booster pumping capacity at the PS 4 site be timed to occur once the commercial and industrial development begins in the lower pressure plane in the western Plum Creek area.

Commercial and industrial development is also expected to occur in the upper pressure plane in the western Plum Creek area; therefore additional booster pumping capacity would also be required for the upper pressure plane. If a well is added and configured to pump directly into the distribution system in the upper pressure plane, the well pumping capacity could be used to offset the additional booster pumping capacity that is required.

4.2.6 Water Mains

Figure 4.5 identifies the water mains that are needed by buildout to provide service to the Plum Creek CC&N. There are several areas in the north portion of the service area that are expected to have commercial and industrial development in the land use plan.


SouthWest Water Company
Legend
Closed Valve
Well
Booster Pump Station
Ground Storage Tank
Elevated Storage Tank
Existing Water Pipes
4 inch
6 inch
8 inch
12 inch
16 inch
Proposed Water Pipes
6 inch
8 inch
10 inch
12 inch
16 inch
Kyle Connection Alternative 1
Kyle Connection Alternative 2
Kyle Connection Alternative 3
0
0.5
1
Miles
PLUM CREEK BUILDOUT
WATER DISTRIBUTION SYSTEM
INFRASTRUCTURE
FIGURE 4.6
SOUTHWEST WATER COMPANY, LP
PLUM CREEK
WATER SYSTEM MASTER PLAN
carollo

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CAPITAL IMPROVEMENT PLAN

5.1 UNIT COSTS

Unit costs have been developed for the capital improvements that are being recommended for this master plan. This cost estimate was prepared in accordance with the guidelines of the AACE International (the Association for the Advancement of Cost Engineers) for a Class 5 estimate. According to the definitions of AACE International, the Class 5 estimate is defined as:

> *"CLASS 5 ESTIMATE: Generally prepared based on very limited information, where little more than proposed plant type, its location, and the capacity are known. Strategic planning purposes, such as but not limited to, market studies, assessment of viability, evaluation of alternative schemes, project screening, location and evaluation of resource needs and budgeting, long range capital planning, etc. Some examples of estimating methods used would be estimating methods such as cost/capacity curves and factors, scale up factors, parametric and modeling techniques. Typically, very little time is expended in the development of this estimate. The typical expected accuracy range for this class estimate is -20 percent to -50 percent on the low side and +30 percent to + 100 percent on the high side."*

Table 5.1 lists the unit costs that have been used to calculate construction costs. To obtain project costs, a factor of 1.3 is applied to the construction cost to account for engineering design, construction management and a contingency. Costs are based on the Engineering News-Record 20-City Average Construction Cost Index (ENR CCI). The May 2011 ENR CCI is 9035.

5.2 CAPITAL PLAN

Table 5.2 lists the capital improvements that are being recommended as a part of this master plan. Capital improvements are normally phased into five-year planning periods, however the actual timing of these capital improvements will depend on the actual growth rate. Figure 5.1 shows the location of these different improvement projects. In general the pipeline recommendations are intended to include the major transmission and distribution mains that form the backbone of the system.

Additional mains will be needed within individual developments. The construction costs for installing water infrastructure located within new development tracts is the responsibility of the developer. A developer will also pay Monarch's capital recovery cost per added connection to contribute to the expense of infrastructure needed to serve a development, where the infrastructure is not located within the development and may also serve other customers.

Table 5.1 Unit Costs
Plum Creek Water System Master Plan
Monarch Utilities LLP

Pipelines

Diameter (in)	Material	Pipe Cost ($/LF)	Excavation & Backfill 5-10 ft Deep ($/LF)	Pavement Replacement ($/LF)	Fittings and Valves ($/LF)	Contractor Overhead and Profit (15%) ($/LF)	Total Pipe Construction Cost ($/LF)	Engineering, Construction Management, Administration (30%) ($/LF)	Total Pipe Project Cost ($/LF)
8	PVC/C905	$16.38	$32.05	$31.73	$4.65	$12.72	$97.53	$29.26	$127
12	PVC/C905	$32.30	$32.58	$31.73	$5.56	$15.34	$117.61	$35.28	$153
16	PVC/C905	$33.69	$39.30	$31.73	$7.46	$16.85	$129.04	$38.71	$168
18	PVC/C905	$37.85	$40.82	$31.73	$9.05	$17.84	$136.78	$41.03	$178
20	PVC/C905	$51.14	$42.68	$31.73	$10.61	$20.42	$156.59	$46.98	$204
24	DIP	$118.89	$44.39	$38.90	$15.01	$32.58	$249.76	$74.93	$325

Ground Storage Reservoirs

Capacity (MG)	Estimated Construction Cost ($/gal)	Engineering, Construction Management, Administration (30%) ($/gal)	Reservoir Project Cost ($/gal)	Total Reservoir Project Cost
0.75	$1.15	$0.35	$1.50	$1,121,250
1	$1.15	$0.35	$1.50	$1,495,000
1.5	$1.15	$0.35	$1.50	$2,242,549

Elevated Storage Reservoirs

Capacity (MG)	Estimated Construction Cost ($/gal)	Engineering, Construction Management, Administration (30%) ($/gal)	Reservoir Project Cost ($/gal)	Total Reservoir Project Cost
0.25	3.00	$0.90	$3.90	$975,000
0.50	2.00	$0.60	$2.60	$1,300,000

Table 5-1 Unit Costs
Plum Creek Water System Master Plan
Monarch Utilities I LP

Booster Pump Stations							
Booster Station Size (mgd)	No. of Pumps (#)	Design Flow per Pump (gpm)	Firm Booster Station Capacity (gpm)	Estimated Construction Cost ($/gal)	Engineering, Construction Management, Administration (30%) ($/gal)	Booster Pump Station Project Cost ($/gal)	Total Booster Pump Station Project Cost
3	3	1,100	2,200	$0.49	$0.15	$0.64	$1,921,991
4	3	1,400	2,800	$0.39	$0.12	$0.50	$2,013,514
Check Valve							
12-inch Check Valve Project Cost			$100,000				
ENR 20 City CCI = 9035 (May 2011)							

Table 5.2 Phased Capital Improvements May 25 - 2011 Distribution System / Transmission Pipes
Plum Creek Water System Master Plan
Monarch Utilities LLP

Project Group	Description	Diameter (in)	Approximate Length (ft)/Quantity	Unit Project Cost ($/LF)	Project Cost ($)	Trigger
1	Upper Pressure Plane Mains	6	5,094	$127	$636,000	Infill development - Developer responsibility
		8	8	$127	$1,000	
		12	14,786	$153	$2,261,000	Establishment of significant Commercial/Industrial development - Developer responsibility
2	Middle Pressure Plane Mains	8	15,933	$127	$2,020,000	Infill development - Developer responsibility
		10	7,307	$153	$1,118,000	Establishment of significant Commercial/Industrial development - Developer responsibility
		12	17,104	$153	$2,615,000	
		16	3,468	$168	$582,000	
		12	4,090	$153	$612,000	Future water supply connection with City of Kyle, TX - Monarch responsibility
		12	1,750	$153	$268,000	12-in water line extension on Windy Hill Rd to Phillips Ranch - Monarch responsibility
3	Lower Pressure Plane Mains	6	1,351	$1,270	$1,716,000	Infill development - Developer responsibility
		8	34,582	$127	$4,365,000	Infill/new development in Phillips Ranch - Developer responsibility
		12	14,709	$153	$2,249,000	
		8	3,405	$127	$432,000	Establish Pressure Plane 2A - Monarch responsibility
4	Pressure Plane Boundary PRV	6	2	$50,000	$100,000	Construction of PC East EST to divide the current lower pressure plane - Monarch responsibility
Total Pipe Improvements					$18,995,000	
Booster Stations and Storage Reservoirs						

Location	Number / Capacity of Pumps or Number of Reservoirs	Firm Capacity (mgd) / Tank Size (MG)	Unit Project Cost ($/gal)	Project Cost ($)	Phase	Trigger
PS 4 Booster Station Upgrade	3/1,200 gpm	4.0	$0.39	$1,549,000	2030	Establishment of significant Commercial/Industrial development to provide fire flows - Monarch responsibility
GST PS 4 Ground Storage	1	0.5	$1.50	$750,000	2015	
PC East Elevated Storage	1	0.25	$3.90	$975,000	2020	Construction of Phillips Ranch Development - Developer responsibility
Total Booster Pump Station and Storage Reservoir Improvements				$3,274,000		
Total All Capital Improvements				$22,269,000		

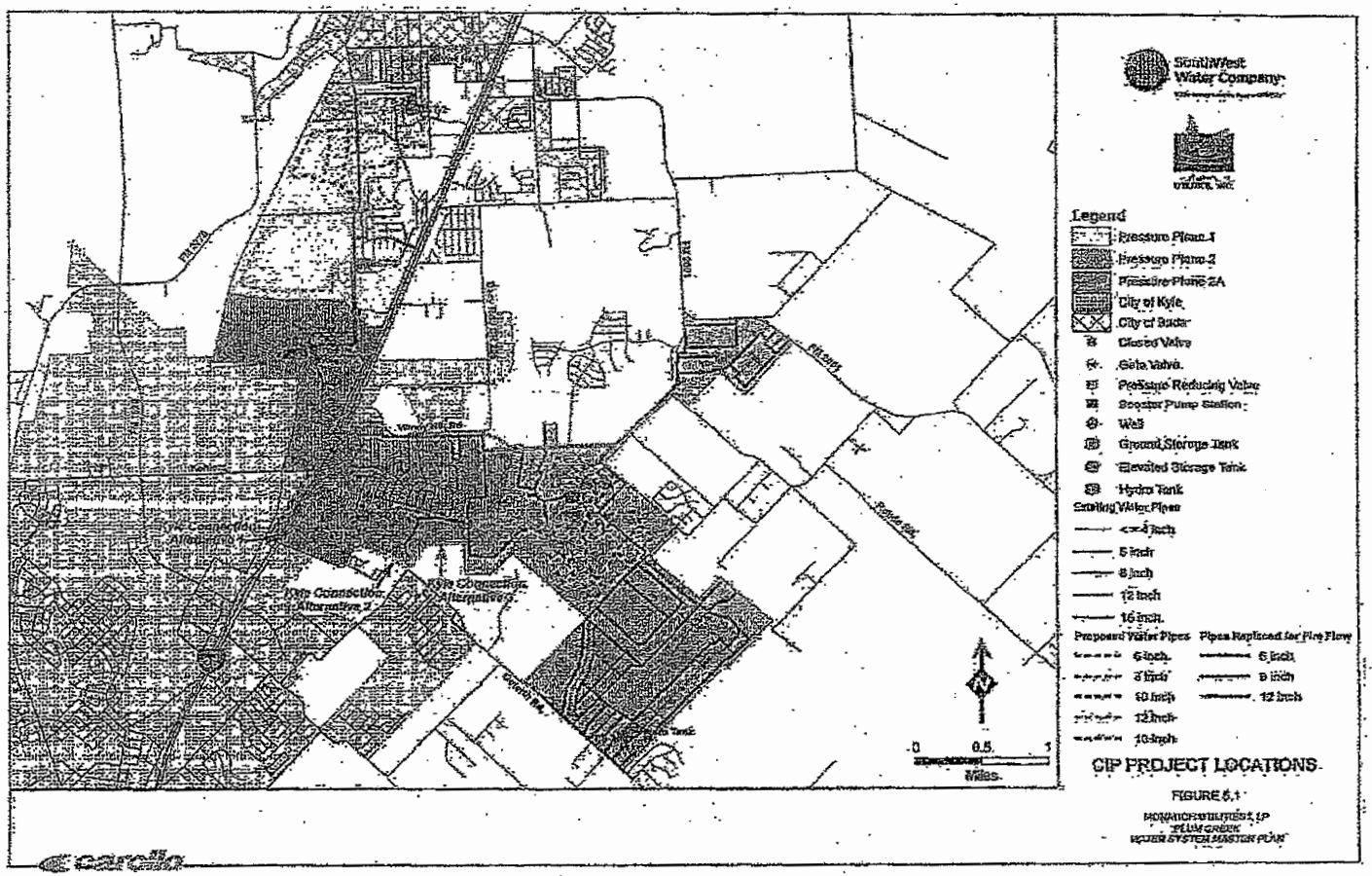
SouthWest Water Company
Legend
Pressure Plane 1
Pressure Plane 2
Pressure Plane 2A
City of Kyle
City of Buda
Closed Valve
Gate Valve
Pressure Reducing Valve
Booster Pump Station
Well
Ground Storage Tank
Elevated Storage Tank
Hydro Tank
Existing Water Pipes
4 inch
6 inch
8 inch
12 inch
16 inch
Proposed Water Pipes
6 inch
8 inch
10 inch
12 inch
16 inch
Pipes Replaced for Fire Flow
6 inch
8 inch
12 inch
Kyle Connection Alternative 1
Kyle Connection Alternative 2
0
0.5
1
Miles
CIP PROJECT LOCATIONS
FIGURE 5.1
MONARCH UTILITIES, LP
PLUM CREEK
WATER SYSTEM MASTER PLAN

Table 5.2 lists the capital improvements that are recommended in this water system master plan and are grouped by project. Some of the capital improvements shown are the responsibility of the developer and are identified as such. Infrastructure to be paid for and installed by a developer are not included in the Monarch capital cost recovery calculations summarized in the following section. Table 5.3 contains a summary of the repair and replacement recommendation from the condition assessment analysis. The results of the condition assessment are included in Appendix C.

Table 5.3 Repair and Replacement Summary Recommendations
Plum Creek Water System Master Plan
Monarch Utilities I LP

Item	Recommendation
Well 1	Recondition facility including PLC and RVSS
Goforth GST	If brought back into service, complete inspection recommended
Dove Hills GST	If brought back into service, complete inspection recommended and replacement of leaking underground check valve and reconditioning of storage area
General Repair	Adjust and anchor pipe supports throughout system
General Repair	Repaint piping or replace corroded piping throughout system

Table 5.4 lists a summary of new and upsized pipes that would be needed to provide fire flows in several areas of the Plum Creek service area. These projects are grouped by development served and are based on the fire flow analysis for 2011 conditions shown previously in Figure 4.3. The location of these new and upsized pipes is shown in Figure 5.1.

Table 5.4 Phased Capital Improvements to Provide Fire Flows
Plum Creek Water System Master Plan
Monarch Utilities I LP

Project Group	Description	Diameter (in)	Approximate Length (ft) /Quantity	Unit Project Cost ($/LF)	Project Cost ($)
1	PC Upper Pressure Plane Mains	6	1,666	$127	$211,000
2	Green Pastures	6	7,557	$127	$960,000
		8	49,163	$127	$6,234,000
		12	10,435	$153	$1,595,000
3	Rolling Hills Estates	6	1,194	$127	$152,000
		8	17,220	$127	$2,183,000
		12	4,089	$153	$625,000
4	Dove Hills	6	1,883	$127	$239,000
		8	19,873	$127	$2,494,000
				Total Pipe Improvements	$14,693,000

5.3 CAPITAL COST RECOVERY

The capital recovery fee is calculated as the Plant Net Book Value less net Capital In Aid of Construction (CIAC) plus the cost of capital improvements required in the near term, divided by the total number of customers that are expected to be added by buildout of the service area. Texas regulations allow utilities to charge developers this capital recovery fee to "buy into" the water system to help pay for the capacity in the water supply system needed to service water customers. Monarch reported that the Plum Creek Plant Net Book Value less CIAC is currently $6,102,384. The capital improvements identified in this master plan study that are required to serve the Plum Creek customers and is included in the capital recovery fee. These costs do not include the additional mains needed to supply fire flow or the cost of an additional water supply. The total known capital costs that need to be recovered in some form is $9,813,384 (net book value plus costs of Table 5.5).

Table 5.5 Capital Cost Improvements Required to Serve Growth in the Plum Creek Water CC&N
Plum Creek Water System Master Plan
Monarch Utilities I LP

Project	Estimated Capital Cost in May 2011 Dollars
PS 4 Booster Station Upgrade	$1,549,000
GST PS4 Ground Storage	$750,000
PC East Waterline Extension to Phillips Ranch	$268,000
Lower Pressure Plane Distribution System Loop	$432,000
Future Water Supply Connection with City of Kyle, TX	$612,000
Pressure Plane Boundary PRV	$100,000
Total	$3,711,000

Monarch reports that Plum Creek currently has 2,390 LUEs and an additional 4,190 LUEs are anticipated by buildout, for a total of 6,580 customers in the Plum Creek service area. Therefore, the capital recovery cost per connection is $2,342.

5.4 RECOMMENDATIONS

The following recommendations are made for this master plan:

1. The repair and replacement actions itemized in Appendix C and summarized in Table 5.3 should be implemented.
2. Monarch should identify additional water supply options as soon as possible. Supply options should consider the purchase cost of the water as well as the point of delivery to the Plum Creek system. Because this future supply is not defined at the publishing of this master plan report, it was assumed that the new water supplies would be delivered to the Plum Creek upper pressure plane near the I-35 freeway. The pipeline

necessary to convey the new water supplies from the City of Kyle to Plum Creek was included in this master plan. The cost of the transmission pipeline only includes the area within the Plum Creek CC&N because the exact tie-in point to the Kyle system was unknown.

A new well should be evaluated as a potential future water supply for the upper pressure plane. Monarch should evaluate the feasibility of connecting this well directly to the distribution system along the 16-inch/12-inch mains near site GST P2. Doing this may make up a portion of the needed booster pumping capacity that is required in the upper pressure plane to meet estimated maximum day demands and fire flows.

3. The CIP recommendations for new growth projects outlined in Table 5.2 should be implemented. Each project should be phased to coincide with planned construction so that service can be provided to growth areas.

4. If Monarch decides to provide fire flow service to the southeastern area, it is recommended that some existing mains be upsized and some additional mains be installed per the summary shown in Table 5.4 and Figure 5.1.

5. To provide fire flow in the upper pressure plane (Pressure Plane 1), additional pumping capacity is required. If a new well or another source is configured to connect directly to the distribution system in the upper pressure plane, then this added capacity may make up a portion of the needed booster pumping capacity in the upper pressure plane.

6. An additional 0.5 MG of storage should be added to Pressure Plane 2 at site GST P4 in order to provide the required fire flow volume for a 3,000 gpm fire flow for a three-hour duration (0.54 mg). An additional 2,400 gpm (Firm) booster pumping capacity is recommended for Site P4 by buildout to meet estimated maximum day demands and fire flow demands.

   If the future Plum Creek water supply is delivered to Pressure Plane 2 (e.g., from the City of Kyle), then the additional storage and booster pumping at site GST P4 may be needed to supply water to the upper pressure plane.

7. An additional 0.25 MG of elevated storage is recommended when the lower pressure plane (2A) is established. This elevated storage will serve the Phillips Ranch development and provide increased reliability for the southeastern area of the Plum Creek system. When this additional elevated storage is operational, the small hydro-system in the Green Pastures Subdivision may not be necessary. A pressure test should be done at this time to determine if pressures are sufficient upstream of the hydro-system to allow the hydro-system to be decommissioned.

8. Improvements to Wells 1 and 2 infrastructure and controls should be made so that these two wells can operate simultaneously when needed.

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Appendix A

DETAIL MAPS OF THE PLUM CREEK DISTRIBUTION SYSTEM

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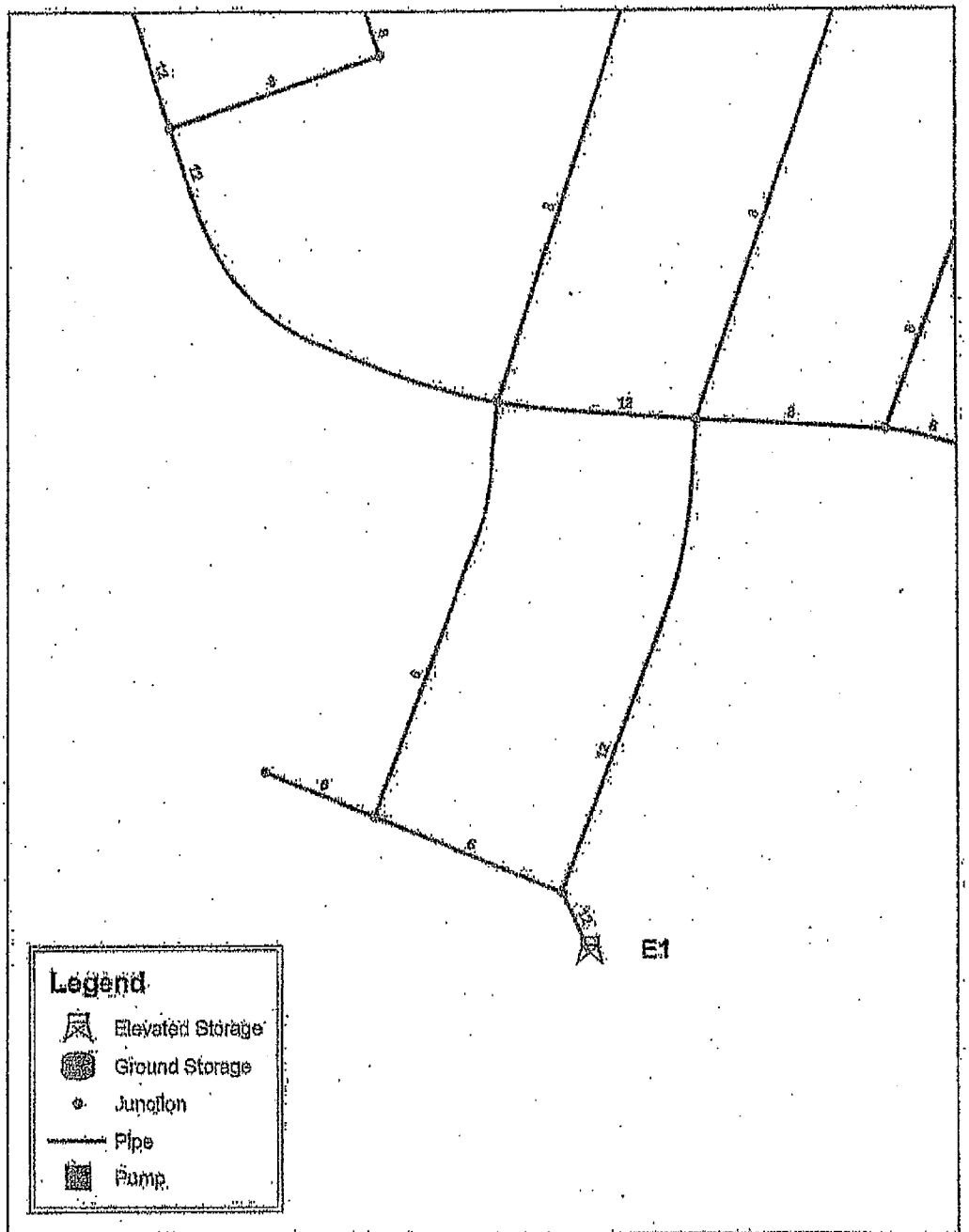
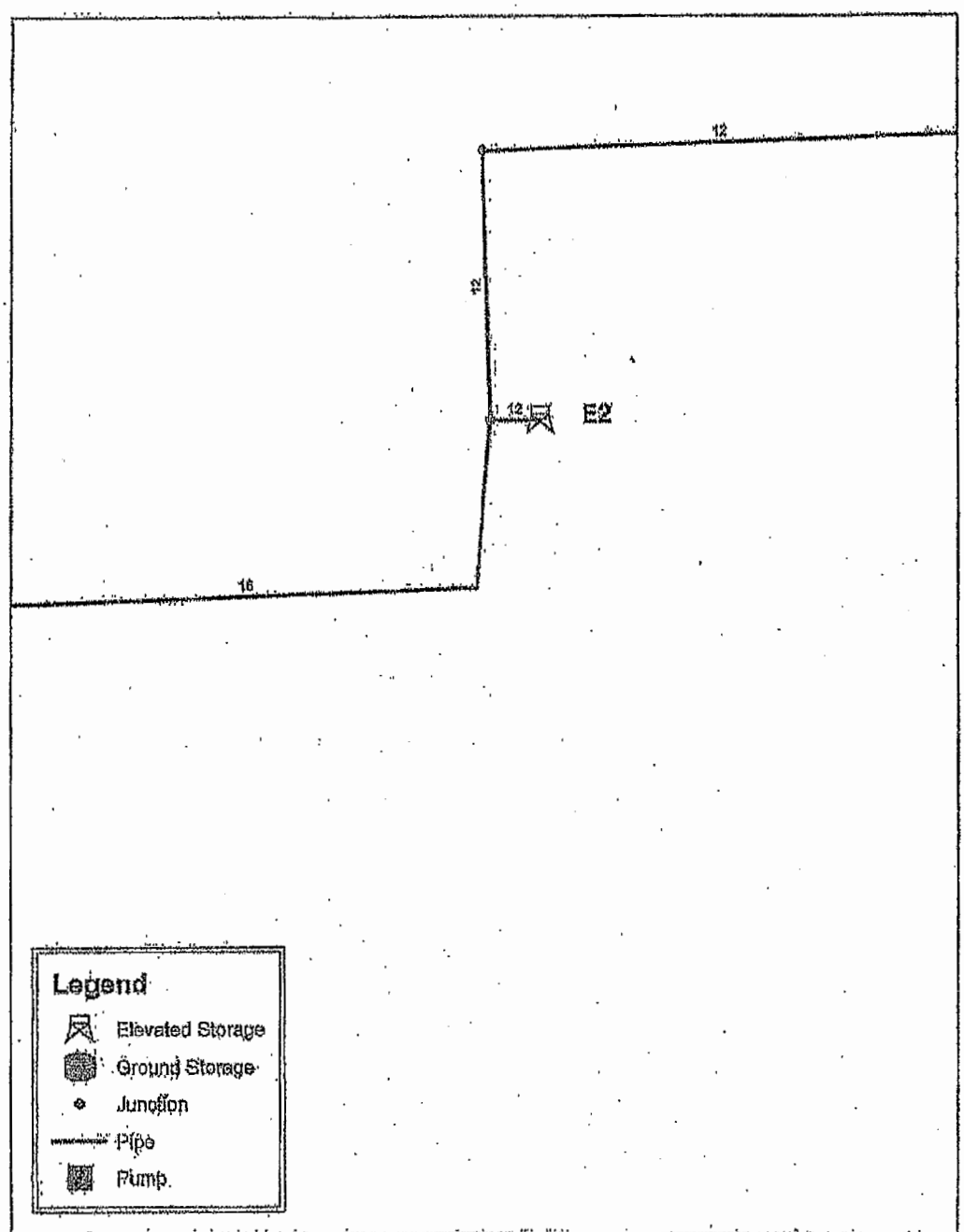
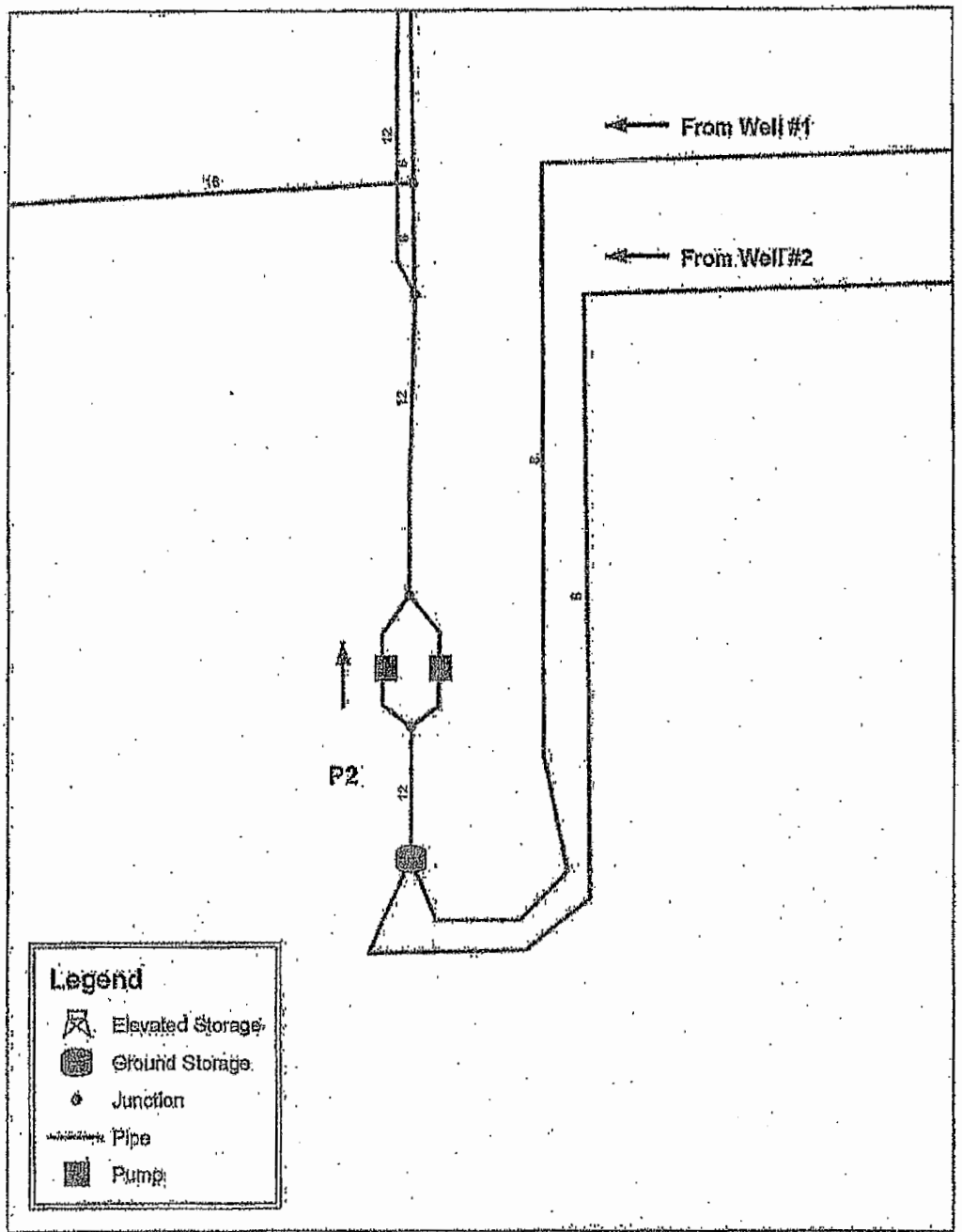


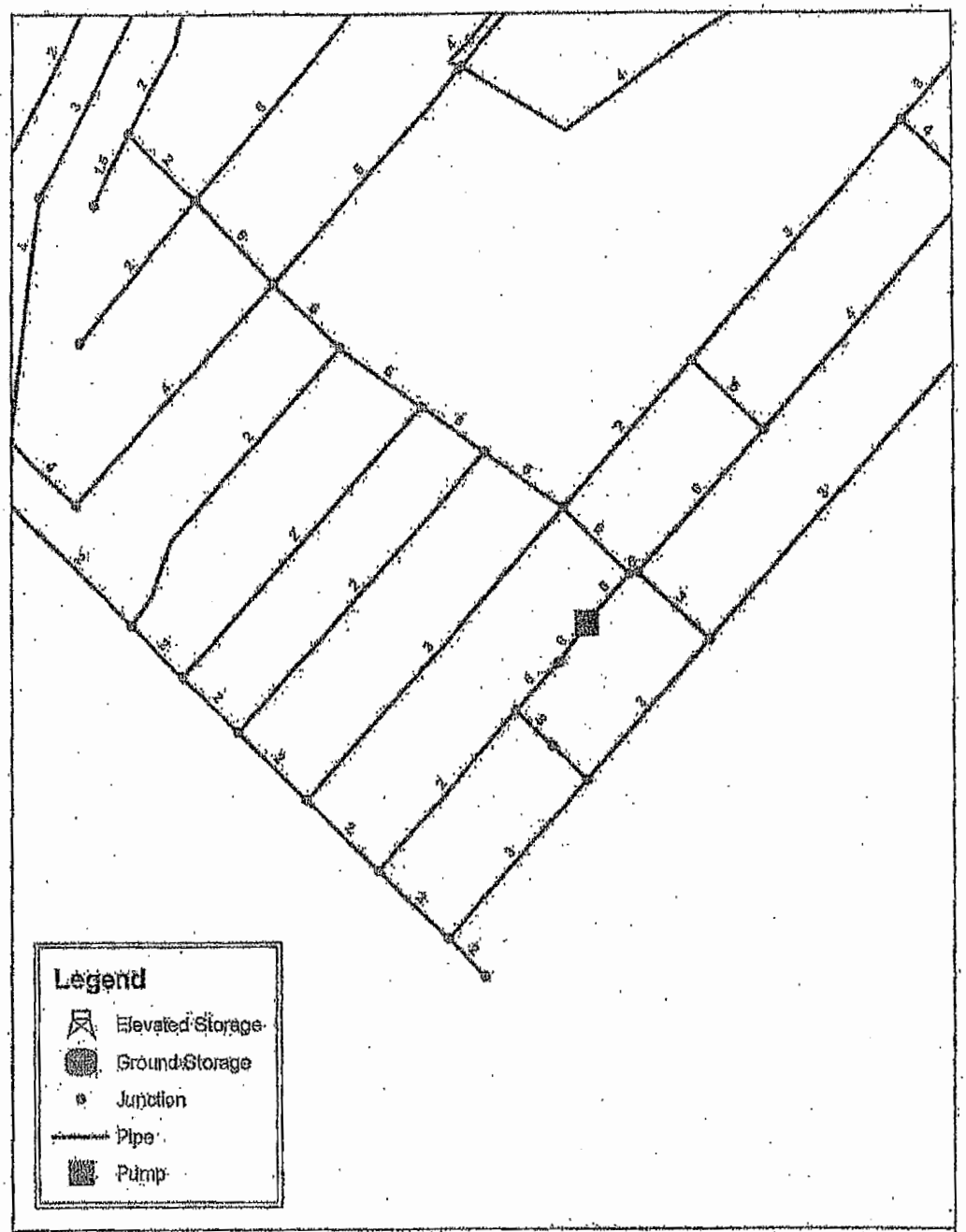
Plum Creek Water Model Facilities - E1



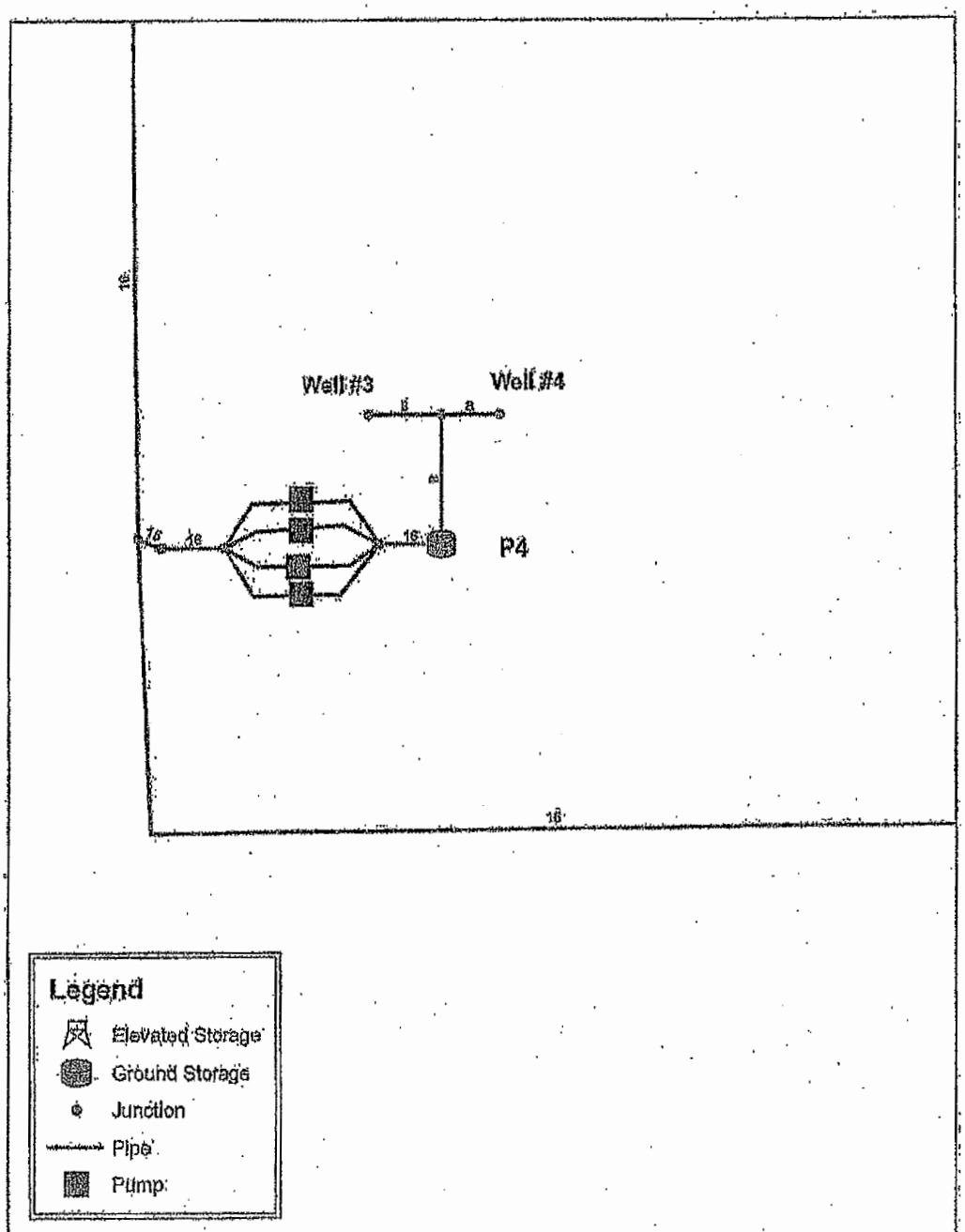
Plum Creek Water Model Facilities - E2



Plum Creek Water Model Facilities - P2



Plum Creek Water Model Facilities - P3



Plum Creek Water Model Facilities - P4

Appendix B

MODEL CALIBRATION GRAPHS

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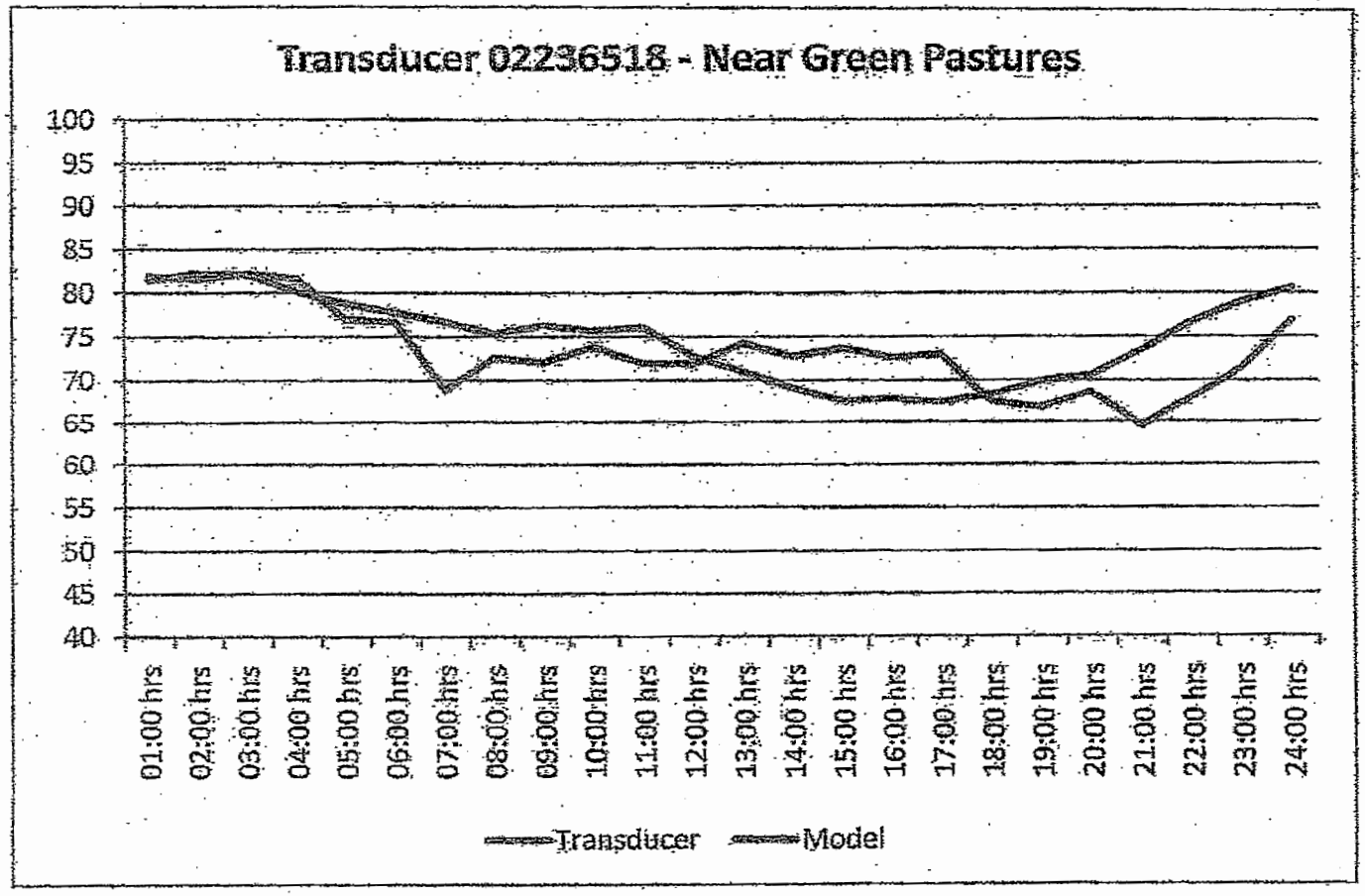
Transducer 02236518 - Near Green Pastures
100
95
90
85
80
75
70
65
60
55
50
45
40
01:00 hrs
02:00 hrs
03:00 hrs
04:00 hrs
05:00 hrs
06:00 hrs
07:00 hrs
08:00 hrs
09:00 hrs
10:00 hrs
11:00 hrs
12:00 hrs
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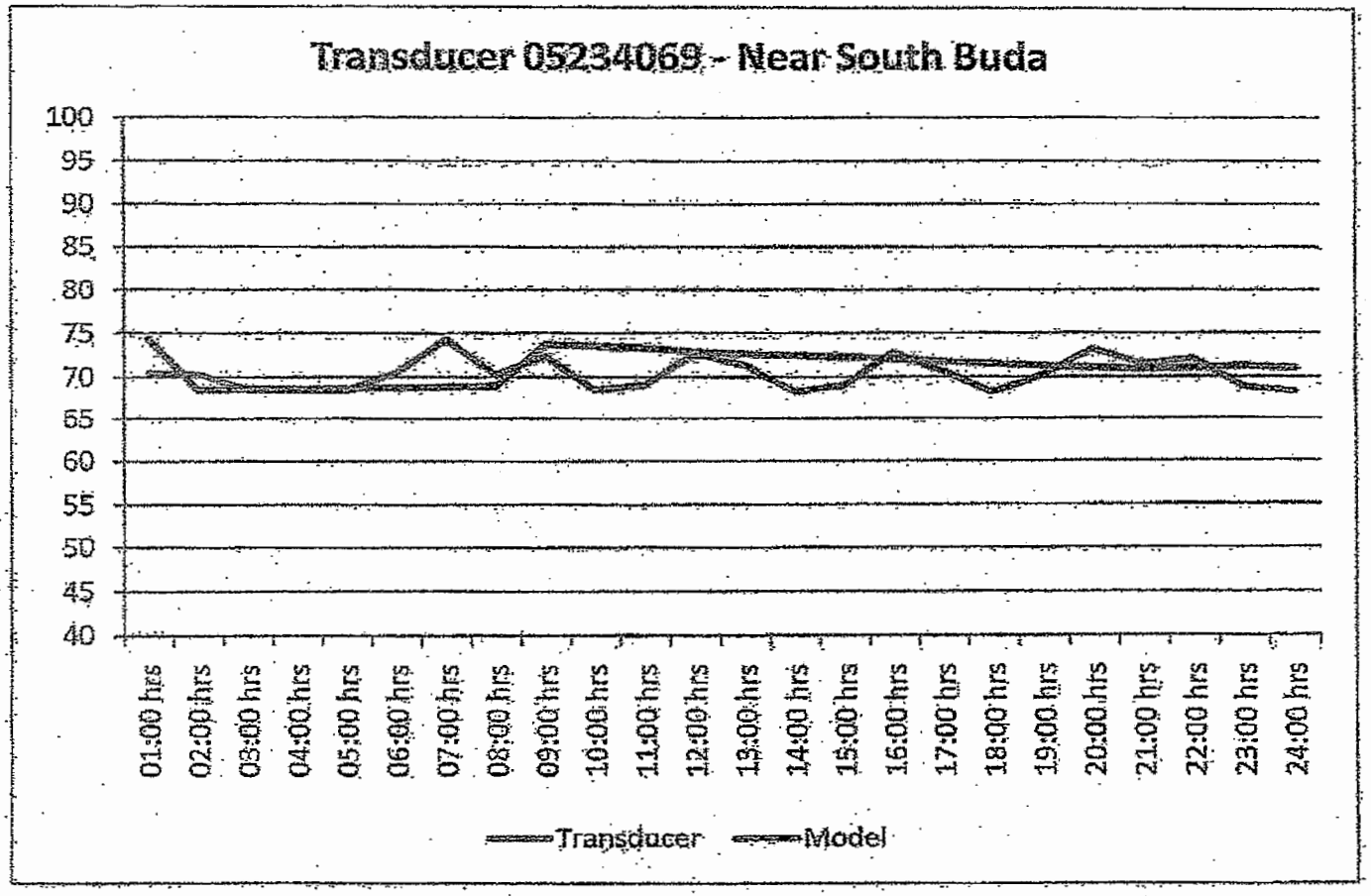
Transducer
Model


Transducer 05234069 - Near South Buda
100
95
90
85
80
75
70
65
60
55
50
45
40
01:00 hrs
02:00 hrs
03:00 hrs
04:00 hrs
05:00 hrs
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07:00 hrs
08:00 hrs
09:00 hrs
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11:00 hrs
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20:00 hrs
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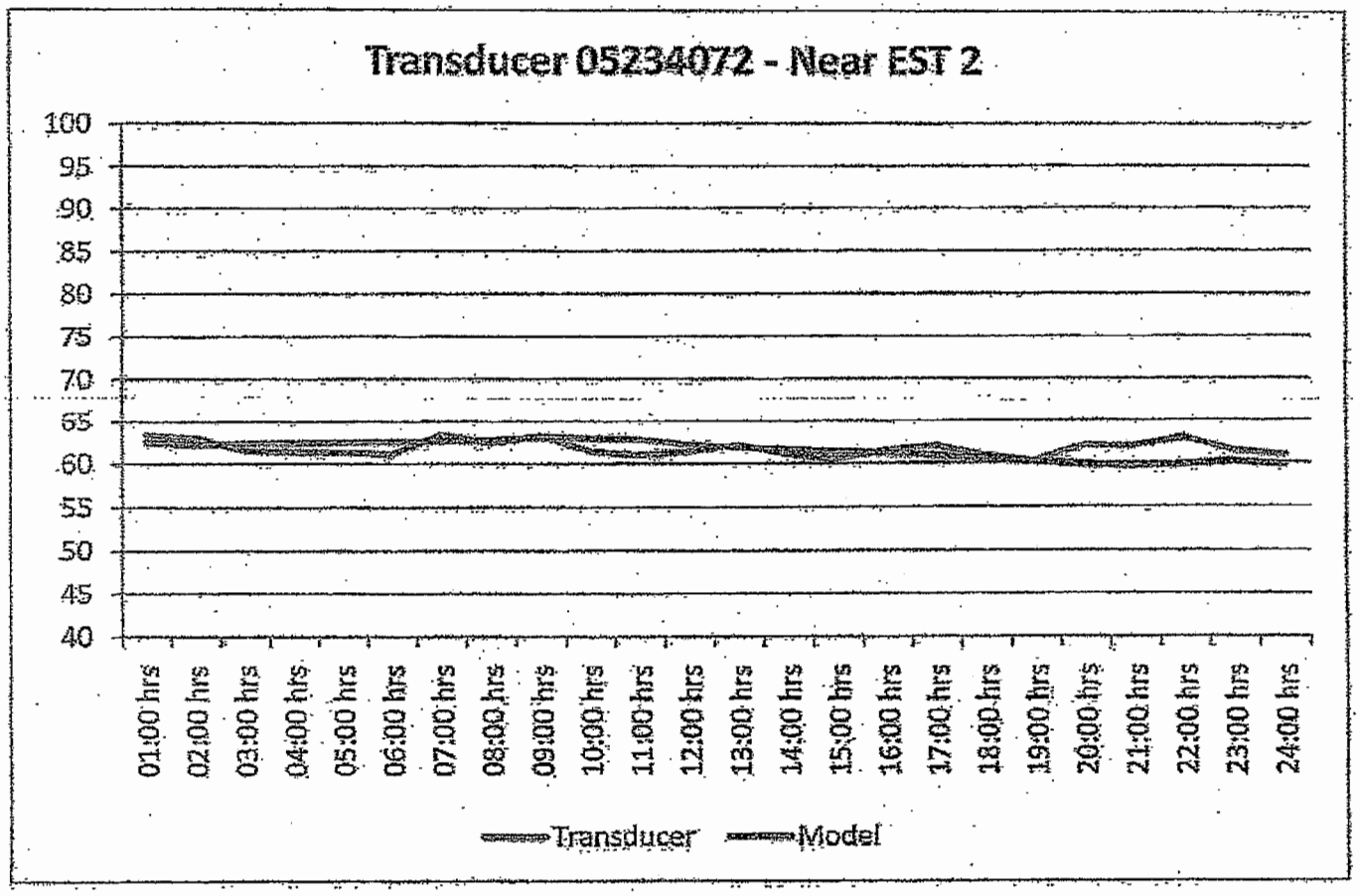
23:00 hrs
24:00 hrs
Transducer
Model


Transducer 05234072 - Near EST 2
100
95
90
85
80
75
70
65
60
55
50
45
40
01:00 hrs
02:00 hrs
03:00 hrs
04:00 hrs
05:00 hrs
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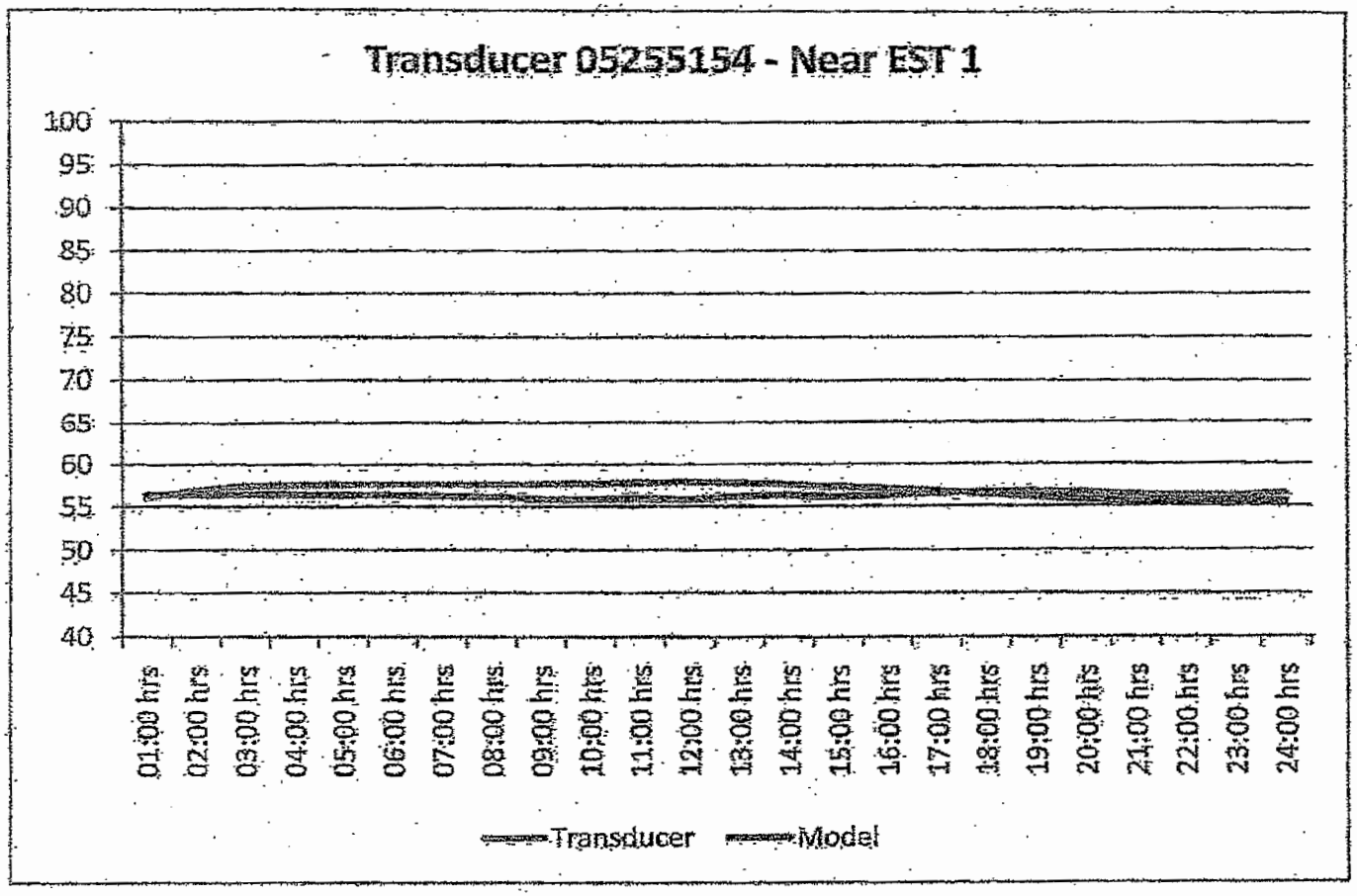
Transducer
Model


Transducer 05255154 - Near EST 1
100
95
90
85
80
75
70
65
60
55
50
45
40
01:00 hrs
02:00 hrs
03:00 hrs
04:00 hrs
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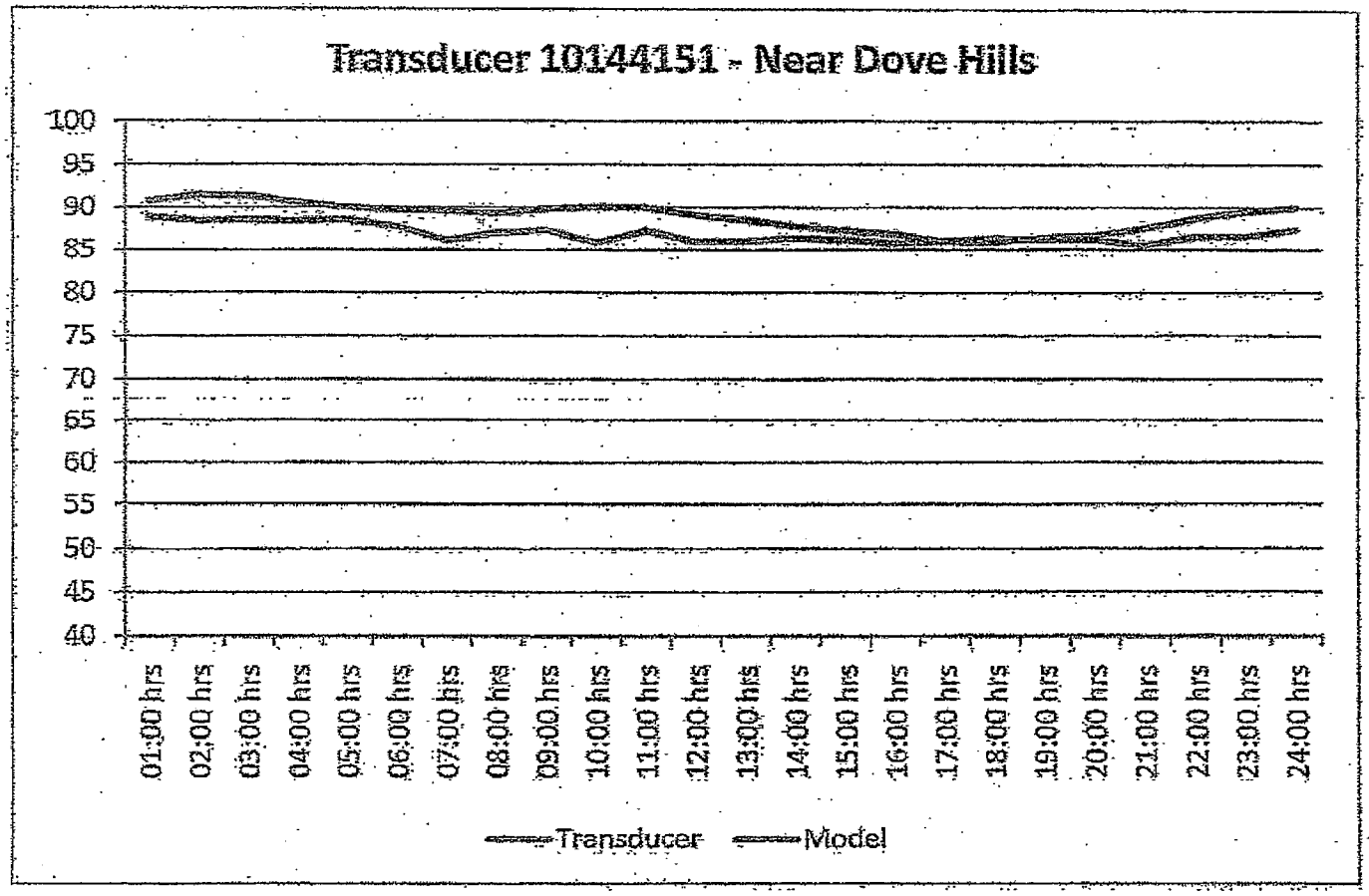
Transducer
Model


Transducer 10144151 - Near Dove Hills
100
95
90
85
80
75
70
65
60
55
50
45
40
01:00 hrs
02:00 hrs
03:00 hrs
04:00 hrs
05:00 hrs
06:00 hrs
07:00 hrs
08:00 hrs
09:00 hrs
10:00 hrs
11:00 hrs
12:00 hrs
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16:00 hrs
17:00 hrs
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20:00 hrs
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22:00 hrs
23:00 hrs
24:00 hrs
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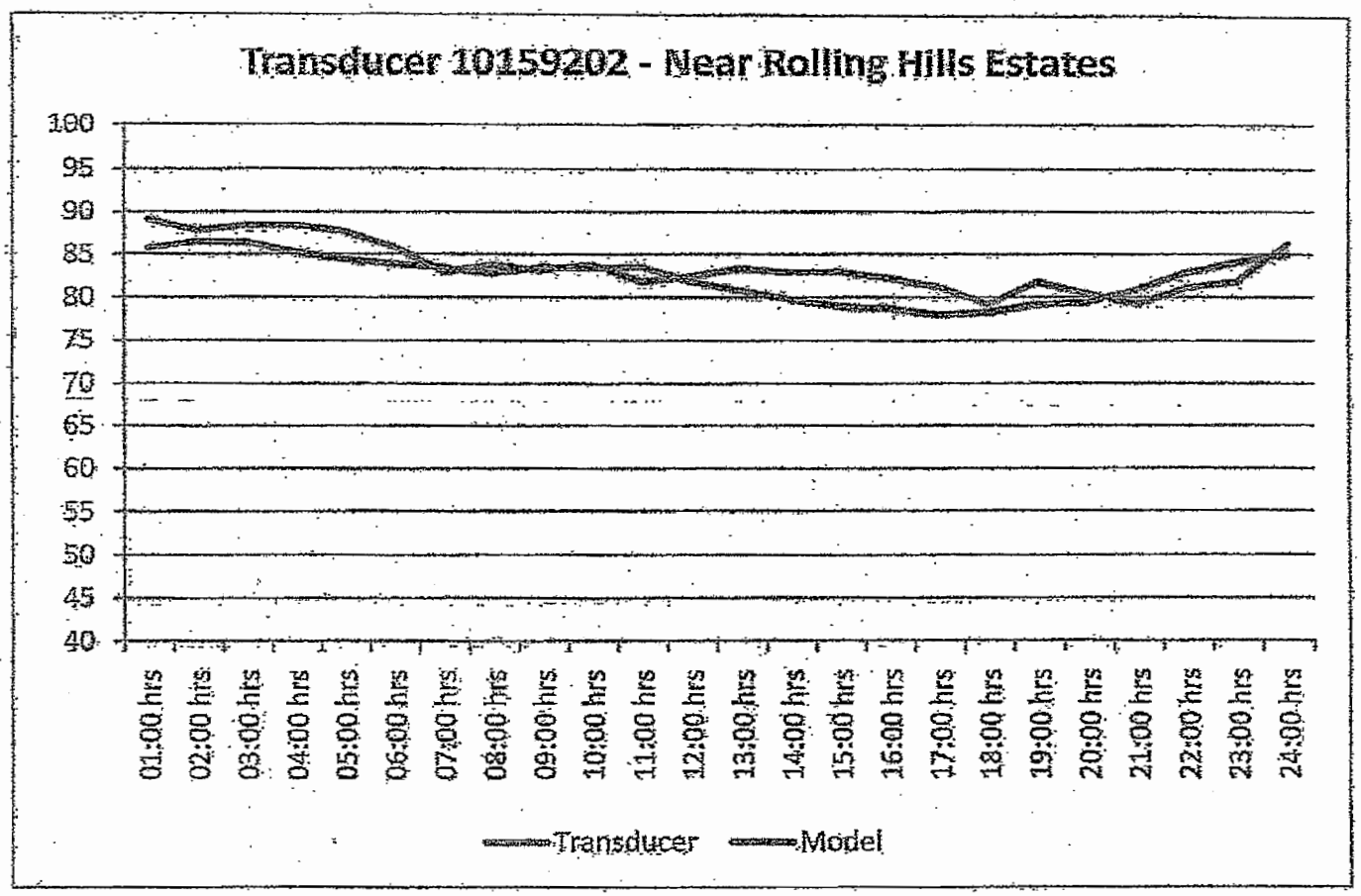
Model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Appendix C

CONDITION ASSESSMENT PROJECT MEMORANDUM

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carollo
Engineers, Working Wonders With Water

PROJECT MEMORANDUM

Project Name:	Plum Creek Master Plan	Date:	April 12, 2011
Client:	SouthWest Water Company	Project Number:	8493B.00
Prepared By:	Cara Wilson		
Reviewed By:	Richard Humpherys		
Subject:	Visual Condition Assessment		

1.0 PURPOSE

The purpose of this memorandum is to summarize the approach, findings, and recommendations of the visual condition assessment of the Plum Creek Utility Company (Plum Creek) water distribution facilities. This information will be incorporated into the overall recommendations for system-wide capital planning within the Plum Creek Master Plan conducted for the SouthWest Water Company (SWWC).

2.0 SITE VISIT PREPARATION

Based on data provided by SWWC, an inventory of the major above ground assets of the Plum Creek water distribution system was developed. This inventory has been organized by major unit process within each facility. As possible, existing data was used to identify capacity, location, and other information applicable to the assessment.

3.0 VISUAL CONDITION ASSESSMENT

The condition assessment is a reconnaissance-level field evaluation of key assets conducted by a multi-disciplined engineering team. The team includes an assessment coordinator to direct the process, take photographs to document existing asset condition, and to support the discipline engineers, as well as two senior, licensed engineers with expertise in mechanical and electrical/instrumentation engineering. The assessment team conducted the visual condition assessment with engineering and operations SWWC staff and interviewed them throughout the process regarding operations, maintenance, and performance history of the assets and facilities as a whole.

The information gathered during the condition assessment provides a standardized record of the asset condition specific to each discipline (Mechanical, Structural, Instrumentation, Electrical, and Piping). Component information such as the manufacturer, design criteria or capacity, and

installation year were noted as possible. The existing condition of the assets was documented with digital photos.

The condition ranking scale used in the field evaluation is an internationally accepted, industry-wide standard for designating asset condition, as defined in the International Infrastructure Management Manual (2006). The condition rankings are expressed as the amount of repair needed to return an asset to its original (perfect) condition. The condition rankings and descriptions are presented in Table 1:

Table 1 Condition Ranking Definitions
Plum Creek Master Plan
SouthWest Water Company

Condition Ranking	Descriptive Definition	Amount of Repair Needed
1	Very good	0
2	Minor defects	0 - 10%
3	Requires Significant Maintenance	11 - 20%
4	Requires Rehabilitation	21 - 40%
5	Unserviceable	>50%

The Plum Creek facilities visited as part of the condition assessment are listed below:

Pump Stations:
- Pump Station No. 2
- Pump Station No. 3
- Pump Station No. 4

Groundwater Wells:
- Well No. 1
- Well No. 2
- Well No. 3
- Well No. 4

Elevated Storage Tanks:
- Elevated Storage Tank No. 1 (Ambarwood)
- Elevated Storage Tank No. 2

Ground Storage Tanks:
- PS 2 Ground Storage Tank No. 1
- PS 2 Ground Storage Tank No. 2
- PS 3 Ground Storage Tank
- PS 4 Ground Storage Tank No. 1
- PS 4 Ground Storage Tank No. 2
- Goforth Ground Storage Tank
- Dove Hills Ground Storage Tank

A map of the Plum Creek facilities and distribution system is presented in Appendix A.

4.0 RESULTS

The Plum Creek facilities as a whole have been well maintained since their installation. As a result, nearly all of the assets are currently in fair to good condition. However, a few assets require renewal or replacement as a result of aging or service conditions. A list of the assets with a condition of 4 (Requires Rehabilitation) or 5 (Unserviceable) is presented in Table 2, below. A complete list of the Plum Creek assets and their current condition is provided in Appendix B.

Table 2	Plum Creek Assets in Poor Condition Plum Creek Master Plan SouthWest Water Company				
Facility	Address	Asset	Notes	Installation Year	Condition
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Electrical Room	Unconditioned. Electrical equipment (PLC and RVSS) has failed due to high temperatures in room.	1973	4
Goforth	435 Cody Lane, Kyle, TX 78640	GST	Abandoned in 2000. GST float level is broken. Ultrafab steel tank (30,000 gal). Tank may be salvageable for future use (requires inspection, paint).	1997	4
Dove Hills	1750 Windy Hill Road, Buda, TX, 78610	Above ground piping	Significant corrosion.	UNK	4

5.0 R&R RECOMMENDATIONS

A primary goal of the Master Plan is to identify existing facilities in need of renewal and replacement (R&R) capital expenditures in the near future. Based on the results of the condition assessment, it is recommended that the R&R strategies presented below be implemented to address the condition-related issues associated with the Plum Creek facilities:

Well No. 1

Well No. 1 was constructed in 1973 and is very near the end of it's expected useful life. During that time, the electrical room has remained unconditioned, resulting in an environment which cannot support the long-term functionality of the electrical assets contained within the building. Operations staff confirm that the Programmable Logic Controller (PLC) and Reduced Voltage Soft Start (RVSS) assets have failed due to the oppressively high temperatures present in the electrical room. It is recommended that this facility be conditioned for the future long-term viability of the electrical assets.

Goforth Ground Storage Tank

The Goforth facility has been abandoned since 2000. As a result, many assets are in poor condition and are unserviceable. However, the 30,000 gallon steel GST may be salvageable and used for future storage needs at an alternative location. If it is determined that this additional storage may be useful for future purposes, it is recommended that a full inspection be conducted of the tank (including the tank interior) to determine the long-term functionality of this asset.

Dove Hills Ground Storage Tank

The Dove Hills facility has been abandoned since 2002 when EST No. 1 was put on-line. As a result, many assets are in poor condition and are unserviceable. This site is currently being used as a storage location for spare and unused parts. Operations staff indicate that there may be some value in restoring the 66,800-gallon ground storage tank to good condition to provide service to the approximately 175 nearby customers. Should the additional storage be needed, it is recommended that a full inspection be conducted of the tank to determine the long-term functionality of this asset. If this facility is brought back into service, it is also recommended that the leaking underground check valve be replaced and the storage building be repaired to maintain the condition of the assets stored within.

General Repair

In addition to the repair / rehabilitation efforts mentioned above, it is recommended that other, more general upgrades be made to increase the safety and long-term reliability of the Plum Creek water system:

- Adjust and anchor pipe supports throughout the Plum Creek system.
- Repaint piping or replace corroded piping throughout the Plum Creek system.

6.0 NEXT STEPS

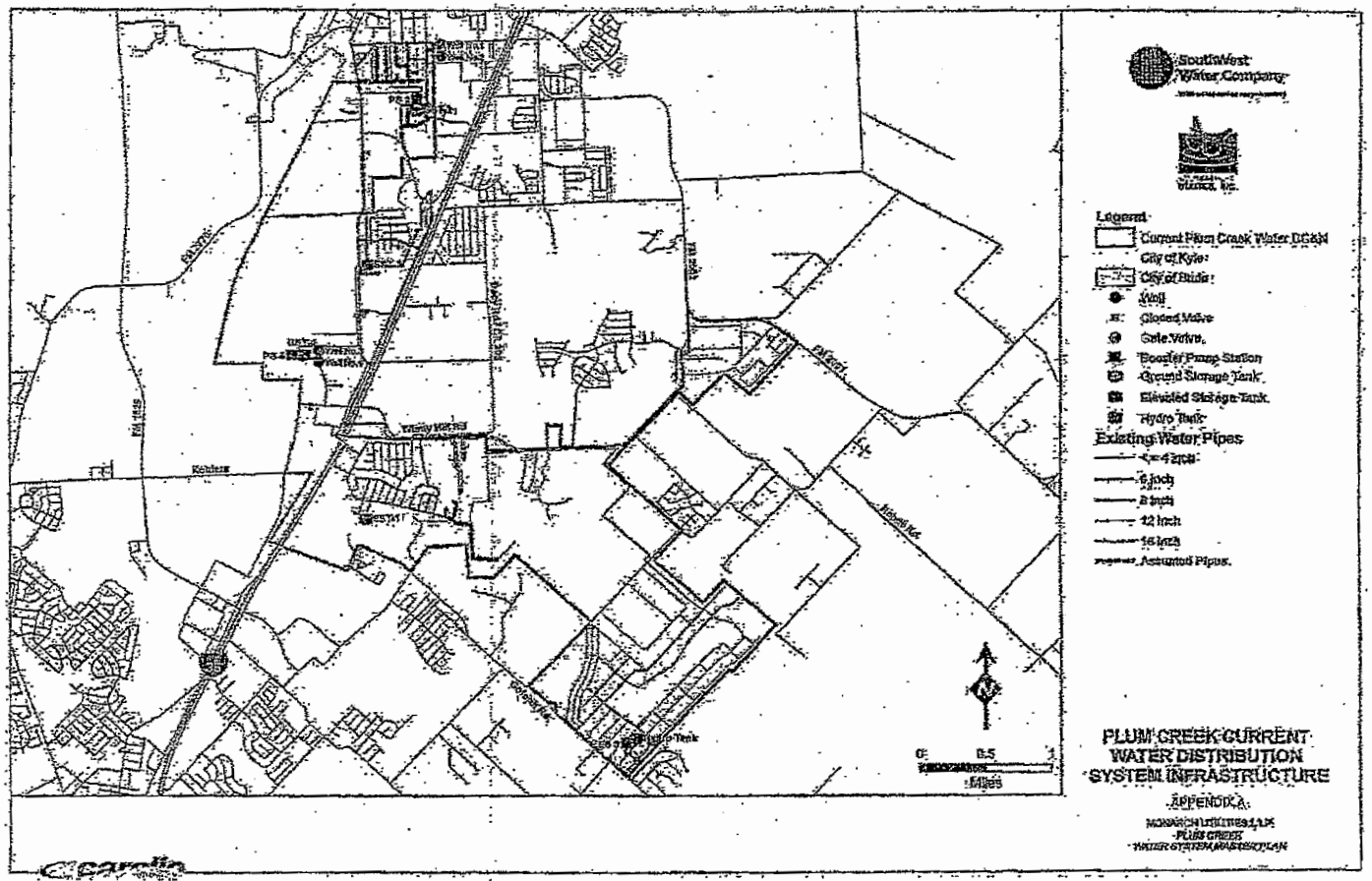
6.1 Ongoing Condition Assessments

To continue the accurate and timely identification of future R&R capital projects, it is recommended that condition assessments of all of Saw's above-ground assets be conducted on a regular basis. Accordingly, it is recommended that assets in poor condition (4 or 5) be assessed annually, and a comprehensive assessment of all of the above ground assets be conducted every three to five years. New assets (installed within the past year) should be evaluated concurrent to the comprehensive assessment so that asset-specific condition deterioration curves (and the associated life expectancy) can be developed.

6.2 Risk Assessments

It is also recommended that a risk evaluation of the buried infrastructure be conducted to identify high-risk, high-cost piping. Buried piping comprises the majority of infrastructure value, and a methodical approach to identifying the areas at high risk of failure can optimize annual R&R expenditures on below-ground piping by focusing efforts on the highest priority areas. The results of this effort will provide SWWC the information needed to make critical planning decisions on the long-term renewal and replacement of its buried infrastructure.

APPENDIX A – PLUM CREEK DISTRIBUTION SYSTEM MAP


SouthWest Water Company
Legend
Current Plum Creek Water DCCN
City of Kyle
City of Buda
Well
Closed Valve
Gate Valve
Booster Pump Station
Ground Storage Tank
Elevated Storage Tank
Hydro Tank
Existing Water Pipes
4 inch
6 inch
8 inch
12 inch
16 inch
Abandoned Pipes
0 0.5 1
Miles
PLUM CREEK CURRENT WATER DISTRIBUTION SYSTEM INFRASTRUCTURE
APPENDIX A

APPENDIX B – PLUM CREEK ASSET CONDITION RANKING

South West Water Company
Plum Creek Master Plan
Visual Condition Assessment: February 25, 2011

Mechanical Asset Assessor: Troy Lemon.
Elec / I&C Asset Assessor: Kevin Angle
Structural Asset Assessor: Troy Lemon / Paul Michel

General Asset Info					Condition			Mechanical								I&C				Electrical						Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Instrumentation / Electrical	Visible Piping	Subjected	Vibration?	Noise?	Cavitation?	Leaks?	Rotating Belt?	Pump rotating?	Repair parts available?	Critical Instruments functioning?	Alarms functioning?	Panels intact?	Panels properly sealed?	Functional?	Connection?	Electric current?	Repair parts available?	Motor cooling requirements?	Motor capacity requirements?	Corrosion?	Leaks?	Water in good condition?	Sealing concrete?	Cracks?	Corrosion?	Visible deformities?	Foundation settled?
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 1	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																	
PS 4.	3515 Dry Hole Road, Kyle, TX 78640	Pump 2	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																	
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 3	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																	
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 4	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																	
Well 3	3515 Dry Hole Road, Kyle, TX 78640	Well 3.	Replaced fall 2010 (original 2006). No pump support. 125 hp. Check valve ratios. Per contract Agreement; may not.	2010	1				N	N	N	N	N	N	Y	Y																	
Well 4	3515 Dry Hole Road, Kyle, TX 78640	Well 4	Shaft pulled up and required replacement in fall 2010 (original 2007). 150 hp. Previously was vertical turbine	2010	1				N	N	N	N	N	N	Y	Y																	
PS 4 / GST 1	3515 Dry Hole Road, Kyle, TX 78640	GST 1	Steel tank (not painted). 125,000 gal. Gravity flow into GST 2.	2006				1																					N/A	N	N	N	N
PS 4 / GST 2	3515 Dry Hole Road, Kyle, TX 78640	GST 2	Steel tank (not painted). 211,000 gal. Fed by Wells 3 and 4.	2006				1																					N/A	N	N	N	N
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Sodium Hypochlorite Disinfection		2006	1				N	N	N	N	N	N	Y	Y																	
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Aboveground piping		2006	1																					N	N	Y					
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Transformer	30 kVA. Replaced October 2010.	2010		1														Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Disconnects		2009		1														Y	N	Y	Y	Y	Y								

General Area Info					Condition				Mechanical																															
Facility	Address	Asset Name	Notes	Install Year	Is Obsolete?	Electrical Equipment / Fixtures	Visible Piping	Structural	Vibrations?	Noise?	Leaks?	Building Heat	Water Leaking?	Recent maintenance Noted?	Adequate for service?	Crosses Underground Utilities?	Alarms functioning?	Parts missing?	Repair parts available?	Functional?	Capacity?	Clean controls?	Repair parts available?	Meets safety requirements?	Corroding?	Leaks?	Paint in good condition?	Sanding needed?	Cracks?	Corroded?	Visible deformation?	Foundation settling?
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Auto Valve		2006		*														Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	RVSS Surveys		2006		1														Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	PLC		2006		1														Y	N	Y	Y	Y	Y								
Well 3	3515 Dry Hole Road, Kyle, TX 78640	Well 3 Pressure Gauge		2006		1														Y	N	Y	Y	Y	Y								
Well 4	3515 Dry Hole Road, Kyle, TX 78640	Well 4 Pressure Gauge		2006		1														Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	ESF 2	Has cathodic protection. 250,000 gal. Filled by PS 2. Foundation good.	2007				1																				N	N	N	N	N
ES 2	2101 S. Loop 4, Buda, TX 78610	Above ground piping		2007			1																		N	N	Y					
ES 2	2101 S. Loop 4, Buda, TX 78610	Antenna		2007		1														Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	PLC		2007		1														Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	Pressure Gauge		2007		1														Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	Lighting Panel		2007		1														Y	N	Y	Y	Y	Y								
PS 2	700 Bonita Vista Drive, Buda, TX 78610	Pump 1	1400 gpm. 300 hp booster pump.	2006	2				N	N	N	N	N	N	Y	Y																	
PS 2	700 Bonita Vista Drive, Buda, TX 78610	Pump 2	1400 gpm.	2006	2				N	N	N	N	N	N	Y	Y																	

General Asset Info					Condition				Mechanical																																		
Facility	Address	Asset Name	Notes	Install Year	Warrantied	Housekeeping / Equipment	Visible Piping	Structural	Vibration?	Noise?	Corrosion?	Leaks?	Running Hot?	Dirty Filters?	Regular parts available?	Manuals for service?	Critical Equipment Available?	Alarms Functioning?	Parts Painting?	Vendor parts available?	Electrical	Functions?	Corrosion?	Clean enclosure?	Bonding points available?	Maintenance factors noted?	Meters capacity requirements?	Piping	Supported?	Leaks?	Paint in good condition?	Structural	Sealing concrete?	Cracks?	Corrosion?	Visible deformation?	Foundation cracking?
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Above ground piping	No reinforcing steel in pipe supports. Consider putting a thrust block behind pipe supports to minimize impact from	2006			4																					Y	N	Y												
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Site	Remove old pump house debris. Store spare pump parts inside. Discharge header pipe supports need to be	2006																																							
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Mini PowerCenter	10 KVA.	2006		1																Y	N	Y	Y	Y	Y															
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Autodialer		2006		1																Y	N	Y	Y	Y	Y															
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	PLC		2006		1																Y	N	Y	Y	Y	Y															
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Pressure Gauge		2006		1																Y	N	Y	Y	Y	Y															
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Service Disconnect		2006		1																Y	N	Y	Y	Y	Y															
PS 2 / GST 1	XXX Bonita Vista Drive, Buda, TX 78610	GST 1		2006				2																									N	N	N	N	N					
PS 2 / GST 2	XXX Bonita Vista Drive, Buda, TX 78610	GST 2	Minor cracking in flange of expansion joint.	2006				2																									N	N	N	N	N					
Well 1	507 Bonita Vista Drive, Buda, TX 78610	Well 1	Still gpm. Serviced in 2010.	1973	2				N	N	N	N	N	N	T	N																										
Well 1	507 Bonita Vista Drive, Buda, TX 78610	Electrical Room	Unconditioned. Electrical equipment (PLC and radio) has failed due to high temperatures in room.	1973		2																											N/A	N	N	N	N					
Well 1	507 Bonita Vista Drive, Buda, TX 78610	PLC		1973		1																																				
Well 1	507 Bonita Vista Drive, Buda, TX 78610	RVSS		1973		1																																				

General Asset Info					Condition				Mechanical																																			
Facility	Address	Asset Name	Notes	Install Year	Maintenance	Instrumentation/ Electrical	Visible Piping	Structure	Visibility	Water?	Operation?	Leaks?	Blowdown test?	Pump missing?	Repair parts available	Service Frequency	Critical Indicators functioning?	Alarms functioning?	Parts missing?	Manual valve labeled?	Functional?	Operational?	Clean enclosure?	Adjacent parts visible?	Meets code requirements?	Meets capacity requirements?	Cracked?	Corroded?	Paint in good condition?	Cracking concrete?	Cracks?	Corroded?	Visible deterioration?	Foundation verified?
Well 1	307 Bonita Vista Drive, Buda, TX 78610.	Old Control Cabinet		1973		2															X	N	Y	Y	Y	Y									
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Antenna		1973		1															Y	N	Y	Y	Y	Y									
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Service Disconnect		1973		1															Y	N	Y	Y	Y	Y									
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Flow Meter		1973		1											Y	Y	N	Y															
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Mini PowerCenter		1973		1															Y	N	Y	Y	Y	Y									
Well 1	307 Bonita Vista Drive, Buda, TX 78610.	AutoDialer		1973		2															Y	N	Y	Y	Y	Y									
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Well 2	448 gpm. Not been recently serviced. Nonintrusive structure around Well 2 is too heavy for one person to open. Well 2	1973	2				N	N	N	N	N	N	Y	N																			
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Service Disconnect		1973		1															Y	N	Y	Y	Y	Y									
Well 2	307 Bonita Vista Drive, Buda, TX 78610.	RVSS		1973		1															Y	N	Y	Y	Y	Y									
Well 1 & 2	307 Bonita Vista Drive, Buda, TX 78610	Above ground piping	Wrapping is deteriorating.	1973	3																						N	N	N/A						
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Building	Siding needs repair or replacement. Minor corrosion in chemical pump room.	1973	2																									N/A	N	Y	N	N
ES 1	109 Redwood Drive, Kyle, TX 78640	ES 1	250,000 gal, inspected 2010 by Corpond. No cathodic protection - interior in good condition. Corroded near	2001				1																						N	N	N	N	N
ES 1	109 Redwood Drive, Kyle, TX 78640	AutoDialer		2001		1															Y	N	Y	Y	Y	Y									

General Asset Info					Condition			Mechanical									HSC			Electrical						Piping			Structures			
Facility	Address	Asset Name	Notes	Install Year	Neighborhood	Instrumentation / Electrical	Visible Piping	Operational	Vibration?	Noise?	Leaking?	Rusted?	Running Hot?	Needs painting?	Repair parts available?	Adequate for service?	Critical indicators functional?	Manual functional?	Parts available?	Repair parts available?	Panel clean?	Corrosion?	Clean contacts?	Repair parts available?	Notes such equipment?	Meet NEC clearance requirements?	Corrosion?	Cracks?	Paint in good condition?	Spalling concrete?	Cracks?	Corrosion?	Visible deformities?	Foundation settling?
GS 1	109 Redwood Drive, Kyle, TX 78640	PLC		2001		4															4	N	4	4	4	4								
GS 1	109 Redwood Drive, Kyle, TX 78640	Lighting Panel		2001		5															Y	N	Y	Y	Y	Y								
GS 1	109 Redwood Drive, Kyle, TX 78640	Pressure Gauge		2002		1															Y	N	Y	Y	Y	Y								
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	GST	45,000 gal. Abandoned since 2002 (when GST 1 was put to service).	UNK				5																										
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	General	Leaking buried check valve. No redundancy for these customers. Inlet and exit lines were tied together. Pumps	UNK																														
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Above ground piping	Significant corrosion.	UNK			4																											
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Building	Significant cracking. Spare 30 hp motors (2) and one pump. Inferior concrete under block walls. Building used for	UNK																														
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Lighting Panel		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Lighting Panel Disconnect		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Starters		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Service Disconnect		UNK		2																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Service Conductors	Routed through overgrown tree branches.	UNK		3																												
Galorth	435 Cody Lane, Kyle, TX 78640	GST	Abandoned in 2000. GST first level is broken. Unstable steel tank (30,000 gal). Tank may be salvagable for future use.	1997			4																											

General Asset Info					Condition				Mechanical								HVAC				Electrical						Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Rehabilitated	Instrumentation / Electrical	Visible Piping	Structural	Vibration?	Noise?	Corroded?	Leaks?	Running hot?	Parts missing?	Replacement parts available?	Adequate for service?	Critical indicators functioning?	Alarms functioning?	Pressures / Flows?	Repair parts available?	Electrical?	Corroded?	Clear conduits?	Repair parts available?	Wires color coded properly?	Always working / Will alarm?	Corroded?	Leaks?	Pull in good condition?	Spalling concrete?	Cracks?	Corroded?	Visible deterioration?	Foundation settling?
Goliath	435 Cody Lane, Kyle, TX 78640	Building	Concrete cinder block (10'x12'), locked. Unable to enter to assess interior assets (if any).	1997				N																										
Goliath	435 Cody Lane, Kyle, TX 78640	Power Panel		1997		Y																												
PS 2 / GST	90 Summit Drive, Kyle, TX 78640	GST	Temporary polyethylene tank used only to serve immediate neighbors. Replace with permanent tank to meet TCEQ.	2006	Y																									N	N	N	N	N
PS 2	90 Summit Drive, Kyle, TX 78640	Hydro-pneumatic tank	50 gal	2006	N																									N	N	N	N	N
PS 2	90 Summit Drive, Kyle, TX 78640	Pump 2	3 hp. Baldor motor.	2006	Y				N	N	N	N	N	N	Y	Y																		
PS 2	90 Summit Drive, Kyle, TX 78640	Pressure Gauge		2006		Y															Y	N	Y	Y	Y	Y								
PS 2	90 Summit Drive, Kyle, TX 78640	Controls / Starter		2006		Y											Y	Y	N	Y														

5.3 CAPITAL COST RECOVERY

The capital recovery fee is calculated as the Plant Net Book Value less net Capital in Aid of Construction (CIAC) plus the cost of capital improvements required in the near term, divided by the total number of customers that are expected to be added by buildout of the service area. Texas regulations allow utilities to charge developers this capital recovery fee to "buy into" the water system to help pay for the capacity in the water supply system needed to service water customers. Monarch reported that the Plum Creek Plant Net Book Value less CIAC is currently $6,102,384. The capital improvements identified in this master plan study that are required to serve the Plum Creek customers and is included in the capital recovery fee. These costs do not include the additional mains needed to supply fire flow or the cost of an additional water supply. The total known capital costs that need to be recovered in some form is $9,813,384 (net book value plus costs of Table 5.5).

Table 5.5 Capital Cost Improvements Required to Serve Growth in the Plum Creek Water CC&N
Plum Creek Water System Master Plan
Monarch Utilities I LP

Project	Estimated Capital Cost in May 2011 Dollars
PS 4 Booster Station Upgrade	$1,549,000
GST PS4 Ground Storage	$750,000
PC East Waterline Extension to Phillips Ranch	$268,000
Lower Pressure Plane Distribution System Loop	$432,000
Future Water Supply Connection with City of Kyle, TX	$612,000
Pressure Plane Boundary PRV	$100,000
Total	**$3,711,000**

Monarch reports that Plum Creek currently has 2,390 LUEs and an additional 4,190 LUEs are anticipated by buildout, for a total of 6,580 customers in the Plum Creek service area. Therefore, the capital recovery cost per connection is $2,342.

5.4 RECOMMENDATIONS

The following recommendations are made for this master plan:

1. The repair and replacement actions itemized in Appendix C and summarized in Table 5.3 should be implemented.
2. Monarch should identify additional water supply options as soon as possible. Supply options should consider the purchase cost of the water as well as the point of delivery to the Plum Creek system. Because this future supply is not defined at the publishing of this master plan report, it was assumed that the new water supplies would be delivered to the Plum Creek upper pressure plane near the I-35 freeway. The pipeline

STM_ACR002377

necessary to convey the new water supplies from the City of Kyle to Plum Creek was included in this master plan. The cost of the transmission pipeline only includes the area within the Plum Creek CC&N because the exact tie-in point to the Kyle system was unknown.

A new well should be evaluated as a potential future water supply for the upper pressure plane. Monarch should evaluate the feasibility of connecting this well directly to the distribution system along the 16-inch/12-inch mains near site GST P2. Doing this may make up a portion of the needed booster pumping capacity that is required in the upper pressure plane to meet estimated maximum day demands and fire flows.

3. The CIP recommendations for new growth projects outlined in Table 5.2 should be implemented. Each project should be phased to coincide with planned construction so that service can be provided to growth areas.

4. If Monarch decides to provide fire flow service to the southeastern area, it is recommended that some existing mains be upsized and some additional mains be installed per the summary shown in Table 5.4 and Figure 5.1.

5. To provide fire flow in the upper pressure plane (Pressure Plane 1), additional pumping capacity is required. If a new well or another source is configured to connect directly to the distribution system in the upper pressure plane, then this added capacity may make up a portion of the needed booster pumping capacity in the upper pressure plane.

6. An additional 0.5 MG of storage should be added to Pressure Plane 2 at site GST P4 in order to provide the required fire flow volume for a 3,000 gpm fire flow for a three-hour duration (0.54 mg). An additional 2,400 gpm (Firm) booster pumping capacity is recommended for Site P4 by buildout to meet estimated maximum day demands and fire flow demands.

   If the future Plum Creek water supply is delivered to Pressure Plane 2 (e.g., from the City of Kyle), then the additional storage and booster pumping at site GST P4 may be needed to supply water to the upper pressure plane.

7. An additional 0.25 MG of elevated storage is recommended when the lower pressure plane (2A) is established. This elevated storage will serve the Phillips Ranch development and provide increased reliability for the southeastern area of the Plum Creek system. When this additional elevated storage is operational, the small hydro-system in the Green Pastures Subdivision may not be necessary. A pressure test should be done at this time to determine if pressures are sufficient upstream of the hydro-system to allow the hydro-system to be decommissioned.

8. Improvements to Wells 1 and 2 infrastructure and controls should be made so that these two wells can operate simultaneously when needed.

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Appendix A

DETAIL MAPS OF THE PLUM CREEK DISTRIBUTION SYSTEM

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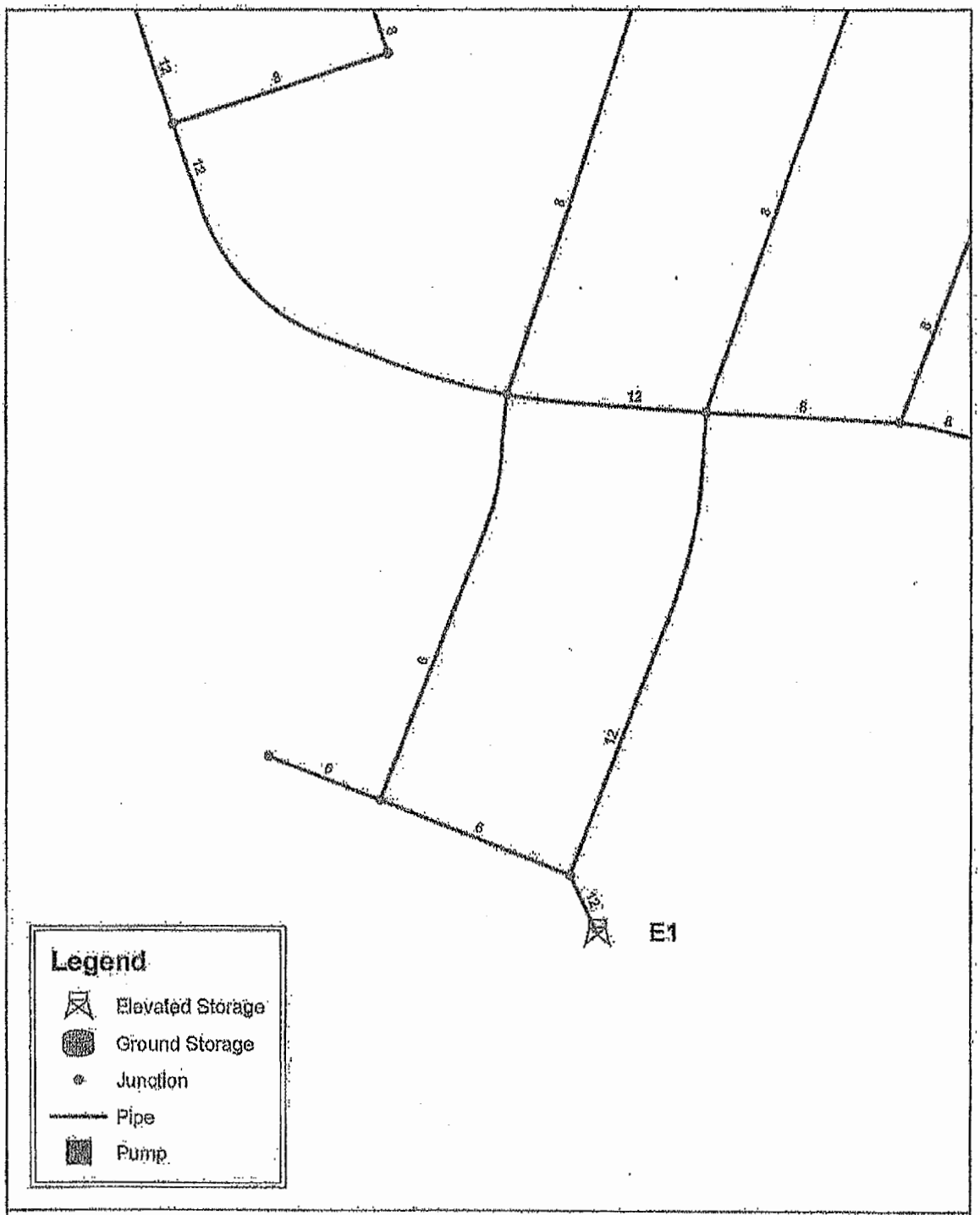
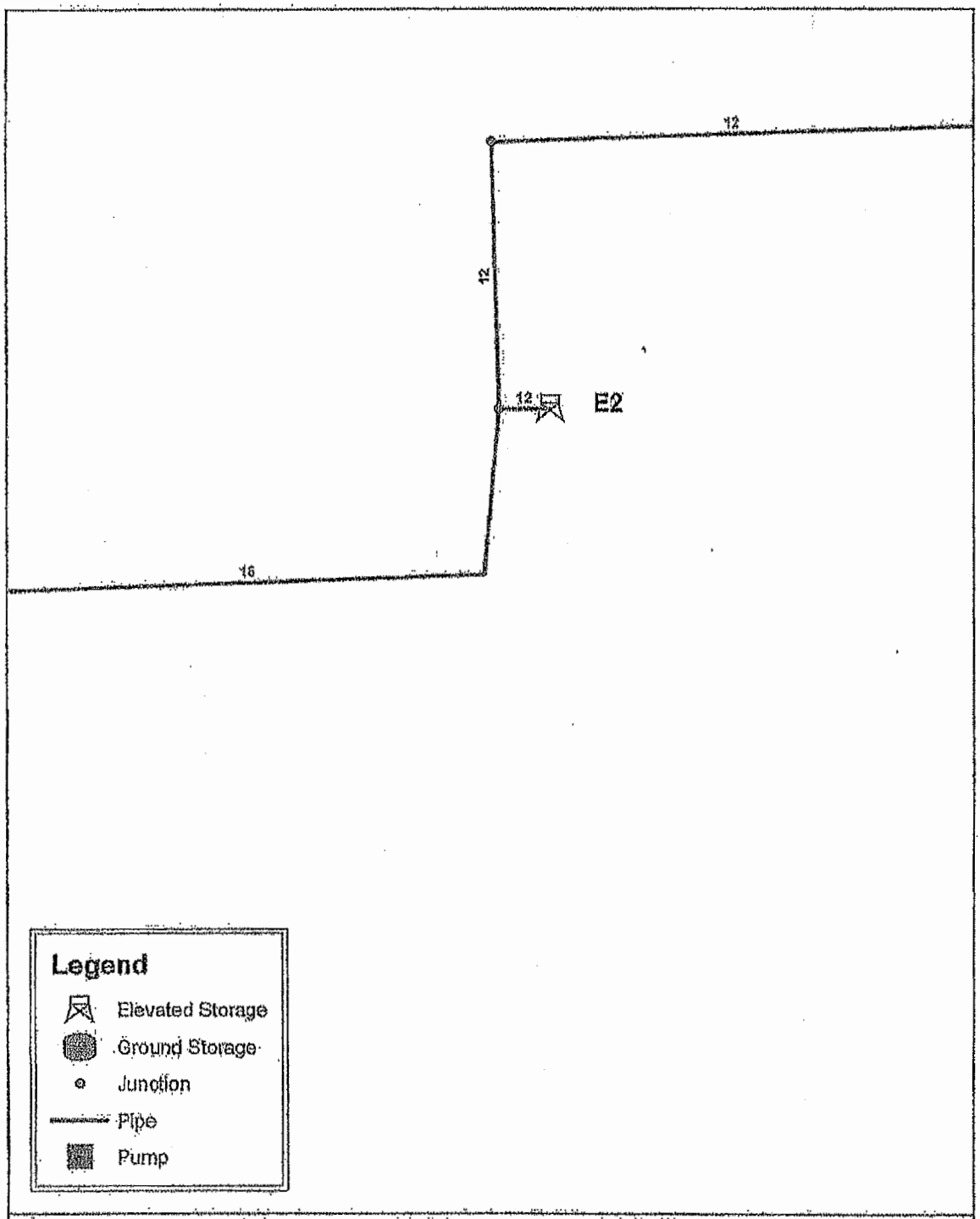
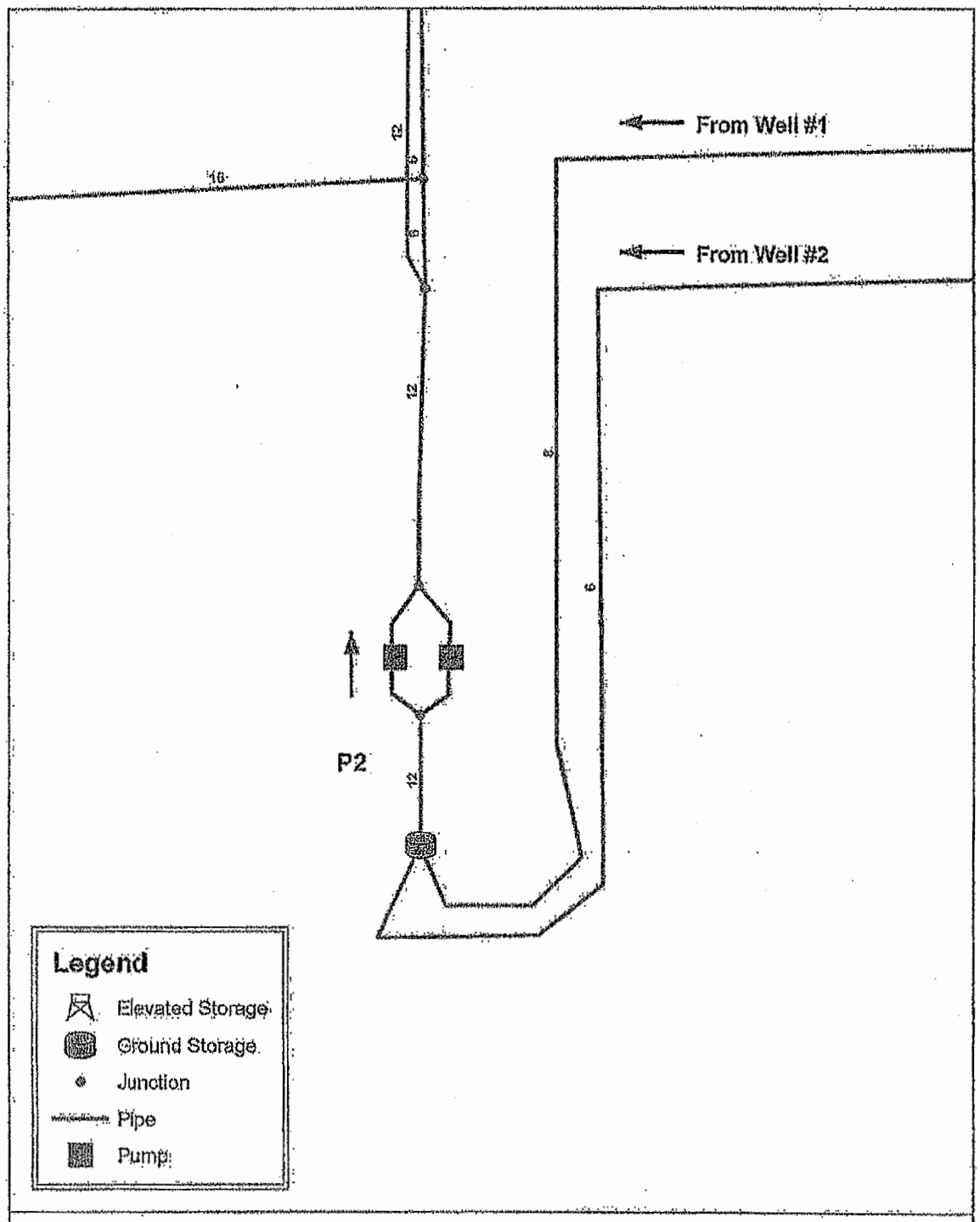


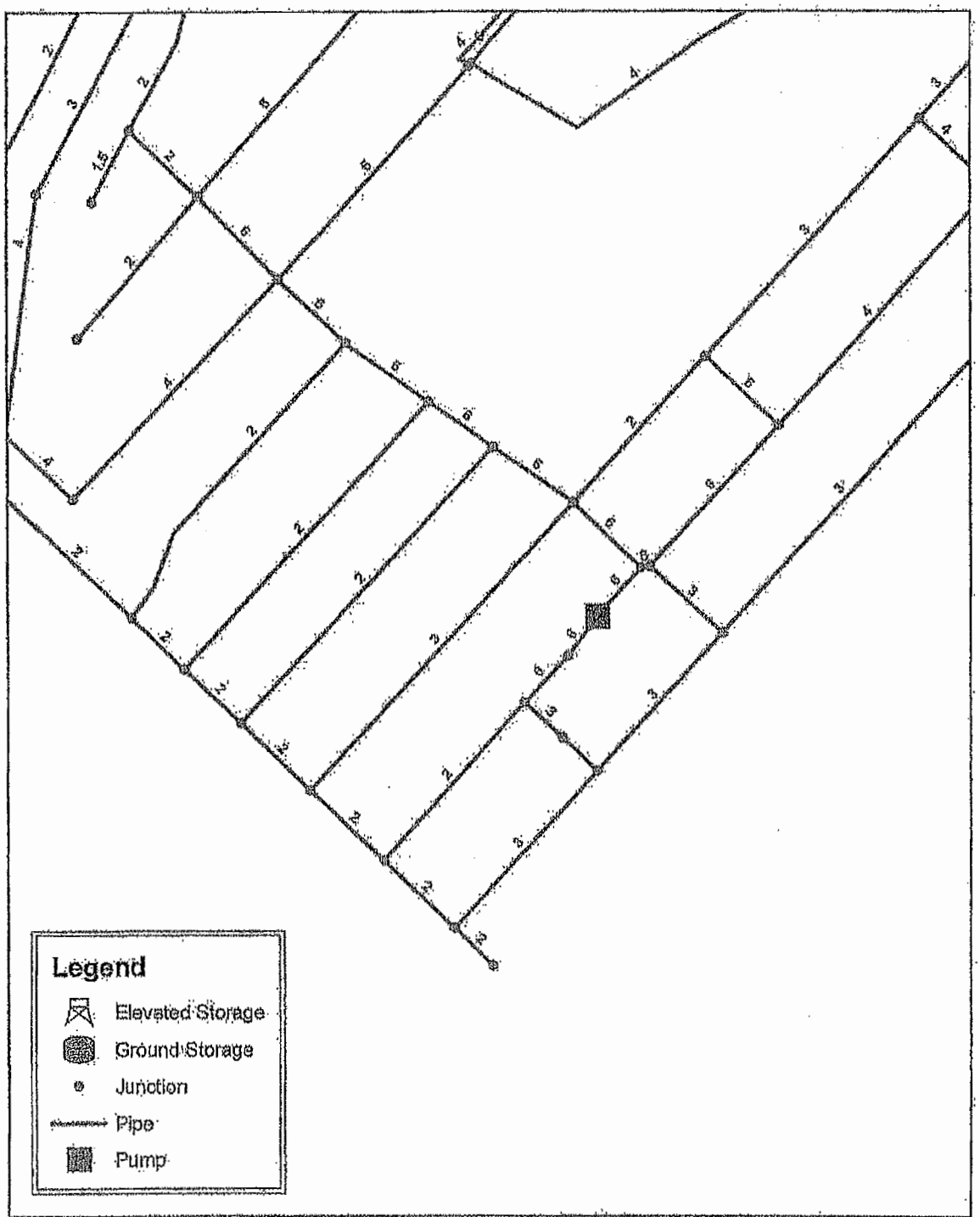
Plum Creek Water Model Facilities - E1



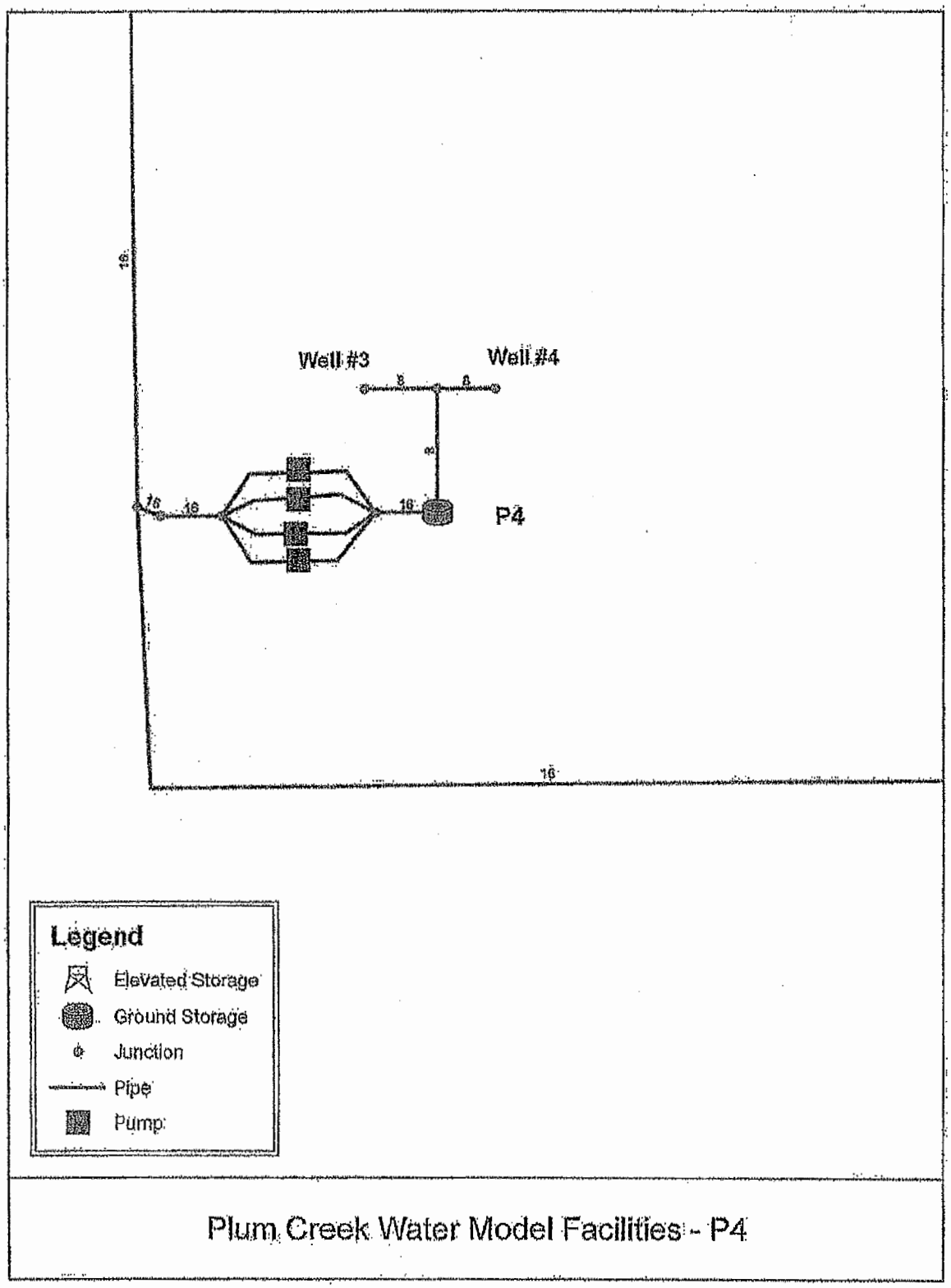
Plum Creek Water Model Facilities - E2



Plum Creek Water Model Facilities - P2



Plum Creek Water Model Facilities - P3



Plum Creek Water Model Facilities - P4

Appendix B

MODEL CALIBRATION GRAPHS

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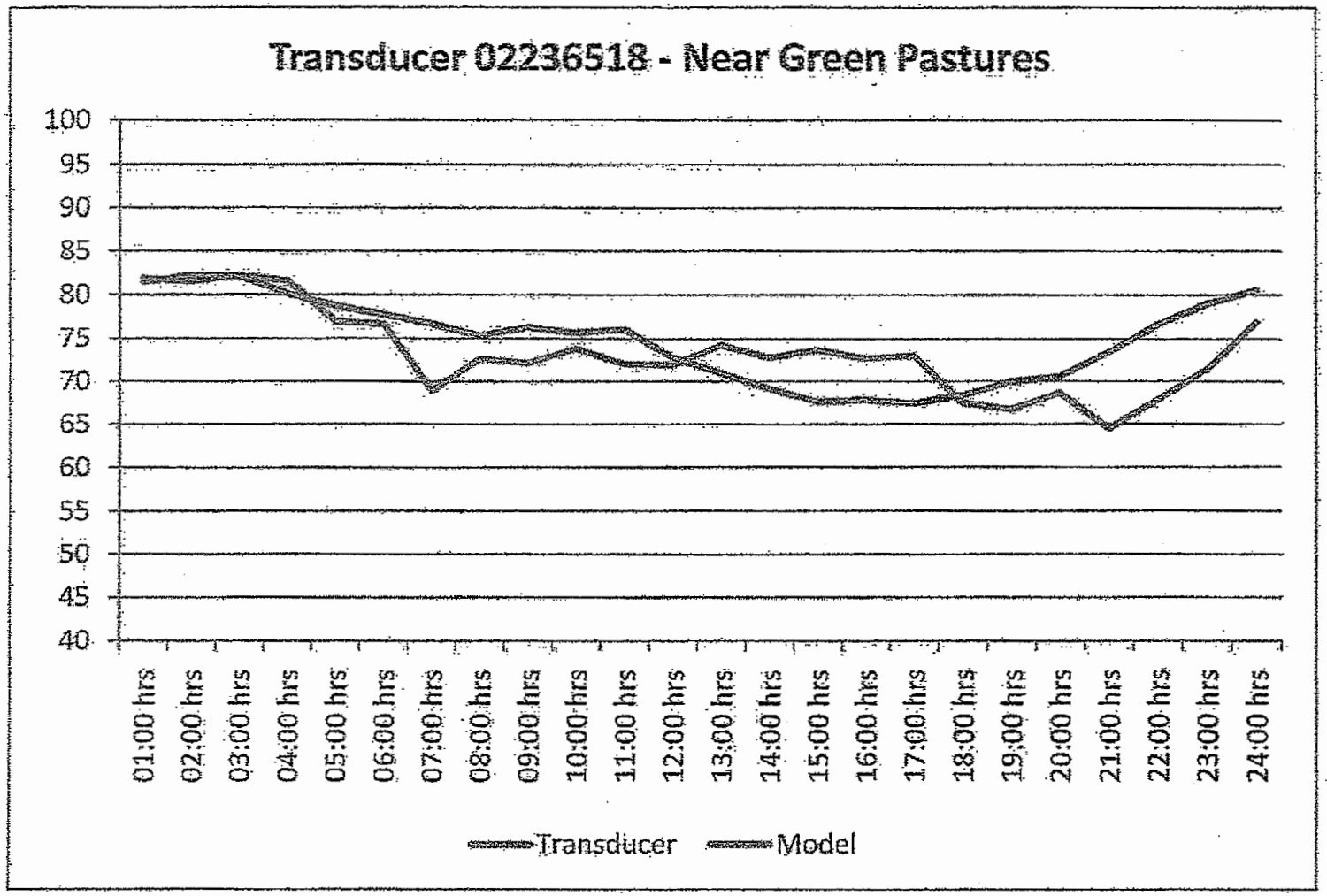

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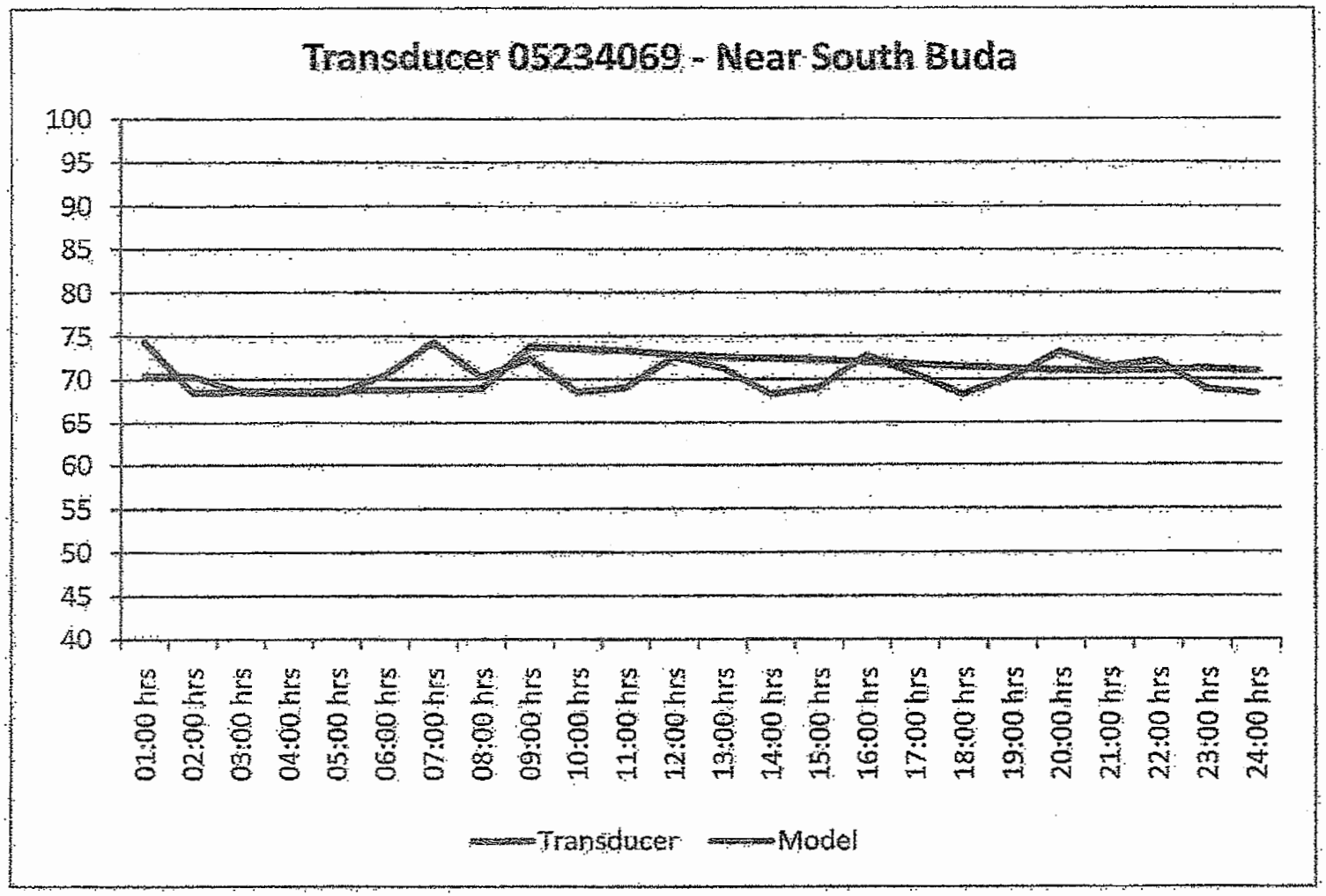

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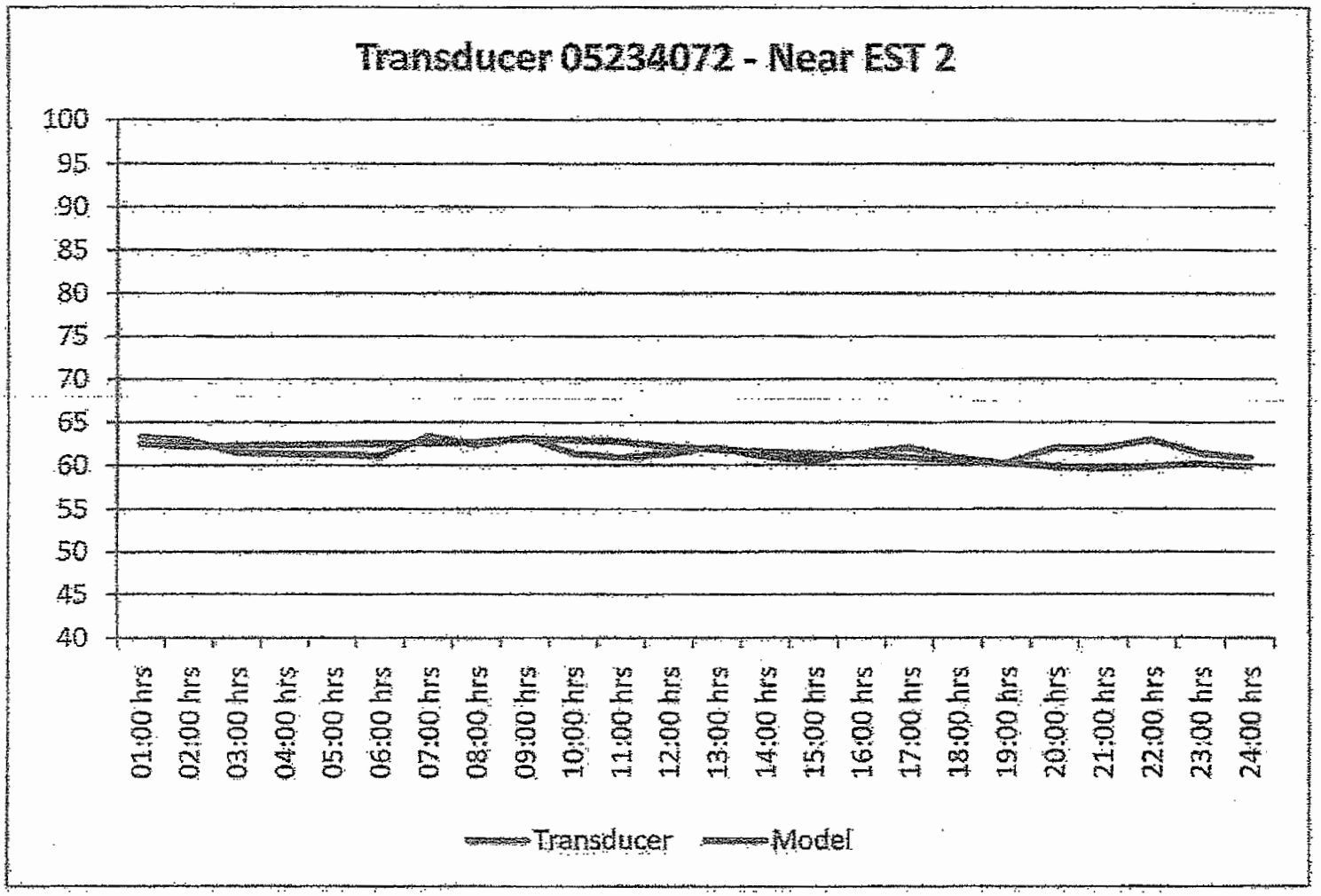

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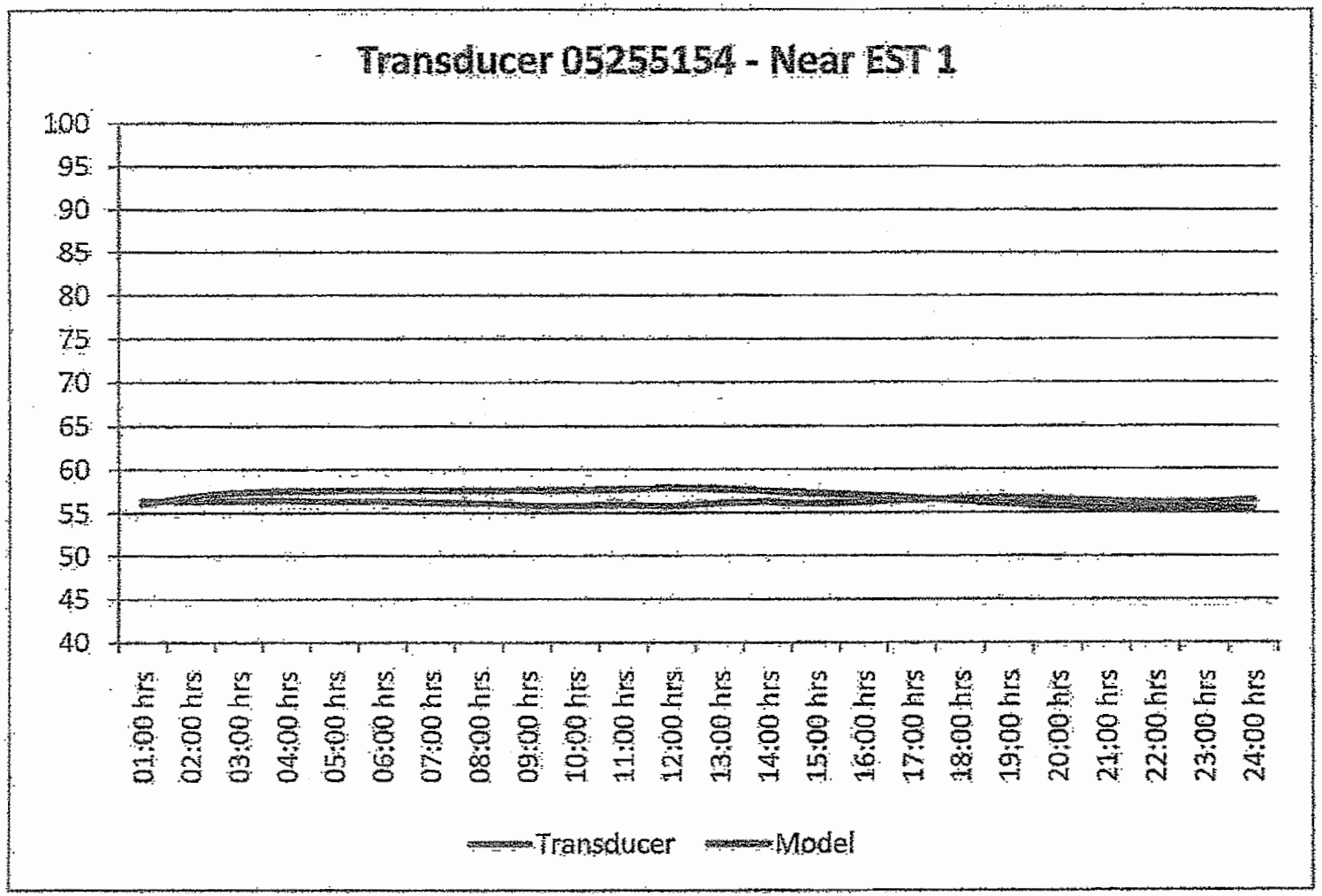

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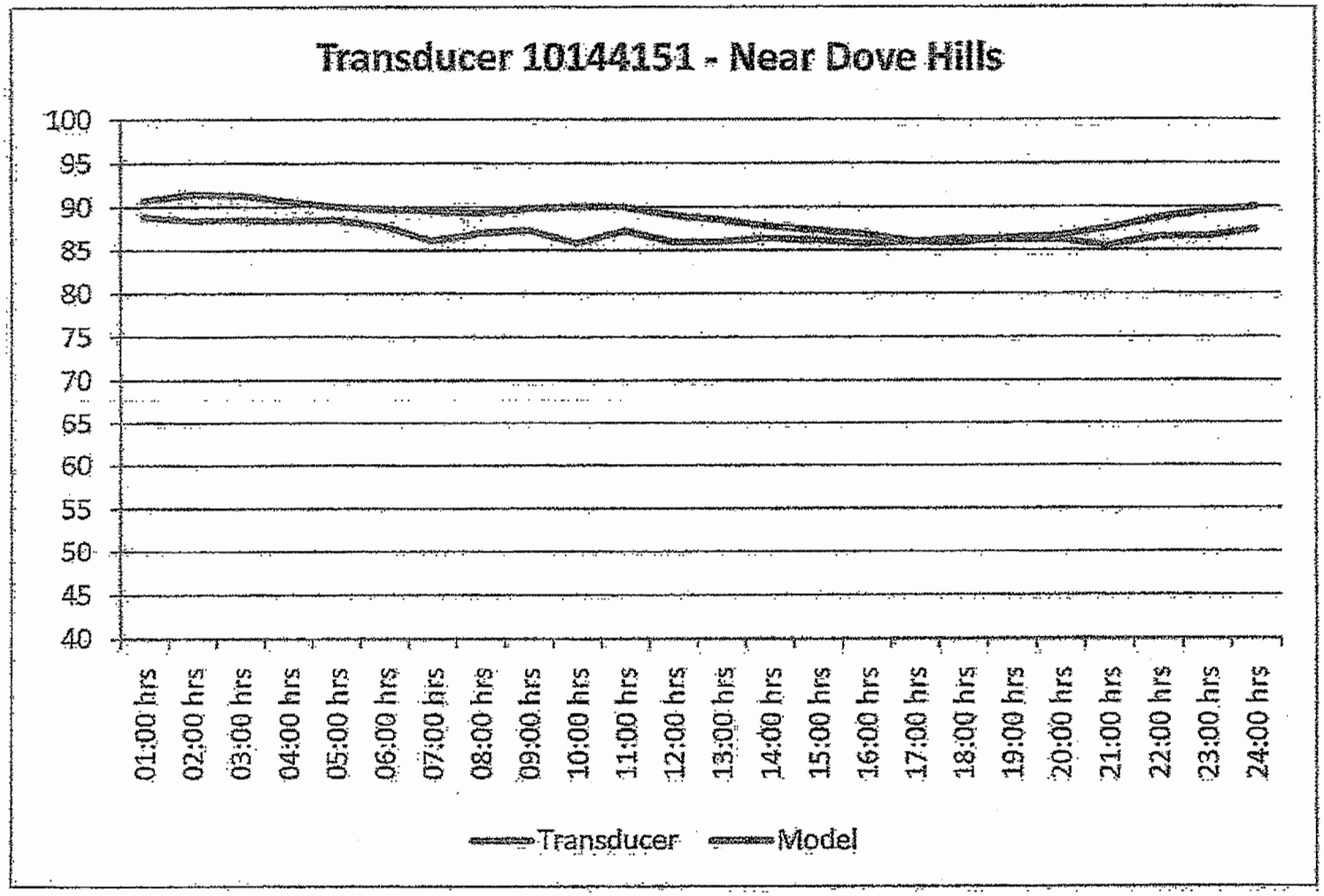

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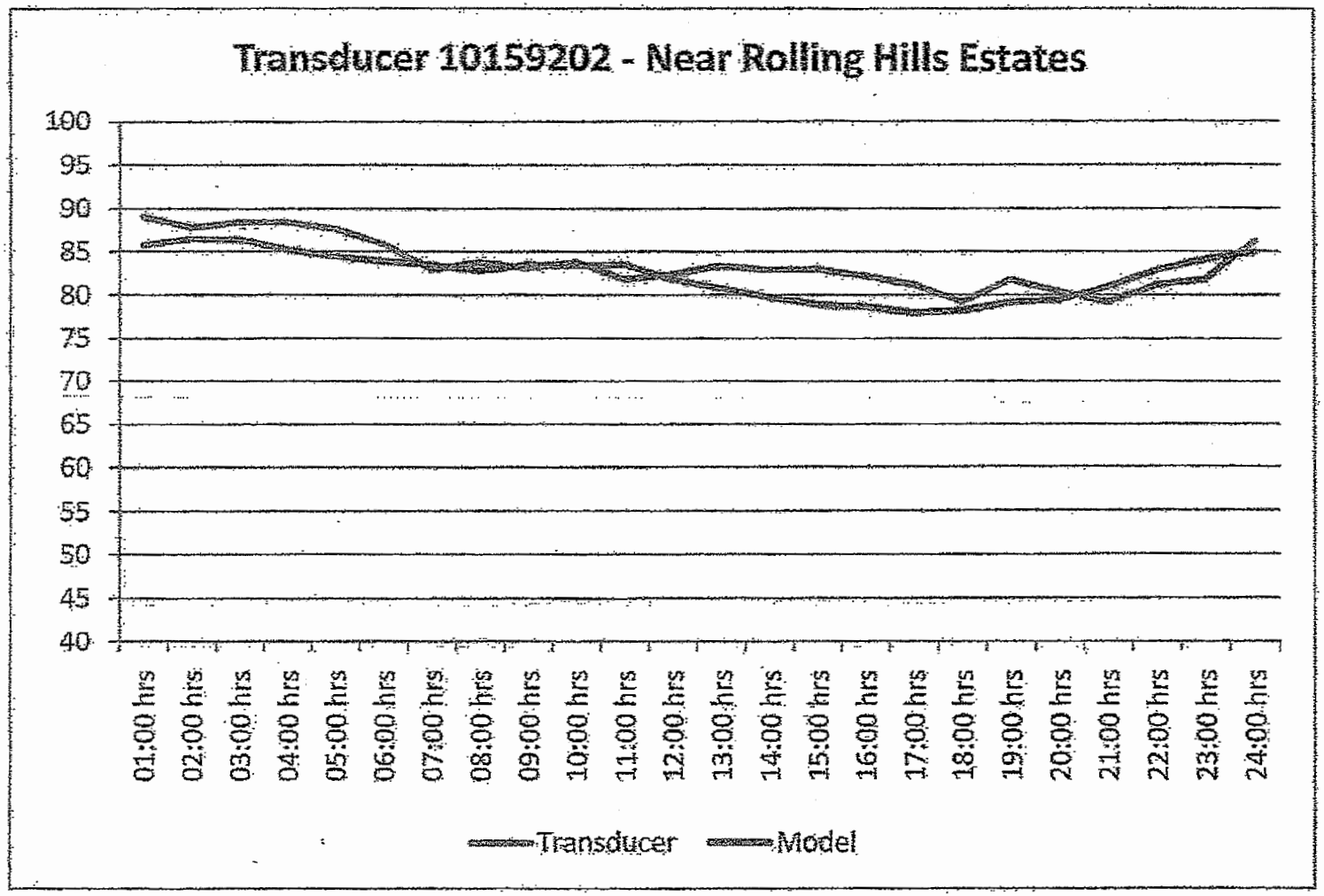

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Appendix C

CONDITION ASSESSMENT PROJECT MEMORANDUM

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carollo
Engineers, Working Wonders With Water

PROJECT MEMORANDUM

Project Name:	Plum Creek Master Plan	**Date:**	April 12, 2011
Client:	SouthWest Water Company	**Project Number:**	8493B.00
Prepared By:	Cara Wilson		
Reviewed By:	Richard Humpherys		
Subject:	Visual Condition Assessment		

1.0 PURPOSE

The purpose of this memorandum is to summarize the approach, findings, and recommendations of the visual condition assessment of the Plum Creek Utility Company (Plum Creek) water distribution facilities. This information will be incorporated into the overall recommendations for system-wide capital planning within the Plum Creek Master Plan conducted for the SouthWest Water Company (SWWC).

2.0 SITE VISIT PREPARATION

Based on data provided by SWWC, an inventory of the major above ground assets of the Plum Creek water distribution system was developed. This inventory has been organized by major unit process within each facility. As possible, existing data was used to identify capacity, location, and other information applicable to the assessment.

3.0 VISUAL CONDITION ASSESSMENT

The condition assessment is a reconnaissance-level field evaluation of key assets conducted by a multi-disciplined engineering team. The team includes an assessment coordinator to direct the process, take photographs to document existing asset condition, and to support the discipline engineers, as well as two senior, licensed engineers with expertise in mechanical and electrical/instrumentation engineering. The assessment team conducted the visual condition assessment with engineering and operations SWWC staff and interviewed them throughout the process regarding operations, maintenance, and performance history of the assets and facilities as a whole.

The information gathered during the condition assessment provides a standardized record of the asset condition specific to each discipline (Mechanical, Structural, Instrumentation, Electrical, and Piping). Component information such as the manufacturer, design criteria or capacity, and

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installation year were noted as possible. The existing condition of the assets was documented with digital photos.

The condition ranking scale used in the field evaluation is an internationally accepted, industry-wide standard for designating asset condition, as defined in the International Infrastructure Management Manual (2006). The condition rankings are expressed as the amount of repair needed to return an asset to its original (perfect) condition. The condition rankings and descriptions are presented in Table 1.

Table 1 Condition Ranking Definitions
Plum Creek Master Plan
SouthWest Water Company

Condition Ranking	Descriptive Definition	Amount of Repair Needed
1	Very good	0
2	Minor defects	0 - 10%
3	Requires Significant Maintenance	11 - 20%
4	Requires Rehabilitation	21 - 40%
5	Unserviceable	>= 60%

The Plum Creek facilities visited as part of the condition assessment are listed below:

Pump Stations:
- Pump Station No. 2
- Pump Station No. 3
- Pump Station No. 4

Groundwater Wells:
- Well No. 1
- Well No. 2
- Well No. 3
- Well No. 4

Elevated Storage Tanks:
- Elevated Storage Tank No. 1 (Amberwood)
- Elevated Storage Tank No. 2

Ground Storage Tanks:
- PS 2 Ground Storage Tank No. 1
- PS 2 Ground Storage Tank No. 2
- PS 3 Ground Storage Tank
- PS 4 Ground Storage Tank No. 1
- PS 4 Ground Storage Tank No. 2
- Goforth Ground Storage Tank
- Dove Hills Ground Storage Tank

A map of the Plum Creek facilities and distribution system is presented in Appendix A.

4.0 RESULTS

The Plum Creek facilities as a whole have been well maintained since their installation. As a result, nearly all of the assets are currently in fair to good condition. However, a few assets require renewal or replacement as a result of aging or service conditions. A list of the assets with a condition of 4 (Requires Rehabilitation) or 5 (Unserviceable) is presented in Table 2, below. A complete list of the Plum Creek assets and their current condition is provided in Appendix B.

Table 2	Plum Creek Assets in Poor Condition Plum Creek Master Plan SouthWest Water Company				
Facility	Address	Asset	Notes	Installation Year	Condition
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Electrical Room	Unconditioned. Electrical equipment (PLC and RVSS) has failed due to high temperatures in room.	1973	4
Goforth	435 Cody Lane, Kyle, TX 78640	GST	Abandoned in 2000. GST float level is broken. Ultrafab steel tank (30,000 gal). Tank may be salvageable for future use (requires inspection, paint).	1997	4
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Above ground piping	Significant corrosion.	UNK	4

5.0 R&R RECOMMENDATIONS

A primary goal of the Master Plan is to identify existing facilities in need of renewal and replacement (R&R) capital expenditures in the near future. Based on the results of the condition assessment, it is recommended that the R&R strategies presented below be implemented to address the condition-related issues associated with the Plum Creek facilities:

Well No. 1

Well No. 1 was constructed in 1973 and is very near the end of it's expected useful life. During that time, the electrical room has remained unconditioned, resulting in an environment which cannot support the long-term functionality of the electrical assets contained within the building. Operations staff confirm that the Programmable Logic Controller (PLC) and Reduced Voltage Soft Start (RVSS) assets have failed due to the oppressively high temperatures present in the electrical room. It is recommended that this facility be conditioned for the future long-term viability of the electrical assets.

Goforth Ground Storage Tank

The Goforth facility has been abandoned since 2000. As a result, many assets are in poor condition and are unserviceable. However, the 30,000 gallon steel GST may be salvageable and used for future storage needs at an alternative location. If it is determined that this additional storage may be useful for future purposes, it is recommended that a full inspection be conducted of the tank (including the tank interior) to determine the long-term functionality of this asset.

Dove Hills Ground Storage Tank

The Dove Hills facility has been abandoned since 2002 when EST No. 1 was put on-line. As a result, many assets are in poor condition and are unserviceable. This site is currently being used as a storage location for spare and unused parts. Operations staff indicate that there may be some value in restoring the 66,800-gallon ground storage tank to good condition to provide service to the approximately 175 nearby customers. Should the additional storage be needed, it is recommended that a full inspection be conducted of the tank to determine the long-term functionality of this asset. If this facility is brought back into service, it is also recommended that the leaking underground check valve be replaced and the storage building be repaired to maintain the condition of the assets stored within.

General Repair

In addition to the repair / rehabilitation efforts mentioned above, it is recommended that other, more general upgrades be made to increase the safety and long-term reliability of the Plum Creek water system:

- Adjust and anchor pipe supports throughout the Plum Creek system.
- Repaint piping or replace corroded piping throughout the Plum Creek system.

6.0 NEXT STEPS

6.1 Ongoing Condition Assessments

To continue the accurate and timely identification of future R&R capital projects, it is recommended that condition assessments of all of Saw's above-ground assets be conducted on a regular basis. Accordingly, it is recommended that assets in poor condition (4 or 5) be assessed annually, and a comprehensive assessment of all of the above ground assets be conducted every three to five years. New assets (installed within the past year) should be evaluated concurrent to the comprehensive assessment so that asset-specific condition deterioration curves (and the associated life expectancy) can be developed.

6.2 Risk Assessments

It is also recommended that a risk evaluation of the buried infrastructure be conducted to identify high-risk, high-cost piping. Buried piping comprises the majority of infrastructure value, and a methodical approach to identifying the areas at high risk of failure can optimize annual R&R expenditures on below-ground piping by focusing efforts on the highest priority areas. The results of this effort will provide SWWC the information needed to make critical planning decisions on the long-term renewal and replacement of its buried infrastructure.

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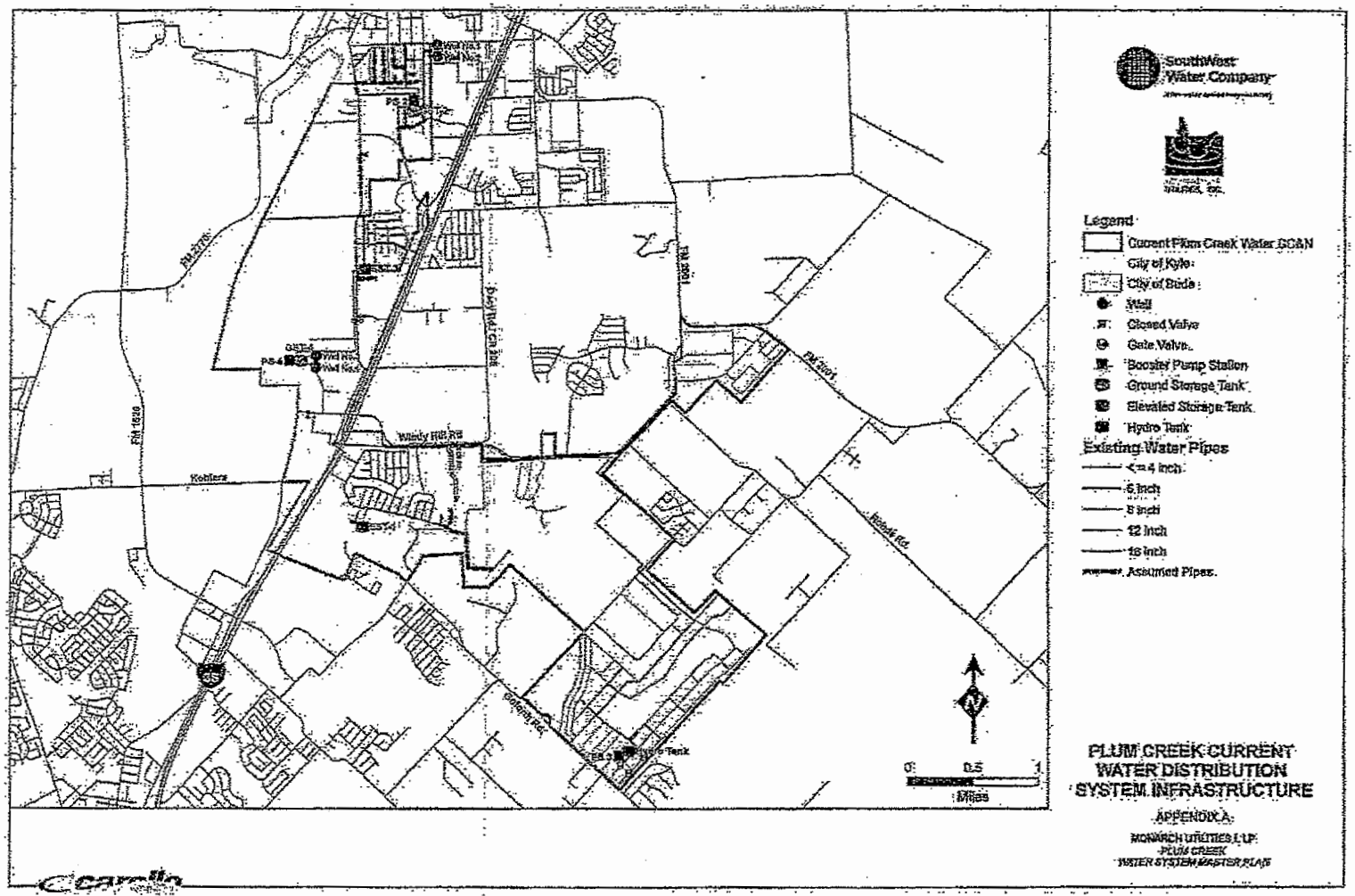
APPENDIX A – PLUM CREEK DISTRIBUTION SYSTEM MAP



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APPENDIX B – PLUM CREEK ASSET CONDITION RANKING

SouthWest Water Company
Plum Creek Master Plan
Visual Condition Assessment: February 25, 2011

Mechanical Asset Assessor: Troy Jordan
Elec / I&C Asset Assessor: Kevin Angle
Structural Asset Assessor: Troy Jordan / Neal Michel

General Asset Info					Condition				Mechanical								I&C				Electrical						Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Instrumentation / Electrical	Visible Piping	Structural	Vibration?	Noise?	Corrosion?	Leaks?	Bolting bolts	Parts missing?	Repair parts available?	Adequate for service?	Critical instruments functioning?	Alarms functioning?	Meets sizing?	Repair parts available?	Functional?	Corrosion?	Clean enough?	Repair parts available?	Meets code requirements?	Meets capacity requirements?	Corrosion?	Leaks?	Paint in good condition?	Spalling concrete?	Cracks?	Corrosion?	Visible deformities?	Foundation settling?
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 1	Never been replaced-20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																		
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 2	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																		
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 3	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																		
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pump 4	Never been replaced. 20 hp, 400 gpm	2006	1				N	N	N	N	N	N	Y	Y																		
Well 3	3515 Dry Hole Road, Kyle, TX 78640	Well 3	Replaced fall 2010 (original 2005). No pipe support. 125 hp. Check valve rattles. Per contract agreement, may not.	2010	1				N	N	N	N	N	N	Y	Y																		
Well 4	3515 Dry Hole Road, Kyle, TX 78640	Well 4	Shaft seized up and required replacement in fall 2010 (original 2007). 150 hp. Previously was vertical turbine	2010	1				N	N	N	N	N	N	Y	Y																		
PS 4 / GST 1	3515 Dry Hole Road, Kyle, TX 78640	GST 1	Steel tank (not painted)-125,000 gal. Gravity flow into GS-1.	2006				1																						N/A	N	N	N	N
PS 4 / GST 2	3515 Dry Hole Road, Kyle, TX 78640	GST 2	Steel tank (not painted). 211,000 gal. Fed by wells 3 and 4.	2006				1																						N/A	N	N	N	N
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Sodium Hypochlorite Disinfection		2006	1				N	N	N	N	N	N	Y	Y																		
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Above ground piping		2006	1																						N	N	Y					
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Transformer	30 KVA. Replaced October 2010.	2010		1															Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Disconnects		2006		1															Y	N	Y	Y	Y	Y								

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General Asset Info					Condition				Mechanical																															
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Instrumentation / Electrical	Visible Piping	Structural	Vibration?	Noise?	Cavitation?	Leaks?	Fluid leak?	Parts missing?	Repair parts available?	Adequate for service?	Critical indicators functioning?	Alarms functioning?	Parts missing?	Repair parts available?	Functional?	Cardinality	Clean contacts?	Repair parts available?	Meets code requirements?	Meets capacity requirements?	Corrosion?	Leaks?	Paint in good condition?	Settling corrected?	Cracks?	Corrosion?	Visible deformation?	Foundation settling?
PS 4	3515 Dry Hole Road, Kyle, TX 78640	Pulsation		2006		1															Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	RVSS Starters		2006		1															Y	N	Y	Y	Y	Y								
PS 4	3515 Dry Hole Road, Kyle, TX 78640	PLC		2006		1															Y	N	Y	Y	Y	Y								
Well 3	3515 Dry Hole Road, Kyle, TX 78640	Well 3 Pressure Gauge		2006		1															Y	N	Y	Y	Y	Y								
Well 4	3515 Dry Hole Road, Kyle, TX 78640	Well 4 Pressure Gauge		2006		1															Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	EST 2	Has cathodic protection. 250,000 gal. Filled by PS 2. Foundation good.	2007				1																						N	N	N	N	N
ES 2	2101 S. Loop 4, Buda, TX 78610	Above ground piping		2007			1																				N	N	Y					
ES 2	2101 S. Loop 4, Buda, TX 78610	Antenna		2007		1															Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	PLC		2007		1															Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	Pressure Gauge		2007		1															Y	N	Y	Y	Y	Y								
ES 2	2101 S. Loop 4, Buda, TX 78610	Lighting Panel		2007		1															Y	N	Y	Y	Y	Y								
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Pump 1	1400 gpm. 100 hp booster pump.	2006	2				N	N	N	N	N	N	Y	Y																		
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Pump 2	1400 gpm.	2006	2				N	N	N	N	N	N	Y	Y																		

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General Asset Info					Condition				Mechanical								M&C				Electrical						Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Corrosion/Oxidation / Electrical	Visible Piping	Structural	Vibration?	Noise?	Overheat?	Leaks?	Running Hot?	Parts missing?	Repair parts available?	Alternate for service?	Critical Indication functioning?	Alarms functioning?	Parts missing?	Repair parts available?	Functional?	Corrosion?	Clean contacts?	Repair wires available?	Check/add mounting points?	Meets capacity requirements?	Corrosion?	Leaks?	Valve in good condition?	Spalling concrete?	Cracks?	Corrosion?	Visible deformities?	Foundation settling?
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Above ground piping	No reinforcing steel in pipe supports. Consider putting a thrust block behind pipe supports to minimize impact from	2006			4																				N	N	4					
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Site	Remove old pump house debris. Store spare pump parts inside. Discharge header pipe supports need to be	2006																														
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Mini PowerCenter	10 kVA.	2006		1															Y	N	Y	Y	Y	Y								
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	AutoDialer		2006		1															Y	N	Y	Y	Y	Y								
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	PLC		2006		1															Y	N	Y	Y	Y	Y								
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Pressure Gauge		2006		1															Y	N	Y	Y	Y	Y								
PS 2	XXX Bonita Vista Drive, Buda, TX 78610	Service Disconnect		2006		1															Y	N	Y	Y	Y	Y								
PS 2 / GST 1	XXX Bonita Vista Drive, Buda, TX 78610	GST 1		2006				2																						N	N	N	N	N
PS 2 / GST 2	XXX Bonita Vista Drive, Buda, TX 78610	GST 2	Minor cracking in flange of expansion joint.	2008				2																						N	N	N	N	N
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Well 1	358 gpm. Serviced in 2010.	1973	2				N	N	N	N	N	N	Y	N																		
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Electrical Room	Unconditioned. Electrical equipment (PLC and RVSS) has failed due to high temperatures in room.	1973		4																								N/A	N	N	N	N
Well 1	307 Bonita Vista Drive, Buda, TX 78610	PLC		1973		1																												
Well 1	307 Bonita Vista Drive, Buda, TX 78610	RVSS		1973		1																												

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General Asset Info					Condition				Mechanical								I&C				Electrical						Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Instrumentation / Electrical	Visible Piping	Structural	Vibrating?	Rotor?	Corrosion?	Leaks?	Pumping hot?	Parts missing?	Repair parts available?	Adequate for service?	Critical indicators functioning?	Alarms functioning?	Parts missing?	Repair parts available?	Functional?	Corrosion?	Clean contacts?	Replace parts available?	Meets cable requirements?	Meets capacity requirements?	Corrosion?	Leaks?	Paint in good condition?	Spalling concrete?	Cracks?	Corrosion?	Visible deformation?	Foundation venting?
Well 1	307 Bonita Vista Drive, Buda, TX 78610.	Old Control Cabinet		1973		2															Y	N	Y	Y	Y	Y								
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Antenna		1973		1															Y	N	Y	Y	Y	Y								
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Service Disconnect		1973		1															Y	N	Y	Y	Y	Y								
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Flow Meter		1973		1											Y	Y	N	Y														
Well 1	307 Bonita Vista Drive, Buda, TX 78610	Mini PowerCenter		1973		1															Y	N	Y	Y	Y	Y								
Well 1	307 Bonita Vista Drive, Buda, TX 78610	AutoDialer		1973		2															Y	N	Y	Y	Y	Y								
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Well 2	448 gpm. Not been recently serviced. Aluminum structure around Well 2 is too heavy for one person to open. Well 2.	1973	2				N	N	N	N	N	N	Y	N																		
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Service Disconnect		1973		1															Y	N	Y	Y	Y	Y								
Well 2	307 Bonita Vista Drive, Buda, TX 78610.	RVSS		1973		1															Y	N	Y	Y	Y	Y								
Well 1 & 2	307 Bonita Vista Drive, Buda, TX 78610	Above ground piping	Wrapping is deteriorating.	1973	3																						N	N	N/A					
Well 2	307 Bonita Vista Drive, Buda, TX 78610	Building	Siding needs repair or replacement. Minor corrosion in chemical pump room.	1973	2																									N/A	N	Y	N	N
ES 1	109 Redwood Drive, Kyle, TX 78640	ESI 1	150,000 gal. Inspected 2010 by Corpomi. No cathodic protection - interior in good condition. Corroded near	2001				1																						N	N	N	N	N
ES 1	109 Redwood Drive, Kyle, TX 78640	AutoDialer		2001		1															Y	N	Y	Y	Y	Y								

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General Asset Info					Condition				Mechanical																																					
Facility	Address	Asset Name	Notes	Install Year	Mechanical	Instrumentation / Electrical	Visible Piping	Structural	Adequate?	Stable?	Corrosion?	Leaks?	Blocking list?	Parts missing?	Repair parts available?	Adequate for service?	Critical indicators functioning?	Alarms functioning?	Parts missing?	Repair parts available?	Supportable?	Corrosion?	Clean contacts?	Repair parts available?	Meets code requirements?	Meets capacity requirements?	Corroded?	Failed?	Paint in good condition?	Spalling/concrete?	Cracks?	Corrosion?	Visible deformities?	Foundation settling?
ES 1	109 Redwood Drive, Kyle, TX 78640	PLC		2001		4															Y	N	Y	Y	Y	Y								
ES 1	109 Redwood Drive, Kyle, TX 78640	Lighting Panel		2001		3															Y	N	Y	Y	Y	Y								
ES 1	109 Redwood Drive, Kyle, TX 78640	Pressure Gauge		2001		3															Y	N	Y	Y	Y	Y								
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	GST	66,800 gal. Abandoned since 2002 (when EST 1 was put in service).	UNK				3																										
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	General	Leaking buried check valve. No redundancy for these customers. Inflow and exit lines were tied together. Pumps	UNK																														
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Above ground piping	Significant corrosion.	UNK			4																											
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Building	Significant cracking. Spare 30 hp motors (2) and one pump. Holes in concrete cinder block walls. Building used for	UNK																														
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Lighting Panel		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Lighting Panel Disconnect		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Starters		UNK		3																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Service Disconnect		UNK		2																												
Dove Hills	1750 Windy Hill Road, Buda, TX 78610	Service Conductors	Routed through overgrown tree branches.	UNK		3																												
Goforth	435 Cody Lane, Kyle, TX 78640	GST	Abandoned in 2002. GST float level is broken. Ultimate steel tank (30,000 gal). Tank may be salvageable for future use	1997				4																										

STM_ACR002408

General Asset Info					Condition				Mechanical								HVAC				Electrical					Piping			Structural				
Facility	Address	Asset Name	Notes	Install Year	Washpoint	Instrumentation / Electrical	Visible Piping	Polyethylene	Vibration?	Noise?	Corrosion?	Leaks?	Running hot?	Parts missing?	Repair parts available?	Adequate for service?	Critical indicators functioning?	Alarms functioning?	Parts missing?	Repair parts available?	Functional?	Corrosion?	Clean contacts?	Repair parts available?	Meets code requirements?	Meets capacity requirements?	Corrosion?	Leaks?	Paint in good condition?	Spalling concrete?	Cracks?	Corrosion?	Visible deformation?	Foundation settling?
Goforth	435 Cody Lane, Kyle, TX 78640	Building	Concrete cinder block (30x12'), locked. Unable to enter to assess interior assets (if any).	1997				Y																									
Goforth	435 Cody Lane, Kyle, TX 78640	Power Panel		1997		2																											
PS 3 / GST	XX Summitt Drive, Kyle, TX 78640	GST	Temporary polyethylene tank used only to serve immediate neighbors. Replace with permanent tank to meet TCEQ.	2006	1																								N	N	N	N	N
PS 3	XX Summitt Drive, Kyle, TX 78640	Hydro-pneumatic tank	50 gal	2006	3																								N	N	N	N	N
PS 3	XX Summitt Drive, Kyle, TX 78640	Pump 1	3 hp. Baldor motor.	2006	1				N	N	N	N	N	N	Y	N																	
PS 3	XX Summitt Drive, Kyle, TX 78640	Pressure Gauge		2006		1															Y	N	Y	Y	Y	Y							
PS 3	XX Summitt Drive, Kyle, TX 78640	Controls / Starter		2006		2											Y	Y	N	Y													

5

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

File PWS 1050028/CO
CN 602740706
RN100837905

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 3, 2009

Mr. Paul D. Beaver, P.E.,
2111 Cornell
Richardson, TX 75081

Subject: Request for Minimum Alternative Capacity Requirement
Plum Creek - PWS I.D. #1050028
Hays County, Texas

Dear Mr. Beaver:

We received your letter, dated May 27, 2009 and associated data requesting that minimum alternative capacity requirements for the subject public water system be granted under the Texas Commission on Environmental Quality's (TCEQ) requirements specified in 30 TAC §290.45(g). Based on our review, we are granting new minimum alternative capacity requirements as follows:

Total production (surface + ground + purchased):	**0.44 gpm/connection**
Total storage capacity:	**146 gals/connection**
Service pump capacity (whichever is less):	**1.46 gpm/connection** **OR** **At least 1,000 gpm AND the ability to meet peak hourly demand with the largest pump out of service.** **OR** **0.44 gpm AND at least 146 gallons per connection elevated storage capacity**
Elevated storage capacity:	**73 gals/connection**
OR	
Pressure tank capacity:	**14.6 gals/connection**

Your submitted daily usage data indicated that a maximum daily demand day of 1,143,000 gallons occurred on June 28, 2008, with 2,084 active connections. Using a safety factor of 1.15, this results in an equivalency ratio of 0.73. The above minimum alternative capacity requirements were calculated using this equivalency ratio and the specifications in 30 TAC §290.45(g)(2).

These minimum alternative capacity requirements are contingent upon the continuing collection of daily usage data and the maintenance of records. All minimum alternative capacity requirements are subject to periodic review. They may be revised or revoked if water demand conditions change or if evidence is found that granting it has resulted in the degradation of potable water quality or quantity.

If you have any questions concerning this letter, or if we may be of further assistance, please contact me at the letterhead's address or by telephone at (512) 239-1407.

Sincerely,

Amy Rivera

Amy Rivera
Public Drinking Water Section - MC155
Water Supply Division

ALR

cc: TCEQ Austin Regional Office- R11
Ms. Vera Poe, P.E., TCEQ Utilities Technical Review Team - MC153
Mr. David L. Yohe, Regulatory Manager, Monarch Utilities I LP c/o Southwest Water Company, 9511 RR620 N, Austin, TX, 78726-2908

6

Murfee Engineering Company

April 25, 2006

David Laughlin, P.E.
Team Leader
Utilities Technical Review Team
Water Supply Division
TCEQ
PO Box 13087
MC-153
Austin, TX 78711-3087

Re: Monarch Utilities Proposed 211,000 gallon ground storage tank
Request for expedited plan review
PWS #: 1050028
CCN #: 12983

Dear Mr. Laughlin,

Monarch Utilities recently purchased and operates the Plum Creek Water System located in Hays County immediately south of the City of Buda. The Monarch Utilities water service area includes the Meadows at Buda, Amberwoods, Indian Paint Brush Dove Hill Estates, Phillips Ranch, Green Pastures, and Rolling Hills Estates as shown on the attached Monarch Utilities water system map. As is shown, the service area extends south along and west of IH35 straddling Loop 4 to just south of the intersection of IH35 and Loop 4, thence east across IH 35. Monarch Utilities currently serves approximately 2000 connections but has a projected service buildout of approximately 6000 connections.

Source raw water is derived exclusively from ground water resources requiring only disinfection for treatment. The service area west of IH35 is served primarily from wells number 1 and 2 which pump to a 84,000 gallon ground storage tank / pump station (north pump station). Pressure is maintained with a 5000 gallon hydropneumatic system. These wells, which were recently rehabilitated, have a service yield of approximately 700 gpm collectively. The service area east of IH35 is served primarily from wells number 3 and 4 which pump directly into a 125,000 gallon ground storage tank / pump station (south pump station) water is subsequently pumped to a 250,000 gallon elevated storage tank located in Amberwoods. The water supply wells have a service yield of approximately 500 gpm each but cannot be operated simultaneously owing to draw down influence. Therefore the firm yield of those two wells is approximately 500 gpm.

Monarch Utilities has initiated design of several major system improvements to ensure adequate water capacity and supply. First, these improvements include the completion of a fifth water supply well (CHA well) with a 12 inch raw water supply main to increase supply to the north pump station. Initial yield from this well will be an

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additional 500 gpm with a possible increased yield to 1500 gpm once permits are secured. Additional proposed improvements at the north pump station include a second 141,000 gallon ground storage tank, a 2000 gpm vertical turbine replacement pump station, the installation of 12-inch and16 inch water transmission mains, and a 250,000 elevated storage tank. This new pump station and offsite transmission main are designed to integrate with the south pump station to provide additional water for service to the western service area.

It was recently determined that the existing 125,000 gallon ground storage tank at the south pump station site is leaking severely. Investigations indicate that this tank is leaking from the bottom or floor of the tank due to past chlorination practices. As the integrity of this tank is suspect, Monarch Utilities proposes to immediately construct a parallel 211,000 gallon ground storage tank adjacent to the leaking tank to allow the leaking tank to be taken off-line and repaired prior to failure. The enclosed plans and specification are for your consideration and approval for the construction of this second 211,000 gallon ground storage tank. As this concern is considered as emergency owing to the recent leak observation it is requested that TCEQ consider an expedited review.

I appreciate your consideration for this request. If you have any questions please call.

Sincerely,

David Malish, P.E.

7

06/17/2013
10:27:06AM

Texas Commission on Environmental Quality
Water System Data Sheet

WSDSR

PWS ID	PWS Name	Central Registry RN
1050028	PLUM CREEK	RN100837905

Organization/Customer *	Central Registry CN
MONARCH UTILITIES I LP	CN602740706

* Regulatory mail will be addressed to this organization / person

Responsible Official **	Title
TIM WILLIFORD	ENV MANAGER

License Type	License Number

Mailing Address:

Street Address	C/O or Address Line 2

City	State	Zip

Business Phone	Other Phone	Other Phone Type	Email

** Regulatory mail will be addressed to this person

PWS Contact - If different than above ***	Title
GARY ROSE	

License Type	License Number

Mailing Address for PWS Primary Contact:

Street Address	C/O or Address Line 2
1620 GRAND AVENUE PKWY STE 140	

City	State	Zip
PFLUGERVILLE	TX	78660 - 2185

Business Phone	Other Phone	Other Phone Type	Email

*** Copies of most regulatory mail will be addressed to this person

Emergency Contact Name ****	Emergency Phone	Emergency Email
TIM WILLIFORD		

License Type	License Number

**** This contact information will be used only in the event of an emergency

Owner Type	Owner Type Options: AFFECTED COUNTIES, COUNTY, DISTRICT/AUTHORITY, EXEMPT, FEDERAL GOVERNMENT, INVESTOR, MUNICIPALITY, NATIVE AMERICAN, PRIVATE, SUBMETER \ ALLOCATION, STATE GOVERNMENT, NOT RETAIL PUBLIC UTILITIES, WATER SUPPLY CORPORATION, MISC/UNKNOWN
INVESTOR	

System Type	System Type Options: SB 361, COMMUNITY, COMMUNITY (NON-GOVERNMENT OWNED), TRANSIENT/NON-COMMUNITY, NON-PUBLIC, NON-TRANSIENT/NON-COMMUNITY
COMMUNITY	

Customer Class	Customer Category	Population Served	# of Connect	# of Meters	# I/C w/other PWS
RESIDENTIAL	**RESIDENTIAL AREA**	**6,396**	**2,132**	**2,238**	**0**

Total Product (MGD)	Average Daily Consump.	Total Storage (MG)	Elev. Storage (MG)	Booster Pump Cap. (MGD)	Aux.Prod.Cap. Max.Pur.Cap.(MGD)	Pressure Tank Cap.(MG)
2.657	**0.571**	**1.065**	**0.500**	**7.257**	**0.000**	**0.00008**

Activity Status	Deactivation Date	Reason
ACTIVE		

Operator Grade	Number
WATER GRADE A	**1**
WATER GRADE C GROUND	**1**
WATER GRADE D	**1**

Last Survey Date	Surveyor	Survey Type	Code	Region	County	Def.Score
05/31/2011	**LAWRENCE KING**	**SURVEY**		**11**	**HAYS**	**0**
07/23/2008	**CHAD AHLGREN**	**SURVEY**		**11**	**HAYS**	**2**
06/02/2005	**TERRY WEBB**	**SURVEY**		**11**	**HAYS**	**10**

(Entry Point)

Entry Point	EP Name/Source Summation (Activity Status)	Plant Name (Activity Status)	WUD Plant Num	Chemical Mon Type	Chem Sample Point	Distribution Mon Type	Dist Sample Point
001	**SAMPLE TAP AT ? / EDWARDS(A)**	**PLANT - BONITA VISTA(A)**	**7321**		**No**		**No**

Train:	**(Unnamed)**

(Treatments)

Disinfection Zone	Treatment Sequence	Objective	Process	Treatment
	1	**D**	**423**	**HYPOCHLORINATION(PRE)**

(Active Sources)

Source Number	Source Name (Activity Status)	Operational Status	Source Type	Depth	Tested GPM	Rated GPM
G1050028A	**1 - BONITA VISTA DR / PS1(A)**	**O**	**G**	**670**	**615**	**450**

Drill Date	Well Data
5/20/1974	**EDWARDS AND ASSOCIAT**

GPS Latitude (decimal)	GPS Longitude (decimal)	GPS Elevation	GPS Date	GPS Cert. No.	Seller
Not Available	**Not Available**	**Not Available**	**Not Available**	**Not Available**	

Source Number	Source Name (Activity Status)	Operational Status	Source Type	Depth	Tested GPM	Rated GPM
G1050028B	**2 - BONITA VISTA DR 100' N OF WELL 1 / PS1(A)**	**O**	**G**	**720**	**280**	**250**

Drill Date	Well Data
11/4/1983	**EDWARDS AND ASSOCIAT**

GPS Latitude (decimal)	GPS Longitude (decimal)	GPS Elevation	GPS Date	GPS Cert. No.	Seller
Not Available	**Not Available**	**Not Available**	**Not Available**	**Not Available**	

(Inactive/Offline Sources)

(No inactive Sources associated with this EP/Plant)

(Entry Point)							
Entry Point	EP Name/Source Summation (Activity Status)	Plant Name (Activity Status)	WUD Plant Num	Chemical Mon Type	Chem Sample Point	Distribution Mon Type	Dist Sample Point
002	**STORAGE TANK CR210 / EDWARDS(A)**	**PLANT 2 - CR 210(A)**	**19499**		**No**		**No**

Train:	**(Unnamed)**

(Treatments)				
Disinfection Zone	Treatment Sequence	Objective	Process	Treatment
	1	**D**	**423**	**HYPOCHLORINATION(PRE)**

(Active Sources)						
Source Number	Source Name (Activity Status)	Operational Status	Source Type	Depth	Tested GPM	Rated GPM
G1050028C	**3 - CR 210 N WELL / PS2(A)**	**O**	**G**	**790**	**490**	**460**
Drill Date	Well Data					
5/22/2000						
GPS Latitude (decimal)	GPS Longitude (decimal)	GPS Elevation	GPS Date	GPS Cert. No.	Seller	
Not Available	**Not Available**	**Not Available**	**Not Available**	**Not Available**		
Source Number	Source Name (Activity Status)	Operational Status	Source Type	Depth	Tested GPM	Rated GPM
G1050028D	**4 - CR 210 S WELL / PS2(A)**	**O**	**G**	**800**	**460**	**425**
Drill Date	Well Data					
7/11/2005						
GPS Latitude (decimal)	GPS Longitude (decimal)	GPS Elevation	GPS Date	GPS Cert. No.	Seller	
Not Available	**Not Available**	**Not Available**	**Not Available**	**Not Available**		

(Inactive/Offline Sources)
(No inactive Sources associated with this EP/Plant)

Code Explanations
Monitoring Type Codes: (GW) GROUNDWATER , (GWP) GROUNDWATER - PURCHASED , (GUP) GROUNDWATER UNDER THE INFLUENCE - PURCHASED , (SWP) SURFACE WATER - PURCHASED , (GU) GROUNDWATER UNDER THE INFLUENCE OF SURFACE WATER , (N) NO SOURCES , (SW) SURFACE WATER
Activity Status Codes: (A) ACTIVE , (C) CCN CANCELLED , (D) DELETED/DISSOLVED , (G) SB 361 , (I) INACTIVE , (M) MERGED/ANNEXED , (N) NON-PUBLIC , (P) PROPOSED , (U) UNKNOWN-NO ACTIVITY OR NON-RESPONSIVE , (W) UTILITY WATER SYS XFER
Operational Status Codes: (C) CAPPED , (D) DEMAND , (E) EMERGENCY , (F) FORMER PWS SOURCE , (I) INACTIVE PWS SYSTEM , (N) NON-DRINKING WATER , (O) OPERATING , (P) PLUGGED , (T) TEST , (Y) PWS NOT ACTIVE AND NOT EXPECTED TO BE SO
Source Types: (G) GROUND WATER , (S) SURFACE WATER , (U) GROUND WATER UNDER THE INFLUENCE

8

Monarch Utilities I, L.P.
Rate Application Highlights

SouthWest
Water Company

EXECUTIVE SUMMARY

Monarch Utilities I, L.P. ("Monarch"), a subsidiary of SouthWest Water Company ("SWWC") owns and operates 96 water and 15 sewer systems in 32 counties across Texas. In May 2011, Monarch filed an application with the Texas Commission on Environmental Quality ("TCEQ") to increase its water and sewer rates for Monarch's recently consolidated customer base outside City limits.

Monarch has not filed for a rate increase since 2007.

Rate increases for Monarch customers will average approximately 62.3 percent for water and 33.6 percent for sewer service. The dollar amount billed for water will vary depending on the customer's usage. Sewer bills will now include a gallonage charge component based on winter average water usage. To moderate the impact on water customers, Monarch has proposed a two-step increase in water rates over 11 months.

The first step in the water rate increase goes into effect on August 1, 2011, and will be reflected on customers' September bills. The new water monthly minimum charge will be $53.47. The gallonage charge will be $7.00 per 1,000 gallons for usage from zero to 20,000 gallons. The gallonage charge will be $9.00 per 1,000 gallons over 20,000 gallons. The water monthly minimum charge will increase to $59.82 on July 1, 2012. The new sewer monthly minimum charge of $46.59 will go into effect on August 1, 2011. The new sewer gallonage charge will be $5.64 per 1,000 gallons.

Almost two thirds of the rate increase is related to invested capital. In the past five years, Monarch has invested nearly $70 million in system and customer service improvements. Nearly $62 million was invested to address regulatory compliance deficiencies existing in the water and sewer systems acquired by SouthWest Water since 2004.

Specifically, system and customer service improvements included in the nearly $70-million investment are:

- Drilling new water supply wells and constructing new storage tanks and water pumping stations.
- Upgrading wastewater treatment plants to meet state and federal discharge permit requirements.
- Developing infrastructure and purchasing water from third parties to accommodate customers who do not have an adequate groundwater supply, including a $15 million investment to provide Hornsby Bend customers with Blue Water, a new water supply project designed to improve reliability and water quality.
- Investing in back-up power for treatment facilities to enable rapid recovery from hurricanes and other natural disasters that could affect customers in the Gulf Coast area.
- Establishing a Water Leak Relief Program to allow customers to manage billing affordably in the event that pipes on the customer's property leak.

SouthWest
Water Company

- Investing $7 million in advanced meter technology that results in higher accuracy in billing and allows faster leak detection. The company now calls the customer and informs them of a potential leak using this new technology, possibly saving hundreds of dollars.

- Installing an integrated voice response system that allows customers to pay via credit card and to check account balances over the phone.

- Improving customer service, such as the reorganization of field offices to enable personnel to more effectively respond to customer service requests.

- Creating an agreement with Walmart, CheckFree and Fidelity Express, allowing customers the option to make payments at various store locations.

These environmentally responsible system and customer service improvements allow Monarch to provide its customers with clean, reliable water and wastewater services, meet the TCEQ regulatory requirements, and protect local streams and waterways.

Monarch's sizeable investment across the state means the utility's costs are significantly higher and can no longer be sustained by the current rates.

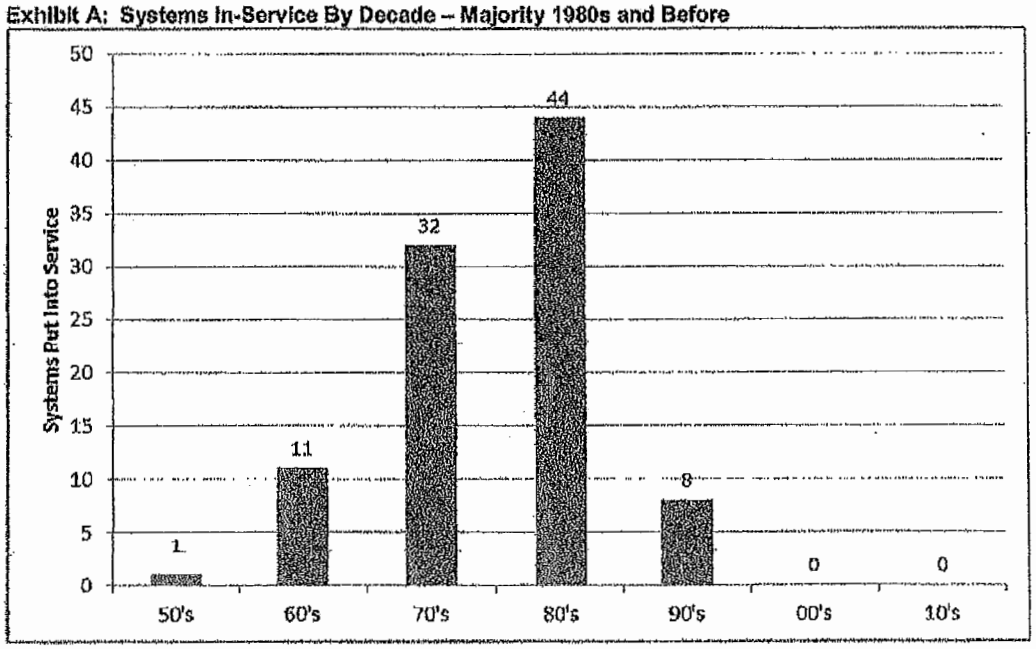
SouthWest
Water Company

INTRODUCTION

Monarch Utilities I, LP (Monarch), a subsidiary of SouthWest Water Company ("SWWC"), is a regulated, privately-owned water and wastewater utility in Texas. SWWC is 90 percent owned by institutional investors advised by J.P. Morgan Asset Management and ten percent owned by investors advised by Water Asset Management, LLC. The majority of these investments come from retirement accounts for middle class workers—teachers, firefighters, construction workers, and truck drivers.

Monarch owns and operates 96 water and 15 wastewater systems in 32 counties across Texas. Exhibit A depicts the number of company-owned systems placed in service by decade, and it illustrates the aging nature of our water and wastewater treatment plants. Older facilities require more repairs and maintenance or replacement, putting an upward pressure on cost of service and customer rates.

Exhibit A: Systems In-Service By Decade – Majority 1980s and Before



With nearly 34,000 active water connections, the average water system size is 354 connections. Smaller systems do not have the economies of scale enjoyed by larger utilities located in one county or city, resulting in higher cost of operations to customers.

Residential customers represent 98 percent of Monarch's customer base. In other utilities, commercial and industrial customers often subsidize residential customers.

The water systems are supplied by 249 wells, seven surface water treatment plants, and 20 wholesale suppliers. Monarch has 13 wastewater treatment plants and two wholesale treatment contracts. Monarch has more than 1,000 miles of water transmission and distribution mains and more than 200 miles of sewer interceptor and collection lines.