

April 15, 2024

Bluebonnet Groundwater Conservation District
1903 Dove Crossing Lane, Suite A,
P.O. Box 269
Navasota, TX 77868

Attention: Mr. Zach Holland

**RE: Maple Reserve Development
Non-Exempt Water Well Registration Application**

Mr. Holland:

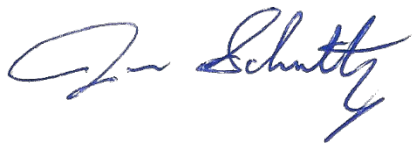
Please find attached the Non-Exempt Water Well Registration Application for the above referenced development within Waller County. In addition to the application, also attached is the following information and documents:

1. Well Operating Permit Application
2. Proposed Water Well Coordinates: Lat: N30° 06' 52.38" Long: W95° 56' 57.40"
3. Well Construction Diagram
4. Land plan showing location of proposed water plant
5. Water plant site plan showing location of proposed water well
6. Proposed annual production is estimated at 82,125,000 gallons per year
7. The well will be designed to produce 350 gallons per minute

A check for the application fee is being delivered to your office in the amount of \$1,500 for the District Prepared Phase 1a Report.

Should you have any questions or require additional information please contact me at 713-816-0113 (mobile) or email at jason.schultz@decorp.com.

Sincerely,
DE Corp



Jason W. Schultz, P.E.
Project Manager

Attachments:
File 5414-51

Bluebonnet Groundwater Conservation District
1903 Dove Crossing Lane Suite A, P.O. Box 269
Navasota, TX 77868
Phone: 936-825-7303 Fax: 936-825-7331
Email: BGCD@bluebonnetgroundwater.org

BGCD Well ID #: _____

NON-EXEMPT WATER WELL REGISTRATION APPLICATION

Please complete all questions. Please print or type information, or place an "x" in the appropriate space.

Drill New Well: ☒ Register an Existing Well: _____ Replace Existing Well: _____ Increase Size of Existing Well: _____
Increase Pump Size of Existing Well: _____ Abandon/Cap/Plug Existing Well: _____ Perform Dye Trace: _____

Well Owner Maple Development Group Phone _____

Address 1333 West Loop South, Suite 910, Houston, TX 77027

Fax: _____ Email: Jason.Schultz@decorp.com

Drilling Company To be determined Phone _____

Address _____

Fax: _____ Email: _____

Driller To be determined License# _____

Well Location: County Waller Well Site Address or Location: Northwest corner of the intersection of Flukinger Rd. and FM 362

Latitude N30° 06' 52.38" Longitude W95° 56' 57.40"

Proposed Water Use: Public Water Supply: ☒ Industrial: _____ Recreational: _____ Commercial: _____

Hydraulic Fracturing: _____ Transport Outside of District: _____

Proposed depth: 700 ft. Aquifer _____ Date drilling is scheduled to begin Upon Approval

Proposed casing size: 10 in. Proposed casing depth: 700 ft. Pump depth: 450 ft. Pump size 60 hp.

Type Pump: Turbine: ☒ Submersible: ☒ Windmill: _____ Other (specify): _____

Pump fuel or power source: Electricity: ☒ Natural Gas: _____ Wind: _____ Other (specify): _____

Pump Bowls: Size To be determined # of Stages: TBD Pump Column: Inside Diameter: 10 in. Length: _____ ft.

Pump discharge pipe: Size 10 in. Rated pump horsepower: 100 Pump Discharge: 650 gpm

Water bearing formation: _____

Estimated Annual Water Production: _____ Acre-Feet or 168,000,000 Gallons

If the water produced from this well will be used in whole or in part on property other than the property where the well is located, **describe the location where the water will be used.** Transportation of water produced and moved to another location may require a District Transportation Permit. See District Rules, Section 10 or contact the District office for information.

Water will be used to serve the residents of the proposed Maple Reserve development within a future Waller County Municipal Utility District as shown on the attached land plan. The Municipal Utility District is being created now.

BLUEBONNET GROUNDWATER CONSERVATION DISTRICT

Permit form approved on: _____

By: _____ Zach Holland, General Manger

(Continued) NON-EXEMPT WATER WELL DRILLING PERMIT FORM (Continued)

The following documentation, attachments and fee payments must accompany this form when it is submitted for consideration by the District.

- a. Plat or map showing location of the property and location on property of well for which form is submitted.
- b. If owner and/or operator of a well is different from property owner, provide written documentation from property owner authorizing construction and operation of this well.
- c. All the information and documentation required for the type and class of well for which authorization is requested by Section 8 of the District Rules and that information and documentation required by Rule 8.5.
- d. Forms for non-exempt well authorizations must be accompanied by the information required by Rule 8.5A1:
 - a. 8.5A1(e) – a statement of the projected effect of the proposed withdrawal on the aquifer or aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users in the District;
 - b. 8.5A1(f) – the applicant’s water conservation plan or a declaration the applicant and subsequent user will comply with the District’s management plan;
 - c. 8.5A1(g)(2) – well construction diagram;
 - d. 8.5A1(g)(3) – a map showing the location of the proposed well or wells, all existing well, hydrologic features, and geologic features located within half (1/2) mile radius of the proposed well or wells site;
 - e. 8.5A1(h) – the applicant’s well closure plan or a declaration the applicant will comply with well plugging guidelines and report closure to the applicable authorities, including the District.
- e. Payment for applicable fees must accompany the form. Additional fees may apply as documented in the District’s adopted Fee Schedule.

Well Development Fee	\$75.00	
Operating Permit Application Fee	\$375.00	
Hydrogeologic Report Fee – applicable if well completed with eight (8) inches or greater inside casing diameter		
	Phase I-a Report (less than 200MG/yr)	Phase I-b Report (> 200MG/yr)
District Prepared Report	\$1,500.00	\$7,500.00
Applicant Prepared/District Review	\$500.00	\$1,500.00

- f. Forms for new non-exempt wells must be accompanied by an Operating Permit Application and, if appropriate, a Transport Permit Application.

I, the undersigned applicant, hereby agree and certify that:

- a. this well will be drilled within 30 feet of the location specified and not elsewhere;
- b. I will furnish the District with a copy of the completed driller’s log, any electric log, the well completion report, and any water quality test report within 60 days of completion of this well and prior to production of water there from (other than such production as may be necessary to the drilling and testing of such well);
- c. in using this well, I will avoid waste, achieve water conservation, protect groundwater quality and the water produced from this well will be for a beneficial use;
- d. I will comply with all District and State well plugging and capping guidelines in effect at the time of well closure;
- e. I agree to abide by the terms of the District Rules, the District Management Plan, and orders of the District Board of Directors currently in effect and as they may be modified, changed, and amended from time to time;
- f. I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief.

Signature: _____ Date: 04/12/2024

Printed Name: Jason Schultz Title: Project Manager

WELL OPERATING PERMIT APPLICATION

Please complete all questions. Please print or type information or place an "x" in the appropriate space.

Drill New Well: ☒ Register an Existing Well: ☐ Replace Existing Well: ☐ Increase Size of Existing Well: ☐
Increase Pump Size of Existing Well: ☐ Abandon/Cap/Plug Existing Well: ☐ Perform Dye Trace: ☐

Well Owner Maple Development Group Phone 832-804-9680

Address 1333 West Loop South, Suite 910, Houston TX 77027

Fax: _____ Email: _____

Drilling Company To be determined Phone _____

Address _____

Fax: _____ Email: andrew@mapledevelopmentgroup.com

Driller _____ License# _____

Well Location: County Waller 911 address of well site To be determined

Latitude N30d 06' 52.38" Longitude W95d 56' 57.40"

Proposed Water Use: Public Water Supply: ☒ Industrial: ☐ Recreational: ☐ Commercial: ☐
Hydraulic Fracturing: ☐ Transport Outside of District: ☐

Status of well as of application date:

- ☐ Operating Well (Date drilled _____)
- ☐ Well Completed but not operating (Date Drilled _____)
- ☒ Well Development permit attached or awaiting approval

Authorization to produce the following quantity of water annually from this well is: 168,000,000 Gallons

Permits are generally issued for a period term of thirty (30) years, unless otherwise stated on the permit. Please refer to Rule 8.8 regarding the terms of permits. An operating permit issued for a hydraulic fracturing well will be issued for one (1) year as stated in Rule 8.19 regarding general permits by rule.

If the water produced from this well will be used in whole or in part on property other than the property where the well is located, **describe the location where the water will be used.** Transportation of water produced and moved to another location may require a District Transportation Permit. See District Rules, Section 10 or contact the District office for information.

The water will be used to serve the residents within the future Waller County M.U.D.

BLUEBONNET GROUNDWATER CONSERVATION DISTRICT

Permit application approved on: _____

By: _____ Zach Holland, General Manager

(Continued) WELL OPERATING PERMIT APPLICATION (Continued)

The following documentation, attachments and fee payments must accompany this application when it is submitted for consideration by the District.

- a. Plat or map showing location of the property and location on property of well for which application is submitted.
- b. If the owner and/or the operator of well is different from the property owner, provide written documentation from the property owner authorizing construction and operation of this well.
- c. All the information and documentation required for the type and class of well for which authorization is requested by Section 8 of the District Rules and in particular that information and documentation required by Rule 8.5.
- d. If this permit application is for a well completed with an inside casing diameter of eight (8) inches or greater, or for any of the conditions enumerated in District Rule 8.5 F, a current hydrogeological report (a report completed within 18 months of the date of this application is considered current) shall be submitted with this application.
- e. Payment for applicable fees must accompany application. Additional fees may apply as documented in the District's adopted Fee Schedule.
- f. The applicant's water conservation plan and if any subsequent user of the water is a municipality or entity providing retail water services, the water conservation plan of that municipality or entity shall also be provided. In lieu of a water conservation plan, a declaration that the applicant and/or a subsequent user if any subsequent user is a municipality or entity providing retail water services will comply with the District Management Plan.
- g. The applicant's Drought Contingency Plan and a copy of any subsequent user's Drought Contingency Plan or a declaration that the applicant or a subsequent user will comply with District rules, policies and Board actions in drought conditions.

I, the undersigned applicant, hereby agree and certify that:

- a. in using this well, I will avoid waste, achieve water conservation, protect groundwater quality and the water produced from this well will be for a beneficial use;
- b. I will comply with all District and State well plugging and capping guidelines in effect at the time of well closure;
- c. I agree to abide by the terms of the District Rules, the District Management Plan and orders of the District Board of Directors currently in effect and as they may be modified, changed and amended from time to time;
- d. I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief.

Signature: _____

Date: _____

6/04/2024

Printed Name: _____

Jason Schultz

Title: _____

Project Manager



LOT SUMMARY

40'x120'	461 LOTS	46 %
50'x120'	416 LOTS	40 %
60'x120'	132 LOTS	14 %

TOTAL 1,017 LOTS

8 MODEL HOMES

THIS DRAWING IS A GRAPHIC REPRESENTATION FOR PRESENTATION PURPOSES ONLY AND IS NOT FOR COMPUTATION OR CONSTRUCTION PURPOSES. SAID DRAWING IS A SCANNED IMAGE ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE. META PLANNING + DESIGN MAY OR MAY NOT INTEGRATE ADDITIONAL INFORMATION PROVIDED BY OTHER CONSULTANTS, INCLUDING BUT NOT LIMITED TO THE TOPICS OF ENGINEERING AND DRAINAGE, FLOODPLAINS, AND/OR ENVIRONMENTAL ISSUES AS THEY RELATE TO THIS DRAWING. NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE PHYSICAL DESIGN, LOCATION, AND CHARACTER OF THE FACILITIES SHOWN ON THIS MAP ARE INTENDED. ADDITIONALLY, NO WARRANTY IS MADE TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

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a schematic development plan for

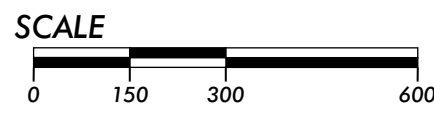
MAPLE RESERVE
±374.2 ACRES OF LAND

prepared for

MAPLE DEVELOPMENT GROUP

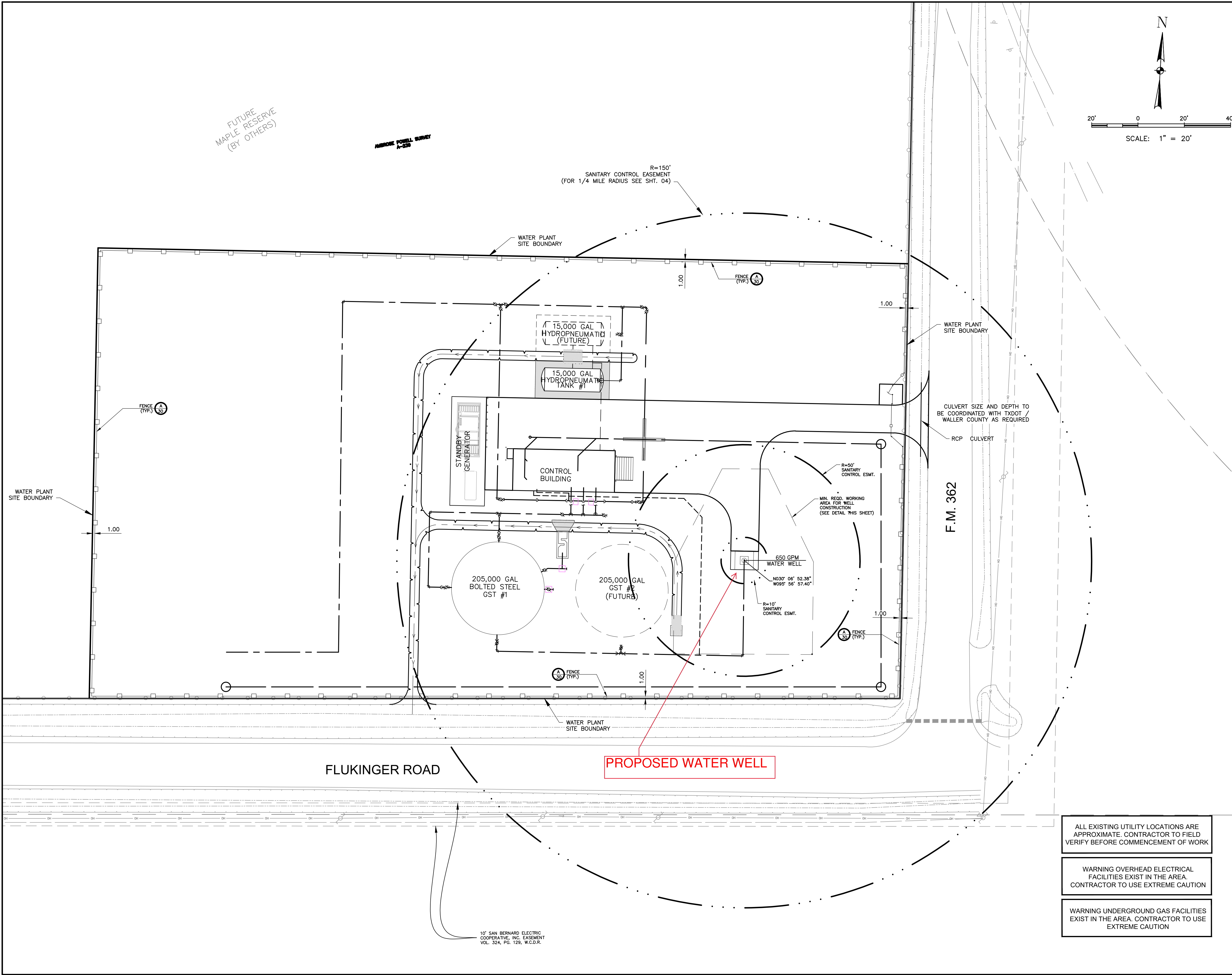


24285 Katy Freeway, Ste. 525
Katy, Texas 77494
Tel: 281-810-1422

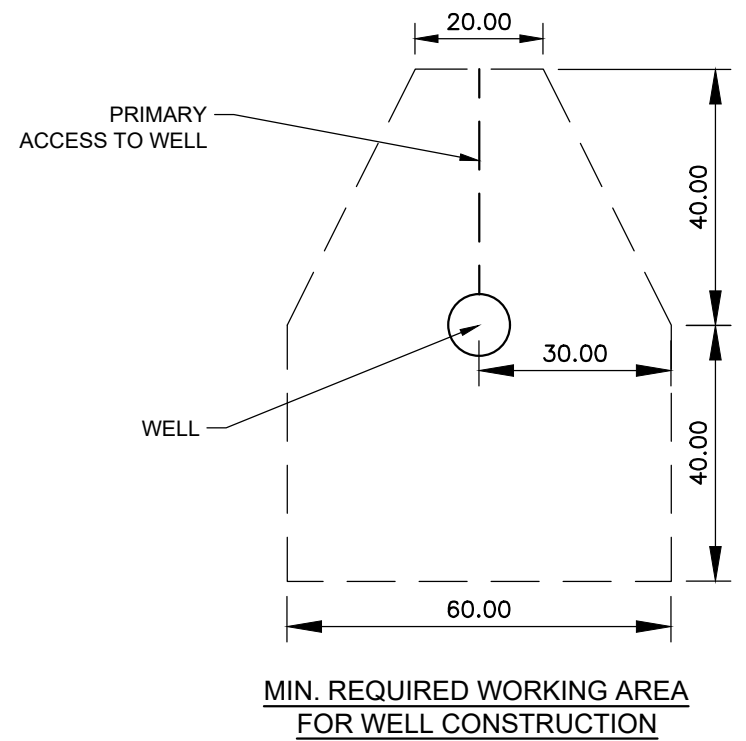


MTA-45009
JULY 25, 2023

6:\1130\5414-51\DRAWINGS\CONSTR PLANS\05 SITE PLAN.DWG
PLOTTER: Jan 09 2024 - 10:45am
REVISIONS: 1
DATE: 1/9/2024
DRAWN BY: JWS
CHECKED BY: JWS
APPROVED BY: JWS
PROJECT: MAPLE RESERVE WATER PLANT No.1
SHEET: 05 OF 39



BENCHMARK:
NATIONAL GEODETIC SURVEY STATION No. A 1281 (PID: BL1869) BEING A NGS DISC STAMPED "A 1281". BENCHMARK LOCATION BEING 1.0 MILE SOUTH FROM MAGNOLIA, 0.1 MILE SOUTHWEST ALONG FIFTH STREET FROM THE CROSSING OF MAGNOLIA CONROE ROAD AND THE MISSOURI PACIFIC RAILROAD IN MAGNOLIA, THENCE 0.15 MILE SOUTHEAST ALONG COMMERCE STREET, AND THENCE 0.75 MILE SOUTH ALONG NICHOLS SAW MILL ROAD. SET AT THE SECOND POLE SOUTH OF A LINE CROSSING THE ROAD, 322.5 FEET NORTH OF A PRIVATE DRIVE LEADING WEST TO A SMALL ONE STORY WHITE HOUSE, 228 FEET SOUTH OF A PRIVATE DRIVE LEADING EAST TO A ONE STORY HOUSE, 46.5 FEET WEST OF THE CENTERLINE OF NICHOLS SAW MILL ROAD, 2 FEET NORTH OF THE POWER POLE, AND 1.0 FOOT EAST OF THE WESTERLY RIGHT OF WAY FENCE, AS SHOWN ON SURVEY ELEVATION = 231.30' NAVD88



DEC
ENGINEERING
EXCELLENCE
T.B.P.E.L.S. FIRM REGISTRATION #392
3100 WEST ALABAMA HOUSTON, TEXAS 77056 (713) 523-9970

SEAL
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PURPOSES BY:

JASON W. SCHULTZ
TEXAS P.E. No. 90288
DATE: 1/9/2024

MAPLE RESERVE WATER PLANT No.1 SITE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR
ONLY AFTER DATE OF SIGNATURES

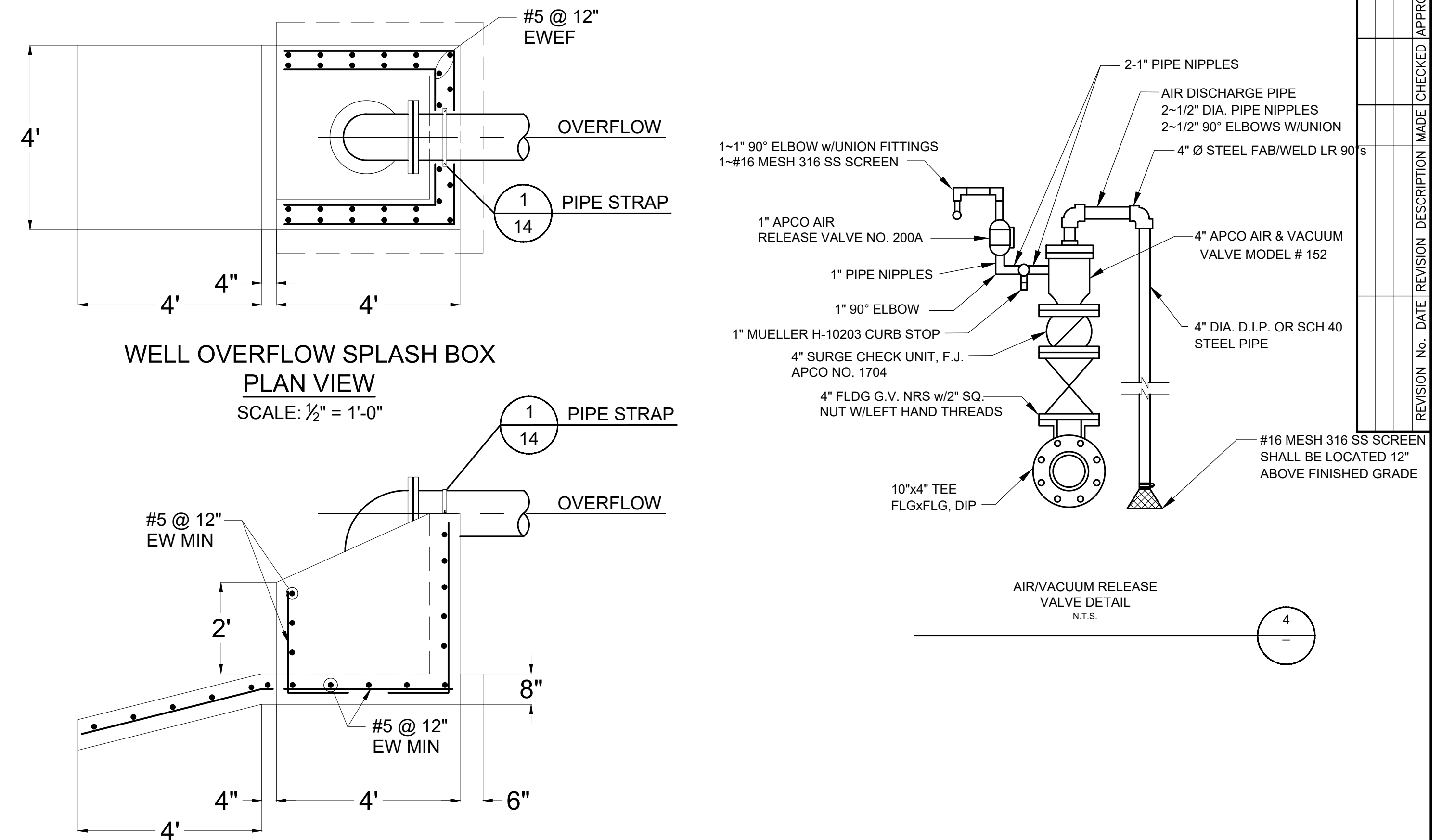
WALLER COUNTY

WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE

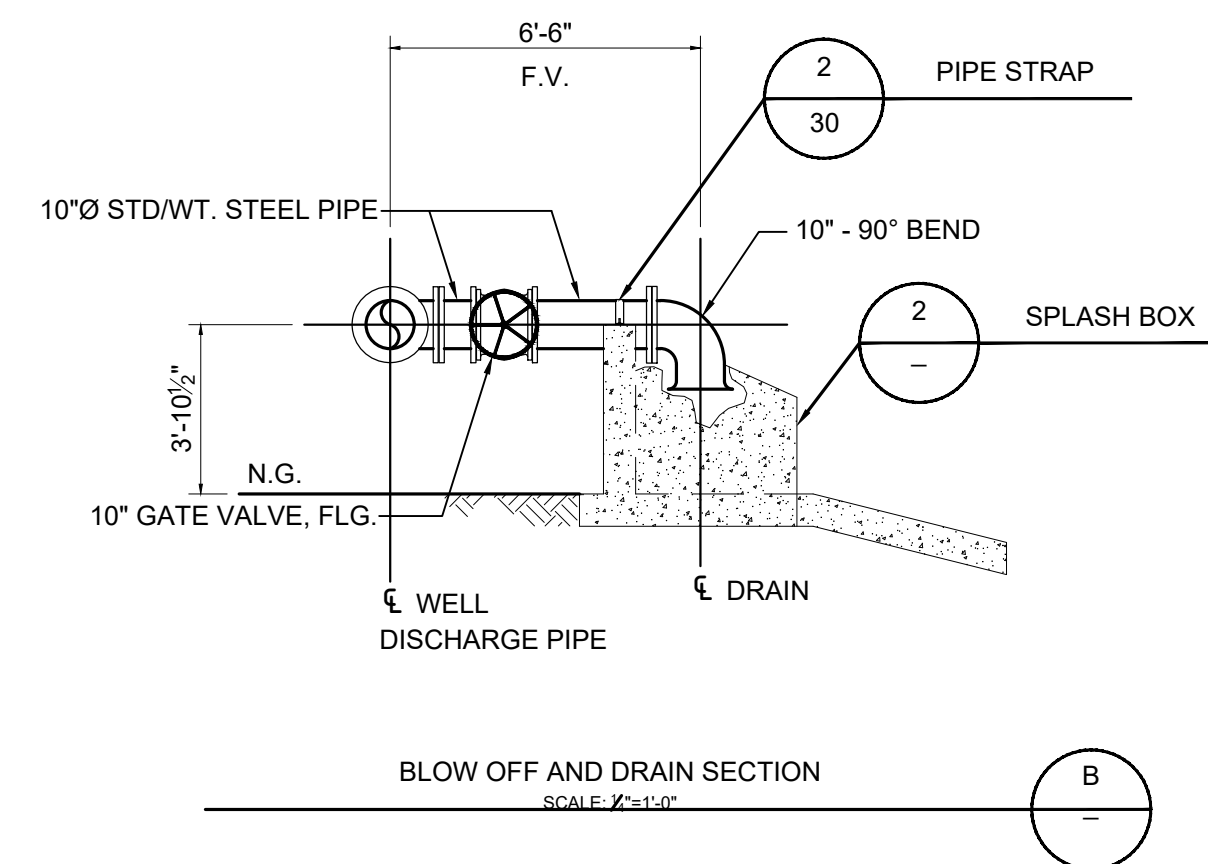
FILE No. _____
HORZ: 1" = 40'
VERT: _____

SHEET No. 05 OF 39 **DRAWING SCALE:**
FOR WALLER COUNTY USE ONLY

- ALL EXISTING UTILITY LOCATIONS ARE
APPROXIMATE. CONTRACTOR TO FIELD
VERIFY BEFORE COMMENCEMENT OF WORK
- WARNING OVERHEAD ELECTRICAL
FACILITIES EXIST IN THE AREA.
CONTRACTOR TO USE EXTREME CAUTION
- WARNING UNDERGROUND GAS FACILITIES
EXIST IN THE AREA. CONTRACTOR TO USE
EXTREME CAUTION



WELL OVERFLOW SPLASH BOX	2	2	2	2
SCALE: 1/2" = 1'-0"	5	6	7	—



RECOMMENDED PUMP DESIGN	
PUMP CAPACITY (GPM)	650
MIN. TDH NOT INCLUDING COLUMN LOSSES (FT)	216
MIN. HYDRAULIC EFFICIENCY (%)	84
MAX. PUMP RPM	1800
BASE MOTOR HORSEPOWER	40
DISCHARGE HEAD (IN)	10
MOUNTING PLATE (IN)	25.25
SUCTION FLANGE DIAMETER (IN)	10
DISCHARGE FLANGE DIAMETER (IN)	10
SUCTION BARREL (IN)	8
TOTAL WELL DEPTH (FT)	700

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PURPOSES BY:

JASON W. SCHULTZ
TEXAS P.E. No. 90288
DATE: 8/15/2023

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

WALLER COUNTY

WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE

FILE No.	HORIZ: AS SHOWN VERT:
SHEET No. 16 OF 33	DRAWING SCALE
FOR WALLER COUNTY USE ONLY	

William R. Hutchison, Ph.D., P.E., P.G.
Independent Groundwater Consultant
909 Davy St.
Brenham, TX 77833
512-745-0599
billhutch@texasgw.com
www.texasgw.com

June 5, 2024

Mr. Zach Holland
General Manager
Bluebonnet Groundwater Conservation District
PO Box 269
Navasota, TX 77868-0269

RE: Phase I-a Report: Maple Reserve Development – Waller County MUD No. 47

Dear Mr. Holland,

This letter represents the Phase I-a report for the Maple Reserve Development well permit application that I received from you. The initial letter is dated April 15, 2024, and an updated Operating Permit form is dated June 4, 2024.

“Estimated Annual Water Production” is 168 million gallons per year, which is below the 200 million gallon per year threshold. Therefore, the application requires the preparation of a Phase I-a analysis of potential drawdown.

Well Locations on HAGM Grid

The latitude and longitude data on the application were used to convert the location data to x- and y-coordinates in the GAM coordinate system using Surfer, a commercial gridding program. The FORTRAN program *PointRC.exe* was used to find the HAGM cell for those x- and y-coordinates. The results of this effort yielded that the well is in HAGM row 33, column 87. The applications noted that the well depth and casing depth will be 700 feet, which would place the bottom of the well in the Evangeline Aquifer (HAGM layer 2).

Grid Parameters, HAGM Parameters, HAGM Results, Theis Parameters

The Excel spreadsheet named *BGCD Parameters.xlsx* contains the data needed for the review and Phase I-a calculations for cells designated in the four counties of the Bluebonnet Groundwater Conservation District. The data for row 33, column 87 were copied and transposed into the spreadsheet *Maple Reserve Phase I-a Tables.xlsx*. Results for layer 1 (Chicot) and layer 2 (Evangeline Aquifer) are summarized into four tables as follows:

- Table 1: Grid Parameters
- Table 2: HAGM Parameters
- Table 3: HAGM Results
- Table 4: Theis Parameters (layer 2 only)

Table 1. Grid Parameters for Maple Reserve Well

County Name	Waller	Waller
County Code	237	237
Outcrop Layer	1	1
Layer	1	2
Row	33	33
Column	87	87
x-coordinate (GAM-ft)	6200118	6200118
y-coordinate (GAM-ft)	19297812	19297812
Surface Elevation (ft MSL)	308	308
Cell Top Elevation (ft MSL)	308	157
Cell Bottom Elevation (ft MSL)	157	-704
Cell Thickness (ft)	151	861
Clay Thickness (ft)	110	304
Clay Thickness (% of Cell Thickness)	72.85	35.31

Table 2. HAGM Parameters for Maple Reserve Well

County Name	Waller	Waller
County Code	237	237
Outcrop Layer	1	1
Layer	1	2
Row	33	33
Column	87	87
Hydraulic Conductivity (ft/day)	3.79	2.00
Transmissivity (gpd/ft)	4,286	12,881
Leakage (1/day)	2.10E-05	7.40E-06
Storativity (dimensionless)	1.00E-01	9.00E-04
Elastic Storativity (dimensionless)	1.62E-05	8.22E-05
Inelastic Storativity (dimensionless)	1.62E-03	8.22E-03

Table 3. HAGM Results for Maple Reserve Well

County Name	Waller	Waller
County Code	237	237
Outcrop Layer	1	1
Layer	1	2
Row	33	33
Column	87	87
Groundwater Elevation in 2009 (ft MSL)	202	193
Groundwater Elevation in 2080 (ft MSL)	159	136
DFC Draw down (ft)	43	57
Artesian Head (ft)	-106	36
Subsidence in 2009 (ft)	0.11	0.11
Subsidence in 2080 (ft)	0.75	0.75
Subsidence from 2009 to 2080 (ft)	0.64	0.64
Cell Pumping in 2009 (AF/yr)	0	0
Cell Pumping in 2080 (AF/yr)	0	447.18

Table 4. Theis Parameters for Maple Reserve Well

County Name	Waller
County Code	237
Outcrop Layer	1
Layer	2
Row	33
Column	87
Drawdown in Production Well at 100 gpm for 36 hours	15.18
Drawdown 1/2 mile from Production Well at 100 gpm for 36 hours	0.50
Drawdown 1/2 miles from Production Well at 100 gpm for 1 year	4.82
Drawdown-Pumping Ratio for Production Well for 36 hours	0.15183
Drawdown-Pumping Ratio for 1/2 mile from Production Well for 36 hours	0.00497
Drawdown-Pumping Ratio for 1/2 mile from Production Well for 1 yr	0.04821

Theis Equation Calculations

Groundwater production data from the permit applications were used along with the drawdown-pumping ratios contained in Table 4 to develop three estimates of drawdown for each well:

- Scenario 1: drawdown in the production well after 36-hours of pumping at three times the average annual pumping rate
- Scenario 2: drawdown in a well ½ mile from the production well after 36 hours of pumping at three times the annual pumping rate

- Scenario 3: drawdown in a well ½ mile from the production well after one year at the average pumping rate.

Results of these calculations for are presented in Table 5.

Table 5. Theis Results for Maple Reserve Well

Production Summary	Value
Annual Permit Production Limit (gallons)	168,000,000
Annual Permit Production Limit (acre-feet)	516
Average Pumping Rate (gpm)	320
3X Average Pumping Rate (gpm)	959

Evangeline		
Drawdown Calculations	Drawdown- Pumping Ratios	Calculated Draw down (ft)
Production Well - 36 hours (3X avg pumping)	0.15183	145.59
1/2 mile from Production Well - 36 hours (3X avg pumping)	0.00497	4.77
1/2 mile from Production Well - one year (avg pumping)	0.04821	15.41

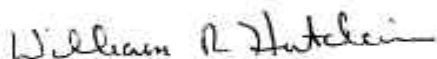
These data represent the best integrated data of the area from a regional perspective. The local-scale data will be developed as part of the Phase II investigation. This will include more site-specific information and data on aquifer depth, clay content, and aquifer parameters calculated from the 36-hour pumping test.

Recommendation

Based on the results of the Phase I-a report, the application should be approved, and the Phase II investigation should proceed to verify the Phase I-a estimates related to the aquifer (e.g. depth to top of Evangeline and clay content) and related to aquifer performance (e.g. drawdown at the end of the 36-hour pumping test and aquifer transmissivity).

I appreciate the opportunity to work with you on this effort. Please call me at 512-745-0599 or email me at billhutch@texasgw.com if you have any questions.

Sincerely,



William R. Hutchison, Ph.D., P.E., P.G.