Control Number: 45318

Item Number: 17

Addendum StartPage: 0

SouthWest Water Company

SWWC Utilities, Inc.
12535 Reed Road
Sugar Land, TX 77478
Phone 281.207.5800
Fax 281.207.5940
www.swwc.com

April 6, 2016

Public Utility Commission of Texas
Attention: Filing Clerk
1701 Congress Avenue
P.O. Box 13326
Austin, Texas 78711-3326

Re: Docket 45318 Application of SWWC Utilities, Inc. to transfer SWWC Utilities, Inc. dba Huntington Utility Company, LLC (CCN 11971) into SWWC Utilities, Inc. Water Services, Inc. (CCN 11106)

To Whom It May Concern:

Please accept an original and three copies of the response of SWWC Utilities, Inc. to the Commission Staff's Second Request for Information issued April 1, 2016. This request is due within 20 days, so this response is timely filed. SWWC Utilities, Inc. stipulates that these responses are submitted under oath.

Sincerely,

George Freitag, P.E.
Texas Regulatory Manager
SouthWest Water Company
SWWC Utilities, Inc.
(512) 219-2288
gfreitag@swwc.com

Enclosures

17

DOCKET NO. 45318

RESPONSE TO: COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION TO SWWC UTILITIES, INC. d/b/a HUNTINGTON UTILITY COMPANY, LLC AND SWWC UTILITIES, INC. d/b/a WATER SERVICES, INC.

Staff 2-1 Regarding the Coolcrest Water System, please address the outstanding Notice of Violation (NOV) for the failure to provide annual reports regarding the testing of backflow prevention devices, and for the failure to conduct an interior pressure tank inspection for the 5,000 gallon pressure tank located at the main water plant. For each outstanding NOV, explain why the violation occurred, explain how the violation is being addressed and remedied, and provide a timeline for resolution.

RESPONSE: See attached letter to TCEQ dated July 3, 2014

A. Failure to provide annual reports regarding the testing of backflow prevention devices.
   a. **Why violation occurred:** TCEQ had not previously required back-flow prevention assembly reports for this system.
   b. **How violation is being addressed and remedied:** Coolcrest is a residential water system with six commercial connections; none of which meet the requirement for annual backflow assembly testing. We have provided this information to the TCEQ.
   c. **Timeline for resolution**: We believe this alleged violation is resolved and are awaiting confirmation from TCEQ.

B. Failure to conduct an interior pressure tank inspection for the 5,000 gallon pressure tank located at the main water plant.
   a. **Why violation occurred:** TCEQ had not previously required a tank inspection at this facility.
   b. **How violation is being addressed and remedied:** The 5,000 gallon pressure tank was inspected on May 14, 2014.
   c. **Timeline for resolution:** We believe this alleged violation is resolved and are awaiting confirmation from TCEQ.

SPONSORED BY: Tim Williford, Environmental Health and Safety Manager, SWWC Utilities, Inc.

Staff 2-2 Regarding the Bavarian Hills Water System, please address the outstanding Notice of Violation (NOV) for the failure to submit or acquire approval of as-built engineering plans prior to operating a public water system. For each outstanding NOV, explain why the violation occurred, explain how the violation is being addressed and remedied, and provide a timeline for resolution.

RESPONSE:

A. Failure to submit or acquire approval of as-built plans engineering plans prior to operating a public water system.

a. **Why violation occurred:** In recent years the TCEQ began requiring systems that had been in existence and providing service for many years to have as-built engineering plans.

b. **How violation is being addressed and remedied:** We have been working with the TCEQ staff so that this requirement can be satisfied with the submission of well logs, facility capacity data, and operational data. We are providing this information to TCEQ.

c. **Timeline for resolution:** We believe this alleged violation will be resolved soon with TCEQ.

SPONSORED BY: Tim Williford, Environmental Health and Safety Manager, SWWC Utilities, Inc.

Staff 2-3 Regarding the Country Springs Water System, please address the outstanding Notice of Violation (NOV) for the following:

A. Failure to submit or acquire approval of as-built engineering plans prior to operating a public water system.

RESPONSE

a. **Why violation occurred:** In recent years the TCEQ began requiring systems that had been in existence and providing service for many years to have as-built engineering plans.

b. **How violation is being addressed and remedied:** We have been working with the TCEQ staff so that this requirement can be satisfied with the submission of well logs, facility capacity data, and operational data. We are providing this information to TCEQ.

c. **Timeline for resolution:** We believe this alleged violation will be resolved soon with TCEQ.

B. Failure to provide pressure tank capacity of 20 gallons per connection.

RESPONSE

a. **Why violation occurred:** The pressure tank capacity at Country Springs had previously been acceptable to the TCEQ and even though the number of connections did not change, it was cited as a deficiency in the latest inspection.

b. **How violation is being addressed and remedied:** Our engineers are in the process of preparing and submitting to TCEQ an exception request.

c. **Timeline for resolution:** We expect to receive approval from the TCEQ within 60 days after submittal.

C. Failure to make adequate records available for review, in particular reports for testing backflow devices,

RESPONSE

a. **Why violation occurred:** TCEQ had not previously required back-flow prevention assembly reports for this system.

b. **How violation is being addressed and remedied:** Country Springs is a residential water system with no commercial connections; none of which meet the requirement for annual backflow assembly testing. We have provided this information to the TCEQ.

c. **Timeline for resolution:** We believe this alleged violation is resolved and are awaiting confirmation from TCEQ.

D. Failure to provide no more than three pressure tanks at a site without prior approval,

RESPONSE

a. **Why violation occurred:** The number of pressure tanks at Country Springs had previously been acceptable to the TCEQ however, it was cited as a deficiency in the latest inspection.

b. **How violation is being addressed and remedied:** Our engineers are in the process of preparing and submitting to TCEQ an exception request.

c. **Timeline for resolution:** We expect to receive approval from the TCEQ within 60 days after submittal.

E. Failure to maintain watertight conditions, specifically the base of ground storage tank No. 2,

RESPONSE

a. **Why violation occurred:** The tank has been in service for several years and had begun to leak at a few weak spots.

b. **How violation is being addressed and remedied:** The tank was recoated in fall 2014. This information was provided to the TCEQ.

c. **Timeline for resolution:** We believe this violation to be resolved.

F. Failure to conduct an interior pressure tanks inspection, specifically the 5,500 gallon pressure tank located at the main water plant.

RESPONSE

a. **Why violation occurred:** We had provided the TCEQ with routine tank inspection reports. However, the TCEQ requires tanks to be periodically inspected internally. This requires the tank to be taken off line, which was not possible for us during periods of heavy use.

b. **How violation is being addressed and remedied:** The pressure tank at the facility at the time of the inspection was replaced by a new 5,435 gallon pressure tank in August 2014. The tank was installed per approved plans. All information has been provided to the TCEQ.

c. **Timeline for resolution:** We consider this issue to be resolved.

SPONSORED BY: Tim Williford, Environmental Health and Safety Manager, SWWC Utilities, Inc.

Staff 2-4 Regarding the Oak Village North Water System, please address the outstanding Notice of Violation (NOV) for the failure to submit or acquire approval of as-built engineering plans prior to operating a public water system. For each outstanding NOV, explain why the violation occurred, explain how the violation is being addressed and remedied, and provide a timeline for resolution.

RESPONSE:

A. Failure to submit or acquire approval of as-built plans engineering plans prior to operating a public water system.
   a. **Why violation occurred:** In recent years the TCEQ began requiring systems that had been in existence and providing service for many years to have as-built engineering plans.
   b. **How violation is being addressed and remedied:** We have been working with the TCEQ staff so that this requirement can be satisfied with the submission of well logs, facility capacity data, and operational data. We are providing this information to TCEQ.
   c. **Timeline for resolution:** We believe this alleged violation will be resolved soon with TCEQ.

SPONSORED BY: Tim Williford, Environmental Health and Safety Manager, SWWC Utilities, Inc.

Staff 2-5 Regarding the Garden Oaks Water System, please address the outstanding Notice of Violation (NOV) for the failure to provide a purchase water contract from Garden Oaks. For each outstanding NOV, explain why the violation occurred, explain how the violation is being addressed and remedied, and provide a timeline for resolution.

RESPONSE: See attached letter to TCEQ dated August 8, 2015.

A. Failure to provide a purchase water contract from Garden Oaks.
   a. **Why violation occurred:** The purchased water contract with the supplier had expired at the time of the inspection.
   b. **How violation is being addressed and remedied:** A new purchased water contract was executed between the company and the supplier and this contract was submitted to the TCEQ.
   c. **Timeline for resolution:** We believe this violation has been resolved.

SPONSORED BY: Tim Williford, Environmental Health and Safety Manager, SWWC Utilities, Inc.

FILE COPY

SouthWest Water Company

SWWC Utilities, Inc.
1620 Grand Avenue Parkway #140
Pflugerville, TX 78660
Phone 866.654.7992
Fax 512.252.8782
www.swwc.com

July 3, 2014

Ms. Joy Thurston-Cook
Water Section Team Leader
TCEQ – San Antonio Region Office
14250 Judson Rd.
San Antonio, TX 78233-4480

Re: SWWC Utilities, Inc. (the Utility)
Coolcrest Water System
PWS ID No. 0150046

Dear Ms. Thurston-Cook:

The Utility is in receipt of your letter dated April 4, 2014. In that letter three alleged violations are noted.

Track No. 531622 – Failure to conduct an interior pressure tank inspection. A third-party contractor performed the required inspection of the 5,000 gallon pressure tank located at the Madrona Water Plant on May 14, 2014. Please see attached report. The Utility believes this alleged violation is resolved.

Track No. 531625 – Failure to have annual backflow prevention assembly reports available for review. Coolcrest is a residential water system with six commercial connections; none of which meet the requirement for annual backflow assembly testing due to threat of health hazards as listed in 30 TAC 290.47(i) Appendix I. The Utility believes this alleged violation is resolved.

Track No. 531626 - Failure to submit and acquire approval of as built engineering plans prior to operating a water supply. As-built plans were submitted to the TCEQ on May 2, 2014. To date, a response has not been received from the TCEQ. Once plans have been approved, a copy will be provided to the San Antonio Regional Office. The Utility believes the alleged violation to be resolved at that time.

If there are any questions concerning this response please contact the Utility at 512.219.2294.

Sincerely,

Tim Williford
Environmental Health & Safety Manager
SouthWest Water Company

Enclosures

Cc: Charles W. Profilet, Jr.
Gary Rose
Albert Amezquita

SouthWest Water Company®

SWWC Utilities, Inc.
1620 Grand Avenue Parkway
Suite 140
Pflugerville, TX 78660
Phone 866.454.2334
Fax 512.252.8782
www.swwc.com

October 21, 2014

Ms. Joy Thurston-Cook
Water Section Team Leader
TCEQ – San Antonio Region Office
14250 Judson Rd.
San Antonio, TX 78233-4480

Re: SWWC Utilities, Inc. (the Utility)
Coolcrest Water System
PWS ID No. 0150046

Dear Ms. Thurston-Cook:

The Utility is in receipt of your letter dated April 4, 2014. In that letter three alleged violations are noted. Two of the violations were resolved in a letter submitted July 3, 2014.

Track No. 531626 - Failure to submit and acquire approval of as built engineering plans prior to operating a water supply. As built plans were submitted to the TCEQ on May 2, 2014. Interim plan approval (attached) was granted on October 15, 2014 by the Utilities Technical Review Team. The Utility believes the remaining alleged violation to be resolved at that time.

If there are any questions concerning this response please contact the Utility at 512.219.2294.

Sincerely,

Tim Williford

Tim Williford
Environmental Health & Safety Manager
SouthWest Water Company

Enclosures

Cc: Charles W. Profilet, Jr.
Gary Rose
Albert Amezquita

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2014

Mr. Chase Baromeo, Jr., P.E.
Travis Associates Consulting Engineers, Inc.
1390 Hillside Terrace
Buda, Texas 78610

Re: Coolcrest Water System - Public Water System ID No. 0150046
As-Built Water Wells at Madrona Plant (Well No. 1) and Poinciana Plant (Well No. 2) –
Reference Log No. P-05062014-027
Engineer Contact Telephone: (512) 295-3465
Plan Review Log No. P-08182014-119
Bexar County, Texas

CN603264763; RN101253227

Dear Mr. Baromeo:

On August 18, 2014, the Texas Commission on Environmental Quality (TCEQ) received your letter dated August 14, 2014, submitting as-built planning material for the two water wells at Madrona Plant (Well No. 1) and Poinciana Plant (Well No. 2) for the above referenced public water system. The original submittal for the same project received on May 6, 2014, was also considered. Based on our review of the information submitted, the project generally meets the minimum requirements of the Title 30 Texas Administrative Code Chapter 290 - Rules and Regulations for Public Water Systems and these constructed wells **are approved** for **interim** use and may now be **temporarily** placed into service.

The preliminary chemical samples collected by the water system or their contractor are for interim approval only. For final approval prior to the new well being placed into permanent service the following conditions must be met:

1. It is the water system's responsibility to contact the **TCEQ's Drinking Water Quality Team in Austin at 512/239-4691** to arrange for the collection of the official chemical samples which must be completed within 120 days from the date of this letter.

2. The results of the official chemical analysis of these samples will be used to conduct a vulnerability assessment, develop a chemical monitoring plan and grant final approval for the new source.

3. If official chemical analysis testing confirms that a regulated constituent does not meet secondary constituent levels additional treatment, blending, or public notice may be required. The Drinking Water Quality Team will notify the water system of any additional special requirements for this public water supply source. Plans for water treatment must be reviewed and approved by the Utilities Technical Review Team.

The as-built submittal consisted of the following for each well:

- As-built engineering plan and technical specifications;
- State of Texas Well Report;
- Material setting and cementing data;
- Historical pumping data for the well;
- Copy of a letter issued by the TCEQ granting an exception to the sanitary control easement for the well;
- U. S. Geological Survey 7.5 minute map showing the well location;
- Three bacteriological sampling results showing no coliform contamination; and,
- Chemical analysis results (commercial lab).

The well completion data describes construction of the following:

- One public water supply well (Well No. 1) drilled to 606 feet with 508 linear feet (l.f.) of 7⅝-inch outside diameter (o.d.) pressure-cemented steel casing, with open hole; well yield is approximately 140 gallons per minute (gpm) with a 25 horsepower, 3-inch, submersible pump set at 420 feet deep;
- One public water supply well (Well No. 2) drilled to 606 feet with 514 linear feet (l.f.) of 7⅝-inch outside diameter (o.d.) pressure-cemented steel casing, with open hole; well yield is approximately 140 gallons per minute (gpm) with a 15 horsepower, 3-inch, submersible pump set at 420 feet deep; and
- Various valves, fittings and related appurtenances.

The constructed Water Well No. 1 is located at 11926 Madrona Drive and Water Well No. 2 is located at 12304 Poinciana Street in Bexar County, Texas.

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCD) as the preferred method of groundwater management. GCDs manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on our website at the address shown below.

http://www.tceq.texas.gov/drinkingwater/planrev.html

For future reference, you can review part of the Utilities Technical Review Team's database to see if we have received your project. This is available on the TCEQ's homepage on the Internet at the following address:

http://www.tceq.texas.gov/drinkingwater/planrev.html/#status

You can download most of the well construction checklists and the latest revision of Chapter 290 "Rules and Regulations for Public Water Systems" from this site.

If you have any questions regarding this letter, please contact Kamal Adhikari at (512)239-0680 or by email at "kamal.adhikari@tceq.texas.gov" or by correspondences at the following address:

Utilities Technical Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,

for John Lock, P.E.
Utilities Technical Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

Vera Poe, P.E., Acting Manager
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

JL/AL/KA/av

cc: Coolcrest Water System - Attn: Water Utilities Official, 1620 Grand Avenue Parkway, Suite 140, Pflugerville, Texas 78660

SouthWest Water Company

SWWC Utilities, Inc.
1620 Grand Avenue Parkway
Suite 140
Pflugerville, TX 78660
Phone 512.531.6272
Fax 512.252.8782
www.swwc.com

April 6, 2016

Ms. Joy Thurston-Cook
Water Section Team Leader
TCEQ – San Antonio Region Office
14250 Judson Rd.
San Antonio, TX 78233-4480

Re: SWWC Utilities, Inc. (the Utility)
Bavarian Hills Water System
PWS ID No. 0150235

Dear Ms. Thurston-Cook:

The Utility is in receipt of your letter dated October 2, 2014. In that letter one alleged violation was noted.

Track No. 548595 – Failure to submit and acquire approval of as built engineering plans prior to operating a public water supply (PWS). Please see attached plans and records for the water system's treatment plant, storage tanks and wells. The Utility believes this information will satisfy the TCEQ's as built plans requirement for the Bavarian Hills water system.

If there are any questions concerning this response please contact the Utility at 512.219.2294.

Sincerely,

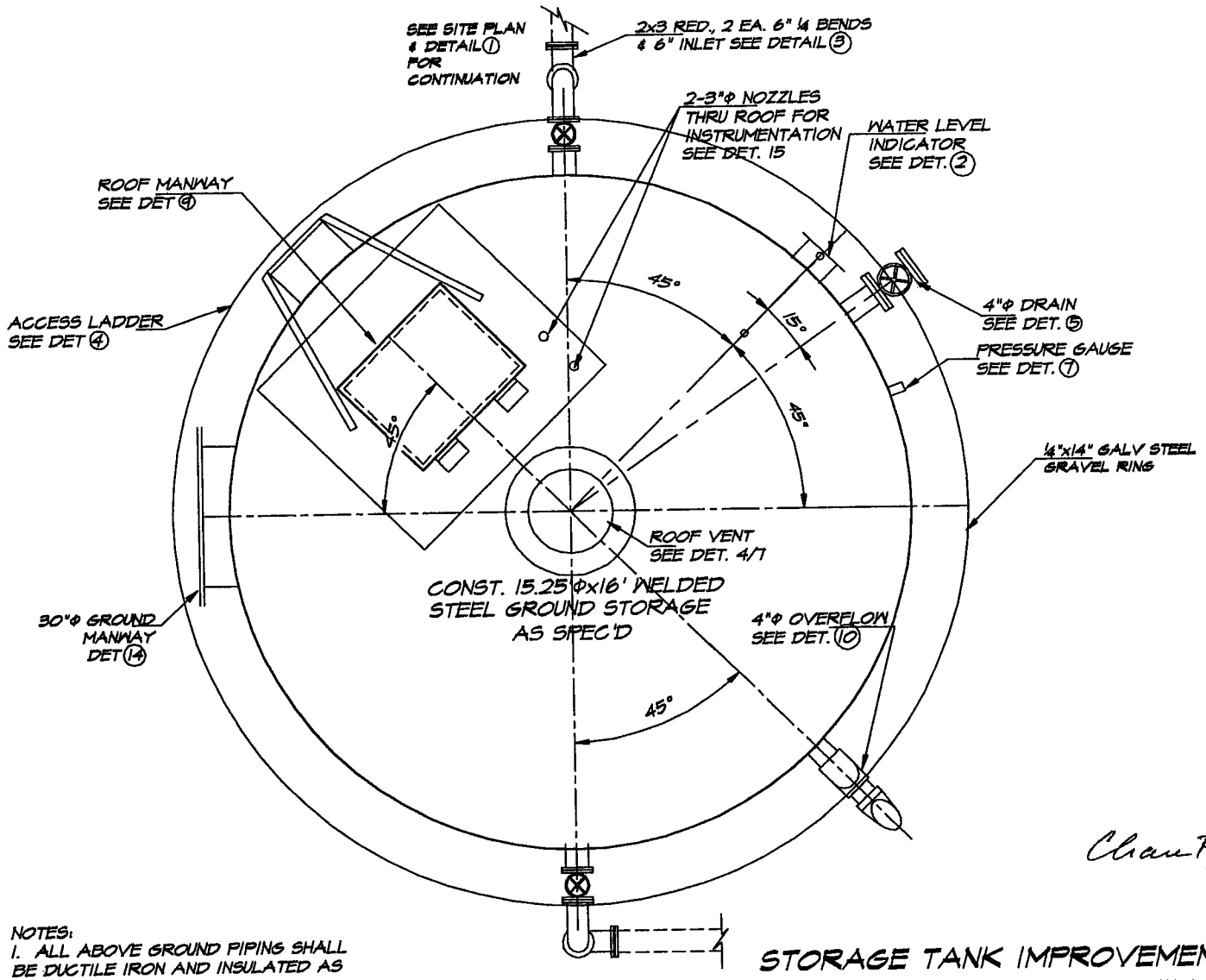
Tim Williford

Tim Williford
Environmental Health & Safety Manager
SouthWest Water Company

Enclosure

Cc: Charles W. Profilet, Jr.
Gary Rose
Albert Amezquita
Joe Torralva

Water Treatment Plant and Storage Tank Documentation



GRAVEL GRADATION

SIEVE SIZE	% RET
½"	10-20
⅜"	15-75
¼"	70-90
No. 4	90-100

9/10/09

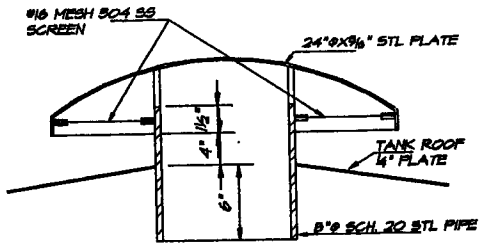
STATE OF TEXAS
CHASE BAROMEO, JR.
33061
LICENSED PROFESSIONAL ENGINEER

NOTES:
1. ALL ABOVE GROUND PIPING SHALL BE DUCTILE IRON AND INSULATED AS SPECIFIED.

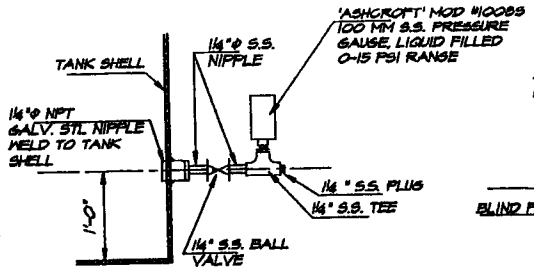
STORAGE TANK IMPROVEMENTS
WATER SERVICES, INC., BAVARIAN HILLS WS PWS -0150235

1 PLAN- GROUND STORAGE TANK
N.T.S.

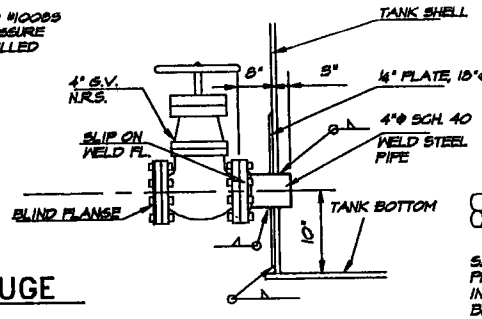
TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC. F-127
CIVIL-STRUCTURAL-ENVIRONMENTAL-MECHANICS-MATERIALS
1390 Hillside Terrace Buda, Texas 78610



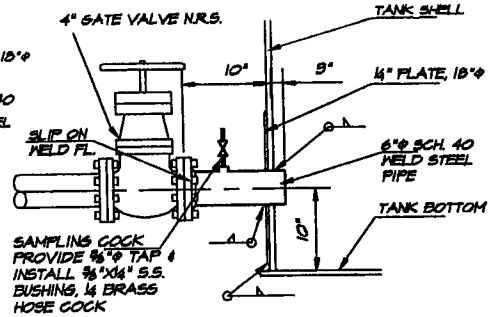
6 DETAIL – ROOF VENT
N.T.S.



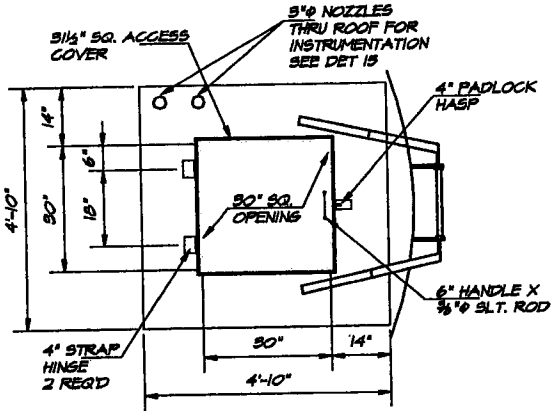
7 DETAIL – PRESSURE GAUGE
N.T.S.



5 DETAIL – TANK DRAIN
N.T.S.

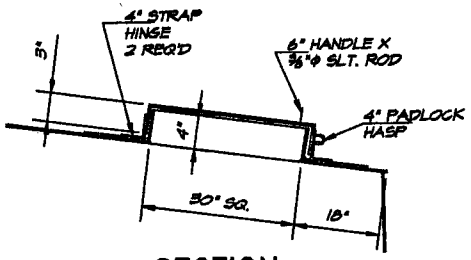


8 DETAIL – TANK OUTLET
N.T.S.



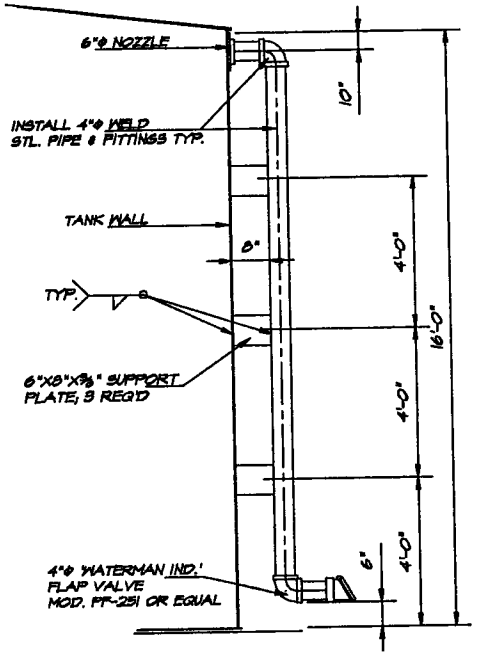
NOTE: HATCH & MANWAY SHALL BE CONST. OF 3/16" ℄ MINIMUM

PLAN



SECTION

9 DETAIL – ROOF MANWAY
N.T.S.



DETAIL – 4"Ø TANK OVERFLOW
N.T.S.

10

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
GROUND STORAGE TANK
GENERAL CONSTRUCTION NOTES

1. These water storage facilities must be constructed in accordance with the Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D.
2. All facilities for potable water storage shall be covered and designed, fabricated, erected, tested and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators and other appurtenances as specified in these rules.
3 Bolted tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D103. Welded tanks shall be designed, fabricated, erected and tested in strict accordance with current AWWA Standard D 100. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot.
4. Roof vents shall be installed in strict accordance with current AWWA standards and shall be equipped with approved screens to prevent entry of animals, birds, insects and heavy air contaminants. Screens shall be fabricated of corrosion-resistant material and shall be 16-mesh or finer. Screens shall be securely clamped in place with stainless or galvanized bands or wires and shall be designed to withstand winds of not less than tank design criteria (unless specified otherwise by the engineer).
5. All roof openings shall be designed in accordance with current AWWA standards. If an alternate 30 inch diameter access opening is not provided in a storage tank, the primary roof access opening shall not be less than 30 inches in diameter. Other roof openings required only for ventilating purposes during cleaning, repairing or painting operations shall be not less than 24 inches in diameter or as specified by the licensed professional engineer. An existing tank without a 30-inch in diameter access opening must be modified to meet this requirement when major repair or maintenance is performed on the tank. Each access opening shall have a raised curbing at least four inches in height with a lockable cover that overlaps the curbing at least two inches in a downward direction. Where necessary, a gasket shall be used to make a positive seal when the hatch is closed. All hatches shall remain locked except during inspections and maintenance.
6. Overflows shall be designed in strict accordance with current AWWA standards and shall terminate with a gravity hinged and weighted cover. The cover shall fit tightly with no gap over 1/16 inch. If the overflow terminates at any point other than the ground level, it shall be located near enough and at a position accessible from a ladder or the balcony for inspection purposes. The overflow(s) shall be sized to handle the maximum possible fill rate without exceeding the capacity of the overflow(s). The discharge opening of the overflow(s) shall be above the surface of the ground and shall not be subject to submergence.
June 18, 2007

GENERAL CONSTRUCTION NOTES (CONT'D ON SHT 3)

9/10/09

STATE OF TEXAS
CHASE BAROMEO, JR.
33061
LICENSED PROFESSIONAL ENGINEER

Chase Baromeo

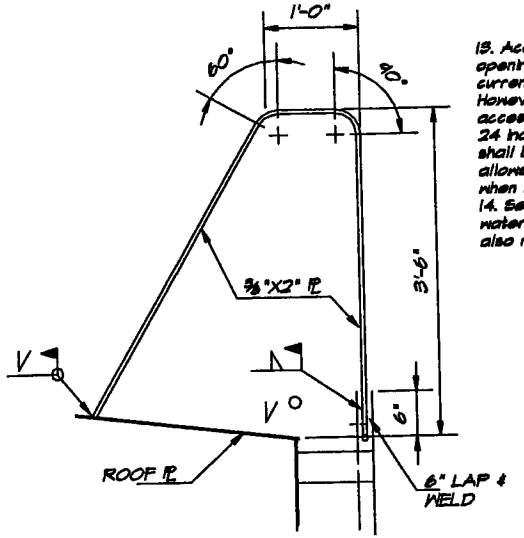
STORAGE TANK IMPROVEMENTS
WATER SERVICES, INC., BAVARIAN HILLS WS PWS -0150235

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC. F-127
CIVIL–STRUCTURAL–ENVIRONMENTAL–MECHANICS–MATERIALS
1360 Hillside Terrace
Buda, Texas 78610

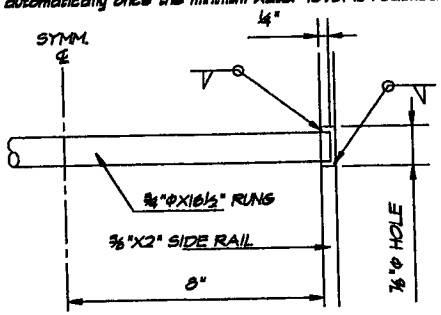
7. All clearwells and water storage tanks shall have a liquid level indicator located at the tank site. The indicator can be a float with a moving target, an ultrasonic level indicator, or a pressure gauge calibrated in feet of water. If an elevated tank or standpipe has a float with moving target indicator, it must also have a pressure indicator located at ground level. Pressure gauges must not be less than three inches in diameter and calibrated at not more than two-foot intervals. Remote reading gauges at the owner's treatment plant or pumping station will not eliminate the requirement for a gauge at the tank site unless the tank is located at the plant or station.
8. Inlet and outlet connections shall be located so as to prevent short circuiting or stagnation of water. Clearwells used for disinfectant contact time shall be appropriately baffled.
9. Clearwells and potable water storage tanks shall be thoroughly tight against leakage, shall be located above the ground water table and shall have no walls in common with any other plant units containing water in the process of treatment. All associated appurtenances including valves, pipes and fittings shall be tight against leakage.

10. Each clearwell or potable water storage tank shall be provided with a means of removing accumulated silt and deposits at all low points in the bottom of the tank. Drains shall not be connected to any waste or sewage disposal system and shall be constructed so that they are not a potential agent in the contamination of the stored water.
11. All clear wells, ground storage tanks, standpipes, and elevated tanks shall be painted, disinfected, and maintained in strict accordance with current AWWA standards. However, no temporary coatings, wax grease coatings, or coating materials containing lead will be allowed. No other coatings will be allowed which are not approved for use (as a contact surface with potable water) by the United States Environmental Protection Agency (EPA), National Sanitation Foundation (NSF), or the United States Food and Drug Administration (FDA). All newly installed coatings must conform to ANSI/NSF Standard 61 and must be certified by an organization accredited by ANSI.
12. No tanks or containers shall be used to store potable water that have previously been used for any non-potable purpose. Where a used tank is proposed for use, a letter from the previous owner or owners must be submitted to the Commission which states the use of the tank.

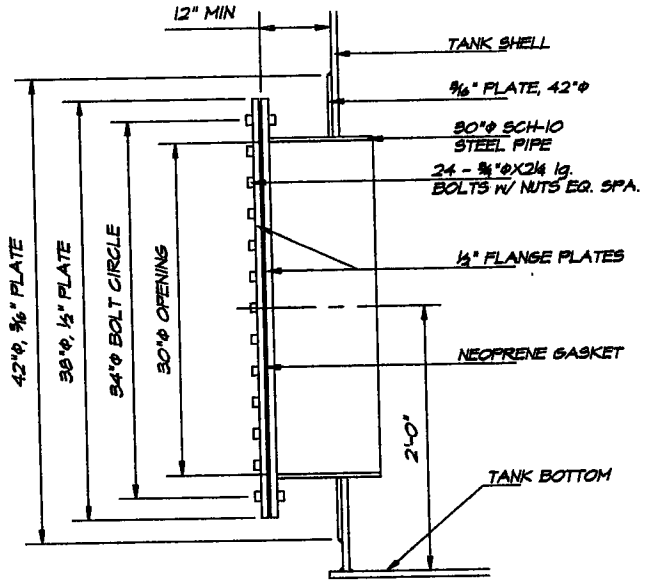
13. Access manways in the riser pipe, shell area, access tube, bowl area or any other location opening directly into the water compartment shall be located in strict accordance with current AWWA standards. These openings shall not be less than 24 inches in diameter. However, in the case of a riser pipe or access tube of 36 inches in diameter or smaller, the access manway may be 18 inches times 24 inches with the vertical dimension not less than 24 inches. The primary access manway in the lower ring or section of a ground storage tank shall be not less than 30 inches in diameter. Where necessary, for any access manway which allows direct access to the water compartment, a gasket shall be used to make a positive seal when the access manway is closed.
14. Service pump installation taking suction from storage tanks shall provide automatic low water level cutoff devices to prevent damage to the pumps. The service pump circuitry shall also resume pumping automatically once the minimum water level is reached in the tank.



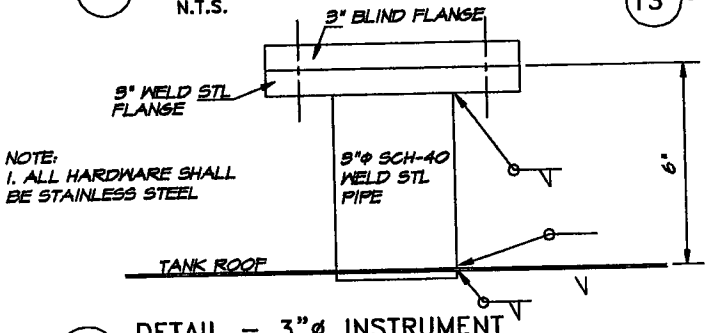
11 DETAIL – HANDRAIL
N.T.S.



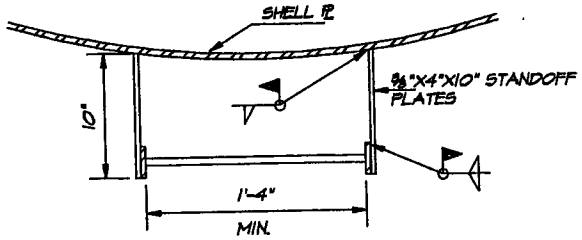
13 DETAIL – RUNG (TYPICAL)
N.T.S.



14 DETAIL – GROUND MANWAY
N.T.S.

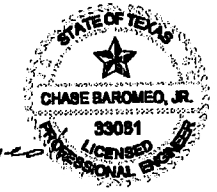


15 DETAIL – 3"ø INSTRUMENT NOZZLES (TYPICAL)
N.T.S.



12 DETAIL – STANDOFF PLATE
N.T.S.

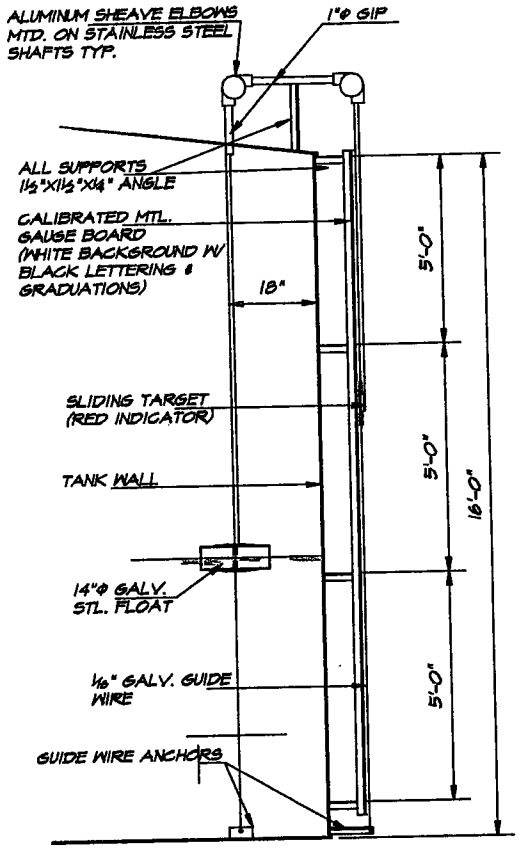
9/10/09



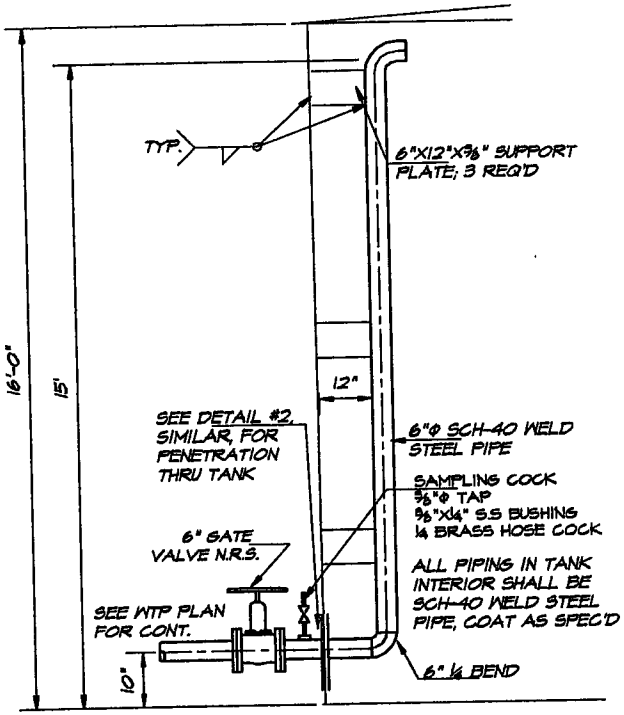
Chase Baromeo

STORAGE TANK IMPROVEMENTS
WATER SERVICES, INC., BAVARIAN HILLS WS PWS -0150235

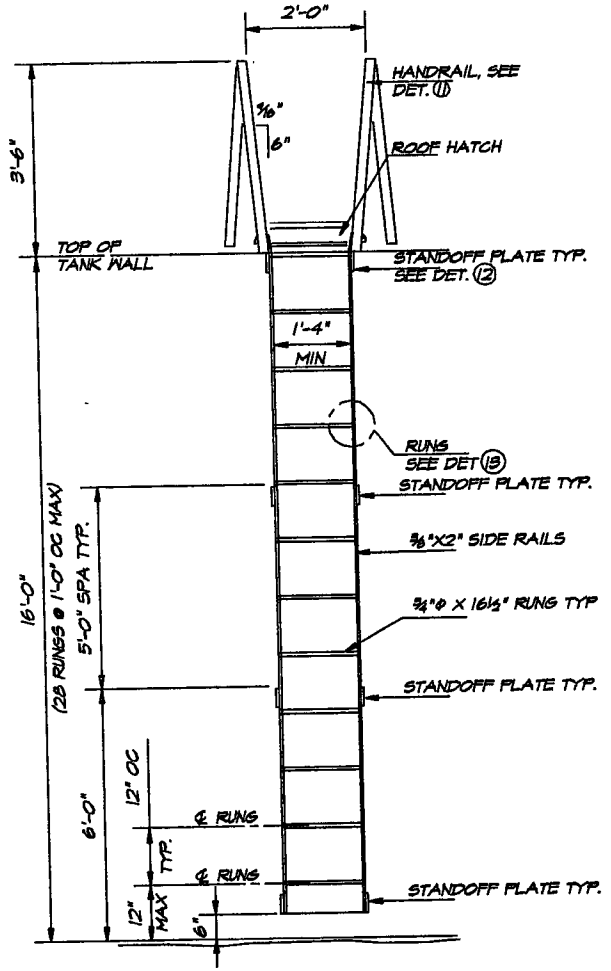
TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC. F-127
CIVIL–STRUCTURAL–ENVIRONMENTAL–MECHANICS–MATERIALS
1390 Hilside Terrace Buda, Texas 78610



2 DETAIL – WATER LEVEL INDICATOR
N.T.S.



3 DETAIL– 4" TANK INLET
N.T.S.



4 DETAIL – ROOF ACCESS LADDER
N.T.S.

9/10/09

STATE OF TEXAS
CHASE BAROMEO, JR.
33061
LICENSED PROFESSIONAL ENGINEER

Chase Baromeo

STORAGE TANK IMPROVEMENTS
WATER SERVICES, INC., BAVARIAN HILLS WS PWS -0150235

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC. F-127
CIVIL–STRUCTURAL–ENVIRONMENTAL–MECHANICS–MATERIALS
1390 Hillside Terrace Buda, Texas 78610

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC F-127
CIVIL — STRUCTURAL — ENVIRONMENTAL — MECHANICS — MATERIALS
AUSTIN DALLAS

September 10, 2009

Vera Poe, P.E.
TCEQ Team Leader
Utilities Technical Review Team
Water Supply Division, MC-153
PO Box 13087
Austin, Texas 78711-3087

Subject: Emergency Replacement Ground Storage tank
Bavarian Hills WS PWS I.D. 0150235, Bexar Co., Tx
Water Services, Inc
9511 RR 620 N, Austin, Texas 78726

Dear Ms Poe;

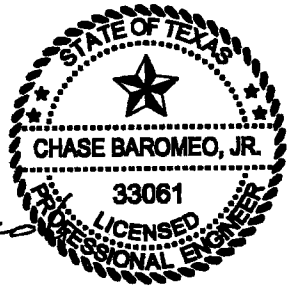
Pursuant to our telephone conversation a couple of weeks ago I am submitting herewith, on behalf of Water Services, Inc., planning materials and TCEQ Plan Review Submittal Form 10233 for emergency replacement of an existing ground storage tank that has rusted out along the wall/bottom intersection; see attached photograph. At the time this photograph was taken in June 2008 there was no noticeable leakage. A few weeks ago the weldments along the wall/bottom interface finally failed and the tank began leaking excessively.

In addition, the existing tank, see attached photo, does not meet the minimum requirements in §290.43(c), 30TAC for ground storage tanks but was not a violation item on the latest TCEQ Sanitary Survey of the Utility. According to the latest information from a letter dated May 16, 2006, authored by Tom Haberle, PE, TCEQ San Antonio Region office, there were no outstanding violations at that time

Water Services, Inc. staff personnel will coordinate installation of the tank with appurtenant piping connections and placement on the existing concrete foundation along with any control elements required for operation, all in accordance with the attached drawings and specifications.

Please advise at your earliest convenience if this approach is acceptable.

Respectfully,



Chase Baromeo, Jr., PE

1390 Hillside Terrace Buda, Texas 78610 Ph. (512) 295-3465 Fax (512) 295-5414

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC F-127
CIVIL — STRUCTURAL — ENVIRONMENTAL — MECHANICS — MATERIALS
AUSTIN DALLAS

September 10, 2009

Vera Poe, P.E.
TCEQ Team Leader
Utilities Technical Review Team
Water Supply Division, MC-153
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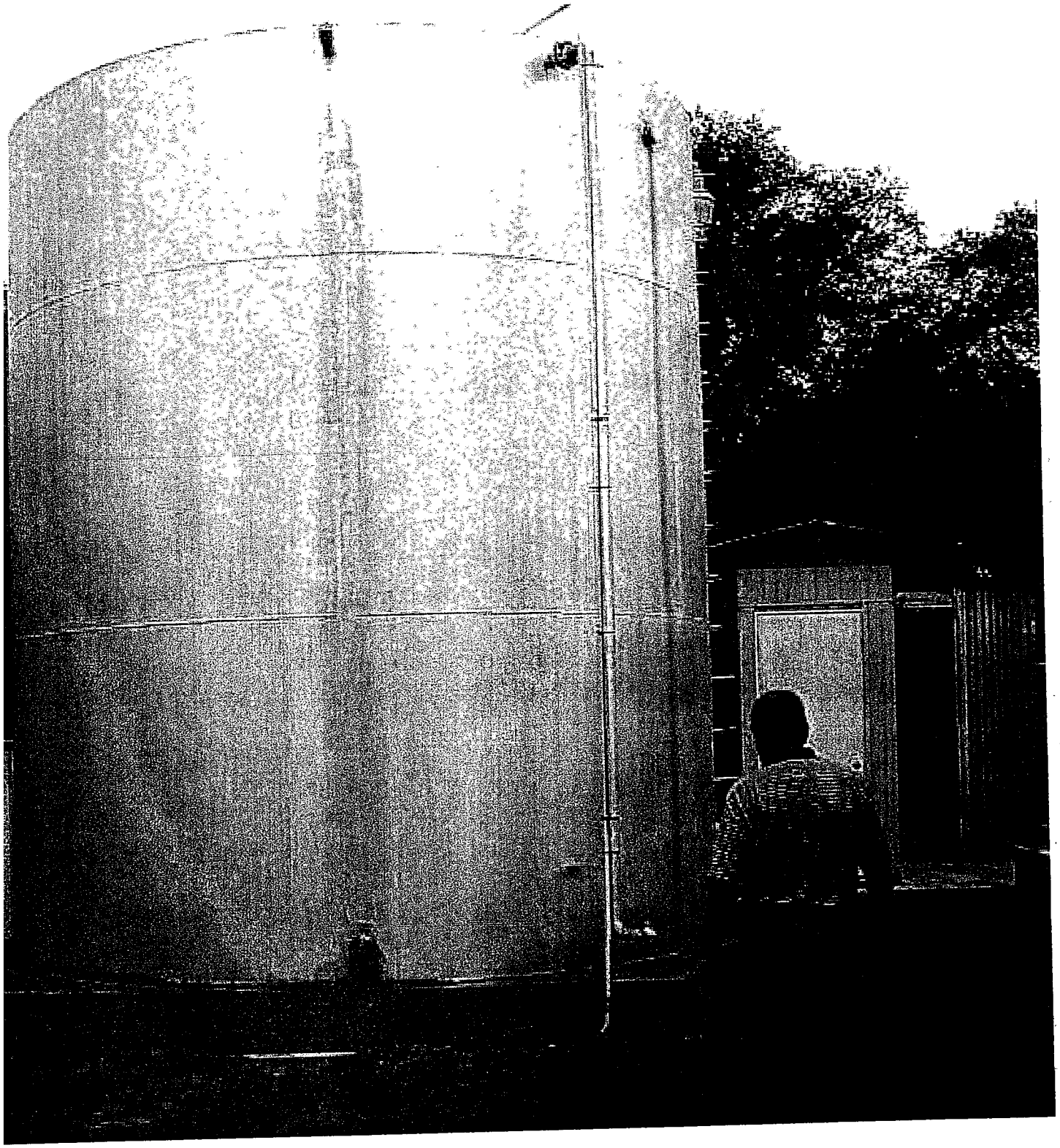
Chase Baromeo, Jr., PE

1390 Hillside Terrace Buda, Texas 78610 Ph. (512) 295-3465 Fax (512) 295-5414



PWS ID / 0150235 /co
Planappr.doc

Texas Commission on Environmental Quality

Protecting Texas by Reducing and Preventing Pollution

October 6, 2009

CHASE BAROMEO JR, P.E.
TRAVIS ASSOCIATES CONSULTING ENG INC
1390 HILLSIDE TERRACE
BUDA, TX 78610

Re: BAVARIAN HILLS- Public Water System I.D. # 0150235
Proposed 20,000 Gallon Replacement Ground Storage Tank
Engineer Contact Telephone: (512) 295-3465
Plan Review Log Number 200909-052
Bexar County, Texas

CN603264763 ; RN101211605

Mr. Baromeo:

The proposed replace gst and related facilities **are approved for construction** based on our review of planning material received on September 14, 2009, with your letter dated September 10, 2009. The project generally meets the minimum requirements of the TCEQ's Chapter §290 - Rules and Regulations for Public Water Systems (Rules).

The submittal consisted of 4 sheets of engineering drawings, technical specifications and an engineering summary. The approved project consists of:

- One 20,000 gallon, AWWA D100, replacement steel-welded ground storage tank to be erected on existing concrete foundation.
- Various valves, fittings, and related appurtenances.

This approval is for the construction of the above listed items only. **Any wastewater components contained in this design were not considered.**

The Bavarian Hills public water supply system provides water treatment for the system.

An appointed engineer must notify the TCEQ's Region Office at when construction will start. Please keep in mind that within 60 days of project completion the engineer must attest in writing

that the project was constructed as described in the approved plans, specifications and any change orders filed with the TCEQ as required in §290.39(c)(3)(C) of the Rules.

Please refer to the Utilities Technical Review Team's Log No. 200909-052 in all correspondence for this project. This will help complete our review and prevent it from being considered a new project.

Please complete a copy of the most current Public Water System Plan Review Submittal form for future submittal to TCEQ for review of improvements to a Public Water System. Every blank on the form must be completed to minimize any delays in review of your project. The document is available on our WEB site at the address shown below.

http://www.tceq.state.tx.us/assets/public/permitting/forms/10233.pdf

For future reference, you can review part of the Utilities Technical Review Team's database to see if we have received your project. This is available on the TCEQ's homepage on the Internet at the following address:

http://www.tceq.state.tx.us/assets/public/permitting/watersupply/ud/planrev_list.pdf

You can download most of the well construction checklists and the latest revision of Chapter 290 "Rules and Regulations for Public Water Systems" from this site.

If you have any questions please contact me at (512) 239-1467 or the Internet address: "jmontane@tceq.state.tx.us" or if by correspondence, include MC 153 in the letterhead address below.

Sincerely,

Jeremy J. Montanez, E.I.T.
Utilities Technical Review Team
Water Supply Division MC-153

Deborah Helstrom, P.E.
Utilities Technical Review Team
Water Supply Division MC-153

JM/DH

cc: BAVARIAN HILLS Attn: Joe Torralva, Project Manager, 9511 RR 620 N, Austin, Texas, 78726

Steel Inspectors of Texas, Inc.
P O Box 150987 817-246-8096 Office
Ft Worth, Texas 76108 817-246-5889 Fax

COATING INSPECTION REPORT

Date 4-26-10 Report 19759-0
Page 1 of 2

Client	Travis and Associates 1390 Hillside Terrace Buda, TX 78610	Project	Bavarian Hills Ground Storage Tank 20,000 Gallon, S-2986
Contractor	Bulldog Steel	Inspector	Cindy Holmes, NACE #6296

ABRASIVE MATERIAL

Abrasive Type:
Recycled: Air Quality N/A
Equipment

SURFACE PREPARATION

Standard Specified
Standard Achieved N/A
Profile Reading

ENVIRONMENTAL CONDITIONS

Date	4/26/2010			
Time	9:00 AM			
Dry Bulb	67			
Wet Bulb	53			
Humidity	37%			
Dew Point	40			
Surface Temp	66			
Weather	Partly Cloudy, East Winds at 10 mph			

COATING MATERIAL

Material used Tnemec Series 20 Pota Pox
Batch No. Part A KC2009071184
Part B KC2010010360
Part C N/A
Thinner: None
Application method Brush
Color: Tank White, 15BL

DRY FILM THICKNESS

Area	Number of Readings	Low	High	Mean	Comments
Total System on Exterior Tank Surfaces	35	10.1	16.8	12.93	Page 2 of 2

DFT gage used Positector 6000

Additional Information: A reinspection of the coating system on the above noted tank was performed today. Exterior total system dry film thickness readings now meet the 11.0 mil requirement. Visual inspection is acceptable at this time which is prior to loading for shipping.

Interior surfaces had acceptable dry film thickness on previous inspection of 4-14-2010 except for pipe. The pipe was recoated and now meets the 12.0 mil requirement. The low voltage wet sponge holiday detector inspection was performed again. Two small holidays (one on edge of nozzle and one on edge of manway flange) were found and touch up coated today. Interior surfaces now acceptable.

Report 19797
4-26-10
Page 2 of 2

Readings - B1	4/26/2010 2:04:01 PM	
1	8:14:42 AM 4/26/2010	14.4
2	8:14:45 AM 4/26/2010	14.3
3	8:14:52 AM 4/26/2010	10.1
4	8:15:24 AM 4/26/2010	12.2
5	8:15:37 AM 4/26/2010	13.3
6	8:16:12 AM 4/26/2010	12.8
7	8:16:14 AM 4/26/2010	11.2
8	8:16:36 AM 4/26/2010	13.4
9	8:16:39 AM 4/26/2010	10.7
10	8:16:42 AM 4/26/2010	10.7
11	8:16:53 AM 4/26/2010	15.0
12	8:16:56 AM 4/26/2010	15.0
13	8:17:45 AM 4/26/2010	16.8
14	8:17:48 AM 4/26/2010	11.3
15	8:17:51 AM 4/26/2010	10.4
16	8:18:12 AM 4/26/2010	16.0
17	8:18:21 AM 4/26/2010	14.2
18	8:18:37 AM 4/26/2010	12.9
19	8:18:47 AM 4/26/2010	14.6
20	8:18:54 AM 4/26/2010	12.9
21	8:18:57 AM 4/26/2010	13.4
22	8:43:53 AM 4/26/2010	12.0
23	8:43:57 AM 4/26/2010	10.5
24	8:44:02 AM 4/26/2010	16.0
25	8:44:04 AM 4/26/2010	14.9
26	8:44:23 AM 4/26/2010	11.2
27	8:44:36 AM 4/26/2010	13.4
28	8:44:38 AM 4/26/2010	13.1
29	8:44:40 AM 4/26/2010	13.8
30	8:44:44 AM 4/26/2010	10.3
31	8:44:48 AM 4/26/2010	10.8
32	8:44:50 AM 4/26/2010	12.2
33	8:44:54 AM 4/26/2010	14.6
34	8:45:18 AM 4/26/2010	11.8
35	8:45:25 AM 4/26/2010	12.4

Total System on Extruder Tank Surfaces

Summary - B1	4/26/2010 2:04:01 PM
Max	16.80
Min	10.10
Mean	12.93
StdDev.	1.82

Annotations - B1	4/26/2010 2:04:01 PM
Gage Model: 6000F3	
Gage S/N: 626229	
Probe Model: F	
Probe S/N: 128698	
User:	
Part:	
Substrate:	

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC F-127
CIVIL — STRUCTURAL — ENVIRONMENTAL — MECHANICS — MATERIALS
AUSTIN DALLAS

May 26, 2010

Vera Poe, P.E.
TCEQ Team Leader
Utilities Technical Review Team
Water Supply Division, MC-153
PO Box 13087
Austin, Texas 78711-3087

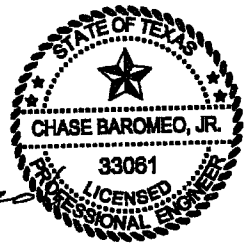
Subject: 20,000 gallon Ground Storage tank installation w/appurtenances
Bavarian Hills WS PWS I.D. 0150235, Bexar Co., Tx
TCEQ Log No. 200909-052

Dear Ms Poe;

Installation of the subject ground storage tank was complete on or about May 14, 2010 in accordance with approved planning materials.

All completed construction was in general compliance with approved construction documents under above referenced TCEQ Log No. on file with the Commission as required under §290.39(h)(3) of the rules.

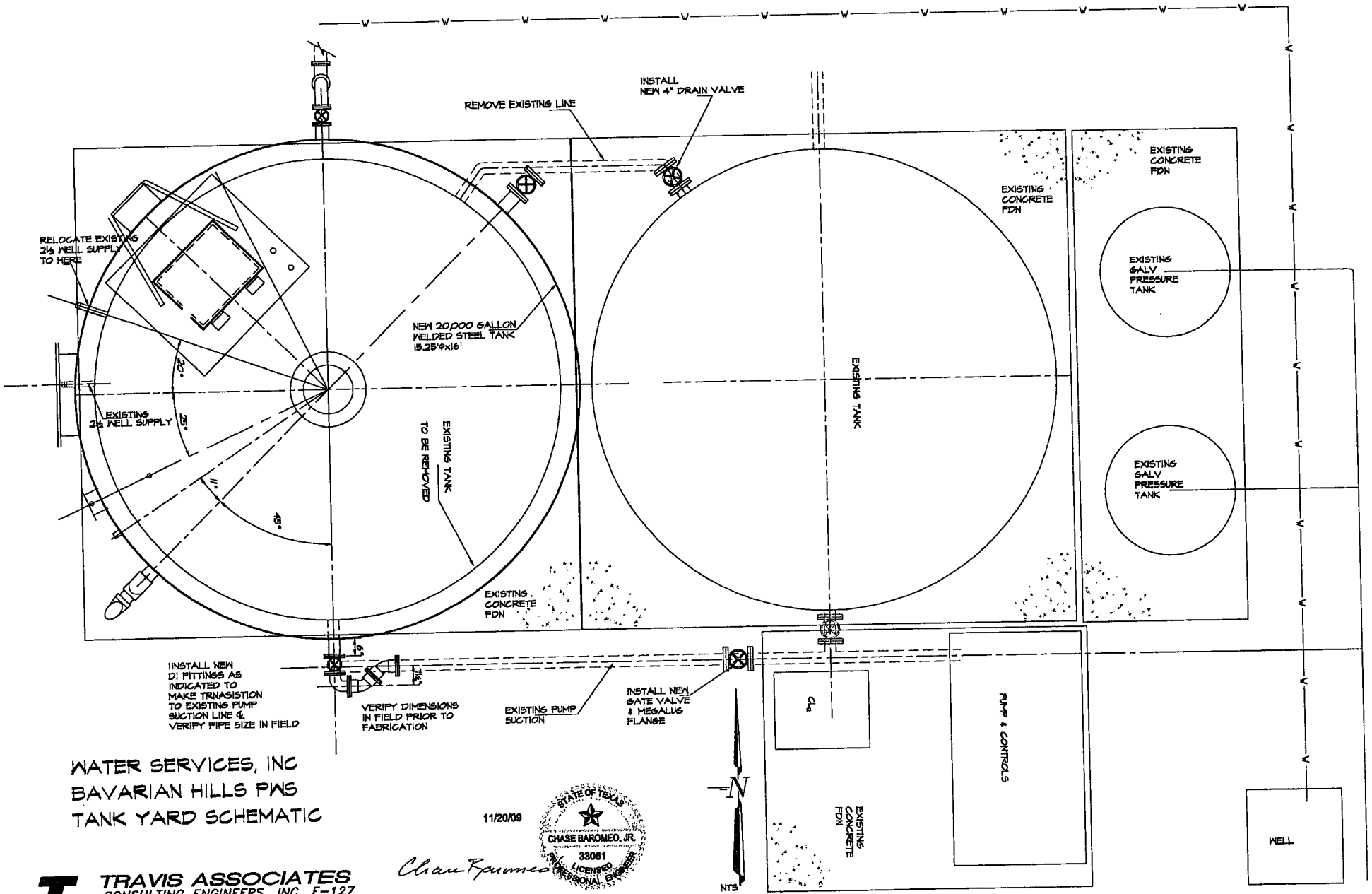
Respectfully



Chase Baromeo, Jr., PE

xc: Joe Torralva, SWWC Project Manager
David Yohe, SWWC Regional Regulatory Compliance Manager

1390 Hillside Terrace Buda, Texas 78610 Ph. (512) 295-3465 Fax (512) 295-5414



WATER SERVICES, INC
BAVARIAN HILLS PWS
TANK YARD SCHEMATIC

11/20/09

STATE OF TEXAS
CHASE BAROMEO, JR.
33061
LICENSED PROFESSIONAL ENGINEER

TRAVIS ASSOCIATES
CONSULTING ENGINEERS, INC. F-127
CIVIL-STRUCTURAL-ENVIRONMENTAL-MECHANICS-MATERIALS
1380 Hillside Terrace Buda, Texas 78610

Water Well Documentation

Bavarian Hills Well #1 Location by GPS coordinates

Bavarian Hills Well #3 location by GPS

Well location #4 from record GPS coordinates

TWDB Groundwater Database Query Result

REPORTED WATER WELL DATA ON STATE WELL NUMBER = 6821103

Query for another State Well Number: [ ] Submit

| Water Quality | Infrequent Constituent | Water Level | 5 Day Water Level | Well Casing | Remarks | Scanned Images |

*For a complete explanation, click here to read the TWDB Groundwater Data System Data Dictionary.

Field	Value	*Explanation
STATE WELL NUMBER	6821103	
COUNTY CODE	29	Bexar County, Texas
BASIN	19	San Antonio River Basin
PREVIOUS WELL NUMBER		
LATITUDE	294233	DMS (in decimal degrees: 29.709167)
LAT DEC	29.709166	
LONGITUDE	982937	DMS (in decimal degrees: -98.493611)
LONG DEC	-98.49361	
OWNER 1	Bavarian Hills #3	
OWNER 2	Diamond Water Service	
DRILLER 1		
DRILLER 2		
SOURCE OF COORDINATES	0	
AQUIFER CODE	218GLRSL	Glen Rose Limestone, Lower Member
AQUIFER ID1	28	Trinity Aquifer
AQUIFER ID2		
AQUIFER ID3		
ELEVATION	1277	feet
ELEVATION MEASUREMENT METHOD	M	Interpolated From Topo Map
ALPHA CODE	58260	BAVARIAN HILLS SUBDIV. WATER SERVICE II
DATE DRILLED	11111985	
WELL TYPE	W	Withdrawal of Water

WELL DEPTH	520	feet
SOURCE OF DEPTH	O	Owner
TYPE OF LIFT	S	Submersible Pump
TYPE OF POWER	E	Electric Motor
HORSEPOWER	3.00	
PRIMARY WATER USE	P	Public Supply
SECONDARY WATER USE		
TERTIARY WATER USE		
WATER LEVEL AVAILABLE	N	
WATER QUALITY AVAILABLE	Y	Click here for water quality data
WELL LOGS AVAILABLE		
OTHER DATA AVAILABLE		
DATE COLLECTED OR UPDATED	07292003	
REPORTING AGENCY	01	TWDB or Predecessor Agency
WELL SCHEDULE IN FILE		
CONTRUCTION METHOD		
COMPLETION		
CASING MATERIAL		
SCREEN MATERIAL		
GMA	9	
RWPA	L	
DISTRICTID	200109LX	

Groundwater Database Disclaimer

The Groundwater Database (GWDB) of the Texas Water Development Board (TWDB) contains information about more than 123,500 water well, spring, and oil/gas test sites in Texas including associated water level and water quality data. Because data collection methods and data maintenance have varied and evolved over the years, the information in the GWDB has a range of accuracy that the user needs to be aware of. See Explanation of Groundwater Data for information on the sources of information and level of accurracy in the document.

The TWDB is providing information via this Web site as a public service. Except where noted, all of the information provided is believed to be accurate and reliable; however, the Texas Water Development Board (TWDB) assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. **PLEASE NOTE** that users of this Web site are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via this Web site. TWDB specifically disclaims any and all liability for any claims or damages that may result from providing the Web site or the information it contains, including any Web sites

D of windmill NF

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer lower Glen Rose Field No. _____ State Well No. 68-21-103

Owner's Well No. _____ County Bexar

1. Location: ___ 1/4, ___ 1/4 Sec. _____, Block _____ Survey _____

2. Owner: Bavarian Hills Subdivision Address: RT 10 Box 28 San Antonio Tex 78216

Remarks: W.A. Swinney Address: _____

Driller: _____ Address: _____

3. Elevation of _____ is 1277 ft. above msl, determined by Topo

4. Drilled: _____ 19___; Dug, Cable Tool, Rotary, _____

*5. Depth: Rept. 500+ ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed _____

7. Pump: Mfgr. _____ Type Sub

No. Stages _____, Bowls Diam. ___ in., Setting 485 ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel elec Make & Model _____ HP. 3

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test ___ Made by _____

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: Utm ft. rept. meas. _____ 19___ above/below wet casing which is ___ ft. above/below surface.

_____ ft. rept. meas. _____ 19___ above/below _____ which is ___ ft. above/below surface.

_____ ft. rept. meas. _____ 19___ above/below _____ which is ___ ft. above/below surface.

_____ ft. rept. meas. _____ 19___ above/below _____ which is ___ ft. above/below surface.

12. Use: Dom., Stock, (Public Supply) Ind., Irr., Waterflooding, Observation, Not Used, _____

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, _____

15. Record by: G. Manguardt Date 10-27-1972

Source of Date obs't

16. Remarks: Depth of well gotten from Hammet Water system he cleaned out well & installed Sub. pump. (Depths estimated.)

CASING & BLANK PIPE

Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
7	Steel	0	--

WELL SCREEN

Screen Openings _____

Diam. (in.)	Type	Setting, ft. from	to

well is in 4-- guad on highway base

(Sketch) 21-405

Topo

68-21-103

TWDBE-WD-2

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY
Organization No. _____ Lab No. _____
Work No. _____

CHEMICAL WATER ANALYSIS REPORT

County 015 BEXAR
State Well No. 68-21-103
Well No. _____
Date Collected 07-12-84

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

Analysis copied from Texas Department of Health Files

Owner BAVARIAN HILLS ___ Send copy to owner Sample No. _____ By CSP
Address _____ Well Location _____
Date Drilled _____ Depth 482 ft. WBF _____ Source (type of well) _____
Producing intervals _____ Water level _____ ft. Sample depth _____ ft.
Sampled after pumping _____ hrs. Yield _____ GPM (mass. est.) Temperature _____ °F _____ °C
Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use _____ Remarks _____

(FOR LABORATORY USE ONLY) KEY PUNCHED

CHEMICAL ANALYSIS

Laboratory No. _____
Date Received 7-13-84
Date Reported 9-27-84

		MG/L	ME/L
Silica	00955		
Calcium	00910	69	
Magnesium	00920	42	
Sodium	00929	12	
	Total		
☐ Potassium	00937		
[3] ☐ Manganese	01055	<0.02	%Na _____
☐ Boron	01022		SAR _____
[3] ☐ Total Iron	01045	0.19	RSC _____
☐ (other) _____		MG/L	

		MG/L	ME/L
Carbonate [1]	00445	6	
Bicarbonate	00440	345	
Sulfate	00945	62	
Chloride	00940	12	
Fluoride	00951	1.4	
Nitrate	71850	0.53	
pH	00403	8.4	
	Total		
[1] Dissolved Solids (residue at 180°C)	70300	378	
Phenolphthalein Alkalinity as $CaCO_3$	00415	5	
Total Alkalinity as $CaCO_3$	00410	293	
Total Hardness as $CaCO_3$	00900	346	
[2] Nitrogen Cycle			
Ammonia - N	00610		
Nitrite - N	00615		
Nitrate - N	00620		
Organic Nitrogen	00605		

Specific Conductance (micromhos/cm³) 00095 _____
Diluted Conductance (micromhos/cm³): _____ x _____ = 755

"☐" items will be analyzed if checked.

[1] The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.
[2] Nitrogen cycle requires separate sample.
[3] Total Iron and Manganese require separate sample.

Analyst _____ Checked By _____

TWDB-0148 (Rev.04-07-86)

TWDB Water Quality Field Data Sheet

New Well: yes / no
State Well Number: 68-21-103
County: Bexar
County Code: 029
Aquifer Code: 218 GCRSL
Aquifer Id: 23

Send Results To: Owner / Lessee
Owner's Name: Apex Water Services, Inc
Lessee's Name: Bavarian Hills
Attention: David Wallace
Mailing Address: P.O. Box 421
Bulverde, Tx 78163
Well Number: #3

Type of Sample: LCRA / HACH
Sample Number: 3035
Date: 7/29/03
Sampler(s): D. Coker

Daily Meter Calibration:

pH	7	7.00
	4 or 10	9.45
Conductivity	500	
	1000	1003
	2000	
	5000	

Add enough of the proper acid to each bottle that is preserved to drop the pH to 2.

1 (on ice)	2	3 (on ice)	4 (on ice)	5
500ml (filtered)	500ml (filtered)	250ml (filtered)	1 L	1 L
Anions / Total Alkalinity ✓	1.5 Cations ✓	Nitrate/Nitrite ✓	Tritium Dating ✓	Carbon 14
no preservative	1 ml Nitric (HNO_3)	1.0 0.5 ml Sulfuric (H_2SO_4)	No preservative	4-5 ml NaOH

6
1 - 500 ml
Oxy 18, Deuterium ✓
Carbon 13

Time In: 12:41
Time Out:
W.L. remark:
W. L. depth from LSD (ft.):
Pumping Since: 12:51
Sampling Point: FOUNTAIN
Well Use: PS
Lift: S
Power: E
Latitude: 294233 N
Longitude: 0982937 W
Elevation: ——— ft.
Sample Time: 13:15
Filter pressure: hand / line

Field Alkalinity Titration:
7.10 Start pH 4.51 End pH
50 **ml. Sample Size**
16.3 ml. Acid added for Total
ml. Acid added for Phenol

Items below calculated from ml. acid added data:
326 Field Total Alkalinity: 0.0 mg/L
Field Phenol Alkalinity: 0.0 mg/L

Notes: Pumped already this morning

W. Q. Stabilization Parameters Table

						Final Readings:
Time:	1300	13:04	13:06	13:08	13:10	13:12
pH:	7.12	7.09	7.07	7.06	7.05	7.04
Temperature:	22.6	22.6	22.7	22.8	22.8	22.8
Conductivity:	665	710	695	685	670	662
Conductivity Temperature:						

Items Below Calculated Later From Results:
Total Hardness: 355
Calculated TDS (mg/L): 403

Data Entered By Sampler Into Database: yes / no

LCRA Environmental Laboratory Services

Date: *19-Aug-03*

CLIENT: Texas Water Development Board
Client Sample ID: 68-21-103
Lab Order: 0307371 **File No:** 25602
Project: TWDB FY03
Collection Date: 7/29/2003 1:15:00 PM
Lab ID: 0307371-06
Matrix: GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
ICP METALS DISSOLVED		E200.7						Analyst: **MLP**
Calcium		89.1		0.20	mg/L	1	21210	8/14/2003 1:39:07 PM
Magnesium		31.9		0.20	mg/L	1	21210	8/14/2003 1:39:07 PM
Potassium		1.69		0.20	mg/L	1	21210	8/14/2003 1:39:07 PM
Sodium		12.8		0.70	mg/L	1	21210	8/14/2003 1:39:07 PM
ICP METALS DISSOLVED		E200.7						Analyst: **MLP**
Boron		62		50	µg/L	1	21221	8/14/2003 1:39:07 PM
Iron		ND		50	µg/L	1	21221	8/14/2003 1:39:07 PM
Strontium		2090		20	µg/L	1	21221	8/14/2003 1:39:07 PM
ICPMS DISSOLVED METALS		E200.8						Analyst: **SW**
Aluminum		ND		4.00	µg/L	1	21191	8/13/2003
Antimony		ND		1.00	µg/L	1	21191	8/13/2003
Arsenic		ND		2.00	µg/L	1	21191	8/13/2003
Barium		31.7		1.00	µg/L	1	21191	8/13/2003
Beryllium		ND		1.00	µg/L	1	21191	8/13/2003
Cadmium		ND		1.00	µg/L	1	21191	8/13/2003
Chromium		ND		1.00	µg/L	1	21191	8/13/2003
Cobalt		ND		1.00	µg/L	1	21191	8/13/2003
Copper		5.60		1.00	µg/L	1	21191	8/13/2003
Lead		1.36		1.00	µg/L	1	21191	8/13/2003
Lithium		6.25		2.00	µg/L	1	21191	8/13/2003
Manganese		4.53		1.00	µg/L	1	21191	8/13/2003
Molybdenum		9.91		1.00	µg/L	1	21191	8/13/2003
Nickel		10.1		1.00	µg/L	1	21191	8/13/2003
Selenium		ND		4.00	µg/L	1	21191	8/13/2003
Thallium		ND		1.00	µg/L	1	21191	8/13/2003
Vanadium		ND		1.00	µg/L	1	21191	8/13/2003
Zinc		781		40.0	µg/L	10	21244	8/14/2003
CATION/ANION BALANCES		CALCULATION						Analyst: **WM**
Cation/Anion Balance		Balanced		0	Date	1	21260	8/18/2003
ANIONS BY ION CHROMATOGRAPHY, DISSOLVE		E300						Analyst: **WM**
Bromide Dissolved		0.06		0.02	mg/L	1	21152	8/12/2003 1:13:02 AM
Chloride Dissolved		19.7		1.00	mg/L	1	21152	8/12/2003 1:13:02 AM
Fluoride Dissolved		0.66		0.01	mg/L	1	21152	8/12/2003 1:13:02 AM
Sulfate Dissolved		36.7		1.00	mg/L	1	21152	8/12/2003 1:13:02 AM
ALKALINITY		M2320 B						Analyst: **CMM**
Alkalinity, Phenolphthalein		ND		0	mg/L CaCO3	1	21008	8/4/2003
Alkalinity, Total (As CaCO3)		324		2	mg/L CaCO3	1	21008	8/4/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

LCRA Environmental Laboratory Services

Date: *19-Aug-03*

CLIENT: Texas Water Development Board
Client Sample ID: 68-21-103
Lab Order: 0307371 **File No:** 25602
Project: TWDB FY03
Collection Date: 7/29/2003 1:15:00 PM
Lab ID: 0307371-06
Matrix: GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
NITRATE AND NITRITE		**E353.2**						Analyst: **WM**
Nitrogen, Nitrate & Nitrite		0.46		0.02	mg/L	1	21022	8/5/2003
SILICA		**E370.1**						Analyst: **WM**
Silica, Dissolved (as SiO2)		11.9		0.50	mg/L	1	20949	7/31/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

STABLE CARBON, HYDROGEN AND OXYGEN ISOTOPE ANALYSES FOR THE TEXAS WATER DEVELOPMENT BOARD. ATTN: DR. ALI CHOWDHURY.

CONTRACT #03-0483-0478

Bexar Co.

SAMPLE		$\delta^{13}C_{PDB}$	δD_{SMOW}	$\delta^{18}O_{SMOW}$
3019-68-20-405	7/22/03	-2.9, -3.4	-30, -30	-4.6
3020-68-13-508	"	-9.0	-32, -31	-4.6
3021-68-21-201	7/22/03	-2.1, -2.5	-32, -32	-4.8
3022-68-34-803	"	-7.6	-30, -30	-4.3, -4.4
3023-69-07-106	7/23/03	-6.8	-38, -38	-5.6, -5.6
3024-68-17-802	"	-6.9	-29, -30	-4.0, -4.0
3025-68-11-404	7/23/03	-0.5, -0.4	-35, -34	-5.2
3026-68-19-323	7/24/03	-3.2	-30, -30	-4.5
3027-68-19-303	7/24/03	-4.3	-29, -30	-4.4
3028-68-19-316	"	-1.6	-28, -29	-4.5
3029-68-11-810	7/25/03	-3.9	-30, -30	-4.3, -4.2
3030-69-24-504	7/28/03	-8.1	-36, -36	-5.4
3031-68-25-507	7/28/03	-3.1	-32, -34	-4.7, -4.8
3032-68-19-506	7/29/03	-9.0, -9.2	-28, -28	-4.8
3033-68-19-612	7/29/03	-3.4	-30, -30	-4.7
3034-68-11-809	"	-1.8	-34, -34	-5.0, -4.9
3035-68-21-103	7/29/03	-4.9	-33, -33	-4.8

CSL Ref#EJ69

Coastal Science Laboratories Phone/Fax 512-288-5533 email: info@csl-sira.com

TWDB Water Quality Field Data Sheet

WQ FY07

Newly Inventoried Well: NO

SWN: 68-21-103
County: BEXAR
County Code: 029
Aquifer Code: 128GLRSL
Aquifer Id: 128

Name: ~~OPERATOR~~ DIAMOND WATER
Address: provided by ECO RESOURCES
9511 RANCH RD. 620 N.
AUSTIN, TX. 78726
Attention:
Well Name or #: BAVARIAN HILLS

ID Number: 8277
Date: 8/14/07
Sampler(s): D WUERCH

1	2	3	4	5	6	7	8			
40 ml unfiltered Atrazine Ice	250 ml filtered Cation (HNO3)	500 ml filtered Anions/T. Alk. Ice	500 ml filtered Nitrate Ice+(H2SO4)							

All acidified samples pH <2.0. (*) If natural pH<7, then add NaOH until pH is >7. If natural pH is ≥7, no NaOH required.

Calibration Verification Readings

pH	7 =	7.01
	4 or 10 =	10.03
SLP =		96.3
Conductivity	500 =	502
	1000 =	980
	2000 =	1940
	5000 =	4870

Time In: 9:50
Time Out: 10:30

Water Level: —
W.L. remark: 41
M.P. =

Pumping time: POA
Sampling Point: FAW

Well Use: P
Lift: S
Power: E

FIELD G.P.S. readings
Latitude: 29° 42' 32" N
Longitude: 98° 29' 40" W

Casing Type:
Casing Size: "

Sample Time: 10:23
Filter pressure: hand pump / line / spring

Field Alkalinity Titration:
7.16 Start pH 4.50 End pH
50 mL Sample Size
mL Acid Phenol (> 8.3)
15.1 mL Acid Total (to pH 4.5)
mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): — mg/L
Total Alkalinity (39086): 302 mg/L

Items Below Calculated Later From Results:
Dissolved Solids (mg/L):
Hardness (as CaCO3):
Balanced:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	10:01	10:06	10:11						
pH	6.90	6.89	6.90						
Celsius Temp.	22.3	22.3	22.3						
Conductivity	602	602	602						

Notes:

Data Entered By Sampler into Database: yes / no

ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: Texas Water Development Board
Project: TWDB
Lab ID: C07081024-001
Client Sample ID: 6821103 (8277)

Report Date: 10/26/07
Collection Date: 08/14/07 10:23
DateReceived: 08/17/07
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Alkalinity, Phenolphthalein as CaCO3	ND	mg/L		1		A2320 B	08/22/07 14:35 / bas
Alkalinity, Total as CaCO3	307	mg/L		1		A2320 B	08/22/07 14:35 / bas
Bromide	ND	mg/L		0.50		E300.0	08/20/07 23:02 / bt
Calcium	101	mg/L		0.5		E200.7	08/26/07 21:57 / ts
Chloride	12	mg/L		1		A4500-Cl B	08/21/07 09:38 / jl
Fluoride	0.4	mg/L		0.1		A4500-F C	08/21/07 15:15 / bas
Magnesium	21.2	mg/L		0.5		E200.7	08/26/07 21:57 / ts
Nitrogen, Nitrate+Nitrite as N	1.8	mg/L		0.1		E353.2	08/20/07 14:36 / jjl
Potassium	0.9	mg/L		0.5		E200.7	08/26/07 21:57 / ts
Silica	10.9	mg/L		0.1		E200.7	08/26/07 21:57 / ts
Sodium	7.1	mg/L		0.5		E200.7	08/26/07 21:57 / ts
Sulfate	10	mg/L		1		A4500-SO4 E	08/20/07 11:32 / zd
METALS - DISSOLVED							
Aluminum	2	ug/L		1		E200.8	09/01/07 12:18 / bws
Antimony	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Arsenic	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Barium	30	ug/L		1		E200.8	09/01/07 12:18 / bws
Beryllium	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Boron	ND	ug/L		100		E200.7	08/26/07 21:57 / ts
Cadmium	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Chromium	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Cobalt	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Copper	2	ug/L		1		E200.8	09/01/07 12:18 / bws
Iron	ND	ug/L		30		E200.7	08/26/07 21:57 / ts
Lead	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Lithium	3	ug/L		1		E200.8	08/27/07 19:39 / sml
Manganese	ND	ug/L		1		E200.7	08/26/07 21:57 / ts
Molybdenum	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Selenium	1	ug/L		1		E200.8	09/01/07 12:18 / bws
Strontium	376	ug/L		1		E200.8	09/01/07 12:18 / bws
Thallium	ND	ug/L		1		E200.8	09/01/07 12:18 / bws
Vanadium	2	ug/L		1		E200.8	09/01/07 12:18 / bws
Zinc	22	ug/L		1		E200.8	09/01/07 12:18 / bws
DATA QUALITY							
A/C Balance (± 5)	1.90	%				Calculation	09/04/07 11:40 / bws
Anions	6.83	meq/L				Calculation	09/04/07 11:40 / bws
Cations	7.09	meq/L				Calculation	09/04/07 11:40 / bws

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACK# C07081024

TWDB Groundwater Database Query Result

REPORTED WATER WELL DATA ON STATE WELL NUMBER = 6821104

Query for another State Well Number: [ ] Submit

| Water Quality | Infrequent Constituent | Water Level | 5 Day Water Level | Well Casing | Remarks | Scanned Images |

*For a complete explanation, click here to read the TWDB Groundwater Data System Data Dictionary.

Field	Value	*Explanation
STATE WELL NUMBER	6821104	
COUNTY CODE	29	Bexar County, Texas
BASIN	19	San Antonio River Basin
PREVIOUS WELL NUMBER		
LATITUDE	294232	DMS (in decimal degrees: 29.708889)
LAT DEC	29.708888	
LONGITUDE	982938	DMS (in decimal degrees: -98.493889)
LONG DEC	-98.493888	
OWNER 1	Bavarian Hills	
OWNER 2	Well #4	
DRILLER 1	Haskin Pump and	
DRILLER 2	Service, Inc.	
SOURCE OF COORDINATES	1	
AQUIFER CODE	218GLRSL	Glen Rose Limestone, Lower Member
AQUIFER ID1	28	Trinity Aquifer
AQUIFER ID2		
AQUIFER ID3		
ELEVATION	1275	feet
ELEVATION MEASUREMENT METHOD	M	Interpolated From Topo Map
ALPHA CODE	58260	BAVARIAN HILLS SUBDIV. WATER SERVICE II
DATE DRILLED	11161976	
WELL TYPE	W	Withdrawal of Water

WELL DEPTH	525	feet
SOURCE OF DEPTH	D	Driller's Log
TYPE OF LIFT	N	None
TYPE OF POWER		
HORSEPOWER		
PRIMARY WATER USE	U	Unused
SECONDARY WATER USE		
TERTIARY WATER USE		
WATER LEVEL AVAILABLE	M	Click here for water level data
WATER QUALITY AVAILABLE	Y	Click here for water quality data
WELL LOGS AVAILABLE	D	
OTHER DATA AVAILABLE		
DATE COLLECTED OR UPDATED	10271977	
REPORTING AGENCY	01	TWDB or Predecessor Agency
WELL SCHEDULE IN FILE		
CONTRUCTION METHOD	C	Cable-tool
COMPLETION	X	Open Hole
CASING MATERIAL	P	PVC, Fiberglass, other Plastic
SCREEN MATERIAL		
GMA	9	
RWPA	L	
DISTRICTID	200109LX	

Groundwater Database Disclaimer

The Groundwater Database (GWDB) of the Texas Water Development Board (TWDB) contains information about more than 123,500 water well, spring, and oil/gas test sites in Texas including associated water level and water quality data. Because data collection methods and data maintenance have varied and evolved over the years, the information in the GWDB has a range of accuracy that the user needs to be aware of. See Explanation of Groundwater Data for information on the sources of information and level of accurracy in the document.

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TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Lower Glen Rose Field No. _____ State Well No. 68-21-104

Owner's Well No. _____ County Bexar

1. Location: ___ 1/4, ___ 1/4 Sec. _____, Block _____ Survey _____

2. Owner: Bavarian Hills Subdivision Address: _____

Tenant: Wilbern A. Swinney Address: _____

Driller: Haskin Pump & Service Inc Address: _____

3. Elevation of _____ is 1275 ft. above msl, determined by Topo

4. Drilled: 11-16 1976; Dug, Cable Tool, Rotary, _____

5. Depth: Rept. 524 ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed _____

7. Pump: Mfgr. _____ Type N

No. Stages _____, Bowls Diam. ___ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel N Make & Model _____ HP. _____

9. Yield: Flow ___ gpm, Pump _____ gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: 250 ft. rept. meas. 11-16 1976 above below DL which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

12. Use: Dom., Stock, ~~Public Supply~~, Ind., Irr., Waterflooding, Observation, Not Used, _____

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, _____

15. Record by: G. MArquardt Date 10-27 1977

Source of Data Dist Chip Swinney

16. Remarks: _____

CASING & BLANK PIPE

Cemented From 0 ft. to 102 ft.

Diam. (in.)	Type	Setting, ft. from	to
6	Plastic	0	102

WELL SCREEN

Screen Openings _____

Diam. (in.)	Type	Setting, ft. from	to
8"	Open	102	524

well is in 4-quad. on highway base

Topo

68-21-104

(Sketch) 21-405

TWDBE-WD-2

From (ft.)	To (ft.)	Description and color of formation material
0	35	Hard White Lime (Edwards)
35	50	Gray Lime (Glen Rose)
50	70	Hard Light Gray Lime
70	95	Hard Yellow Lime
95	103	Hard White Lime
103	130	Hard Yellow Lime
130	250	Hard Gray Lime
250	340	Yellow Lime (Water)
340	520	Light Gray Lime
520	524	Black Dolomite

9) Casing:
Type: Old **New** Steel **Plastic** Other

Cemented from 0 ft. to 102'

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
6"	0	102'	

(owner was urged to let us put in at least 200' but he would not let us —)

10) SCREEN:
Type

Perforated Slotted

NO Screen

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY
Organization No. _____ Lab No. _____
Work No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:
Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

Analysis copied from Texas Department of Health Files

County 015 BEXAR
State Well No. 68-[illegible]-104
_____ Well No. _____
Date Collected 07-12-84

Owner BAVARIAN HILLS ___ Send copy to owner Sample No. _____ By _____
Address _____ Well Location _____
Date Drilled _____ Depth 525 ft. WBF _____ Source (type of well) _____
Producing intervals _____ Water level _____ ft. Sample depth _____ ft.
Sampled after pumping _____ hrs. Yield _____ GPM meas. est. Temperature _____ °F _____ °C
Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use _____ Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

Laboratory No. KEY PUNCHED
Date Received 7-13-84
Date Reported 10-2-84

		MG/L	ME/L
Silica	00955		
Calcium	00910	64	
Magnesium	00920	44	
Sodium	00929	13	
	Total		
☐ Potassium	00937		
[1] ☐ Manganese	01055	<0.02	%Na
☐ Boron	01022		SAR
[1] ☐ Total Iron	01045	<0.02	RSC
☐ (other) _____		MG/L	

		MG/L	ME/L
Carbonate 170	00445	7	
Bicarbonate	00440	346	
Sulfate	00945	64	
Chloride	00940	12	
Fluoride	00951	1.4	
Nitrate	71850	0.44	
pH	00403	8.5	
		Total	
[1] Dissolved Solids (residue at 180°C)	70300		381
Phenolphthalein Alkalinity as C aCO_3	00415		6
Total Alkalinity as C aCO_3	00410		296
Total Hardness as C aCO_3	00900		342
[2] Nitrogen Cycle			
Ammonia - N	00610		
Nitrite - N	00615		
Nitrate - N	00620		
Organic Nitrogen	00605		

Specific Conductance (micromhos/cm3) 00095 _____
Diluted Conductance (micromhos/cm3): _____ X _____ = 770

" ☐ " items will be analyzed if checked.

[1] The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.
[2] Nitrogen cycle requires separate sample.
[1] Total Iron and Manganese require separate sample.

Analyst _____ Checked By _____

TWDB 0148 (Rev.04 07 86)

d original copy by
tified mail to the
as Water Development Board
O. Box 13087
tin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 68-21-1c
Located on map yes
Received: 11
dk

OWNER:
Person having well drilled Wm. Sweeney (Name) Address 17637 Blanco Road (Street or RFD) (City) (State)

Landowner Same (Name) Address San Antonio, Texas 78216 (Street or RFD) (City) (State)

LOCATION OF WELL:
County Bexar, 23 miles in North (N.E., S.W., etc.) direction from San Antonio (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

North

(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.

Labor _____ League _____

Block _____ Survey _____

Abstract No. _____

(NW¼ NE¼ SW¼ SE¼) of Section _____

TYPE OF WORK (Check):
New Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check):
Rotary | Driven | Dug | Cable | Jetted | Bored

WELL LOG:
Diameter of hole 8" in. Depth drilled 524 ft. Depth of completed well 524 ft. Date drilled 11-16-76

All measurements made from _____ ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	35	Hard White Lime (Edwards)
35	50	Gray Lime (Allen Run)
50	70	Hard Light Gray Lime
70	95	Hard Yellow Lime
95	103	Hard White Lime
103	130	Hard Yellow Lime
130	250	Hard Gray Lime
250	340	Yellow Lime (Water)
340	520	Light Gray Lime
520	524	Black Dolomite

(Use reverse side if necessary)

9) Casing:
Type: Old | New | Steel | Plastic | Other
Cemented from 0 ft. to 102' ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
6"	0	102'	

(owner was urged to let casing be put in at least 200' but he would not let us — no screen)

10) SCREEN:
Type _____
Perforated | Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size

COMPLETION (Check):
Straight wall | Gravel packed | Other | Under reamed | Open Hole

WATER LEVEL:
Static level 250 ft. below land surface Date _____
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., _____ ft.
below land surface. "not known — waited for owner to decide on pump —

11) WELL TESTS:
Was a pump test made? Yes | No If yes, by whom?
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes | No
Did any strata contain undesirable water? Yes | No
Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Glen Hoskin (Type or Print) Water Well Drillers Registration No. 935

ADDRESS 15403 Capital Port - San Antonio, Tex 78249 (Street or RFD) (City) (State)

Signed Glen H. Hoskin (Water Well Driller) Hoskin Pump Service Inc (Company Name)

AY 68-21-104

Please attach electric log, chemical analysis, and other pertinent information, if available.

Additional instructions on reverse side.

WR-WDB

TWDB Groundwater Database Query Result

REPORTED WATER WELL DATA ON STATE WELL NUMBER = 6821110

Query for another State Well Number: [ ] Submit

| Water Quality | Infrequent Constituent | Water Level | 5 Day Water Level | Well Casing | Remarks | Scanned Images |

*For a complete explanation, click here to read the TWDB Groundwater Data System Data Dictionary.

Field	Value	*Explanation
STATE WELL NUMBER	6821110	
COUNTY CODE	29	Bexar County, Texas
BASIN	19	San Antonio River Basin
PREVIOUS WELL NUMBER		
LATITUDE	294233	DMS (in decimal degrees: 29.709167)
LAT DEC	29.709166	
LONGITUDE	982935	DMS (in decimal degrees: -98.493056)
LONG DEC	-98.493055	
OWNER 1	Bavarian Hills	
OWNER 2	Well #1	
DRILLER 1		
DRILLER 2		
SOURCE OF COORDINATES	0	
AQUIFER CODE	218GLRS	Glen Rose Limestone
AQUIFER ID1	28	Trinity Aquifer
AQUIFER ID2		
AQUIFER ID3		
ELEVATION	1265	feet
ELEVATION MEASUREMENT METHOD	M	Interpolated From Topo Map
ALPHA CODE	58260	BAVARIAN HILLS SUBDIV. WATER SERVICE II
DATE DRILLED	09231978	
WELL TYPE	W	Withdrawal of Water

WELL DEPTH	535	feet
SOURCE OF DEPTH	A	Another Government Agency
TYPE OF LIFT		
TYPE OF POWER		
HORSEPOWER		
PRIMARY WATER USE	P	Public Supply
SECONDARY WATER USE		
TERTIARY WATER USE		
WATER LEVEL AVAILABLE	N	
WATER QUALITY AVAILABLE	N	
WELL LOGS AVAILABLE		
OTHER DATA AVAILABLE		
DATE COLLECTED OR UPDATED	09042009	
REPORTING AGENCY	03	TWC/TNRCC/TCEQ
WELL SCHEDULE IN FILE		
CONTRUCTION METHOD		
COMPLETION		
CASING MATERIAL		
SCREEN MATERIAL		
GMA	9	
RWPA	L	
DISTRICTID	200109LX	

Groundwater Database Disclaimer

The Groundwater Database (GWDB) of the Texas Water Development Board (TWDB) contains information about more than 123,500 water well, spring, and oil/gas test sites in Texas including associated water level and water quality data. Because data collection methods and data maintenance have varied and evolved over the years, the information in the GWDB has a range of accuracy that the user needs to be aware of. See Explanation of Groundwater Data for information on the sources of information and level of accurracy in the document.

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