

**RESPONSE 50**

**TEMPLE RECYCLING AND DISPOSAL FACILITY  
BELL COUNTY, TEXAS**

**PERMIT AMENDMENT APPLICATION  
PERMIT NO. MSW-692A**

**CITY OF TEMPLE AND WASTE MANAGEMENT**



**VOLUME I OF III**

**PERMITTED – APRIL 7, 2000**



**SCS ENGINEERS**

**TEMPLE RECYCLING AND DISPOSAL FACILITY  
PERMIT AMENDMENT APPLICATION MSW-692A  
BELL COUNTY, TEXAS**

**GEOLOGY REPORT**

**PART III, ATTACHMENT 4**

**Prepared for:**

City of Temple  
2 North Main Street  
Temple, Texas 76501

and

Waste Management  
706 Landfill Road  
Temple, Texas 76501

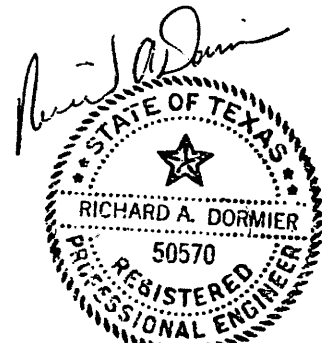
**Prepared by:**

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**Revised by:**

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(214) 267-1800

January 1999  
Revision 1 – April 1999  
Revision 2 – August 1999



8-23-99





**TETRA TECH**

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JAN 28 2011

**WASTE PERMITS DIVISION  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY**

January 28, 2010

Richard Carmichael, Ph.D., P.E., CIH, Manager  
MC-124  
Texas Commission on Environmental Quality  
MSW Permits Section, Waste Permits Division  
P.O. Box 13087  
Austin, Texas 78711-3087

Subject: Municipal Solid Waste (MSW) – Bell County, Texas  
Temple Recycling and Disposal Facility – MSW Permit No. 692A  
Installation Report of Groundwater Monitoring Wells  
RN100219401/CN6001127856

Dear Dr. Carmichael:

On behalf of Waste Management of Texas, Inc. (WMTX), Tetra Tech, Inc. is pleased to provide documentation of installation activities for eight (8) groundwater monitoring wells at the Temple Community Recycling and Disposal Facility ("the Site"). Pursuant to the requirements of the MSW Permit No. 692A Groundwater Characterization Report, groundwater monitoring wells MW-15 through MW-22 were installed. In addition to these installations, the Groundwater Characterization Report also authorized the plugging and abandonment of three groundwater monitoring wells (MW-02, MW-11 and MW-14).

#### **GROUNDWATER MONITORING WELL ACTIVITIES**

The groundwater monitoring wells were installed by the drilling company, Vortex Drilling, Inc., of San Antonio, Texas in December 2010. Monitoring wells were drilled and installed by qualified Texas-licensed drillers using drilling equipment and methods appropriate for the Site conditions. Monitoring wells were constructed in accordance with the Typical Monitoring Well Diagram indicated on Figure 5-18, which is general accordance with requirements within 30 TAC § 330.421. The field activities were overseen and directed by Mr. Christian M. Llull, P.G., a Tetra Tech geologist and groundwater scientist; and the fieldwork was coordinated, logged and documented by Mr. Christian M. Llull.

The 8 newly installed monitoring wells (MW-15 through MW-22) were added to the monitoring system as shown on Figure 1, located in Appendix B. Boring logs and well construction diagrams for each groundwater monitoring well installed are presented in Appendix A. Existing wells MW-02, MW-11 and MW-14 were plugged and abandoned, per Part III, Attachment 5, Groundwater Characterization Report, and in accordance with

Tetra Tech

7800 Shoal Creek Blvd., Suite 253 East, Austin, TX 78757

16 TAC § 76.702 and § 76.1004. Existing piezometers JN-13, RST-119 and RST-120 were no longer active or a part of the groundwater monitoring system and were also plugged and abandoned in accordance with 16 TAC § 76.702 and § 76.1004. The TDLR State of Texas Well Reports and the TDLR State Of Texas Plugging Reports are also located in Appendix B.

Following installation, each well was gauged using an electronic water level indicator to obtain the depth to water (if any) and the total depth of the well. Monitoring wells were developed (if groundwater was present) to remove drilling artifacts and open the water-bearing zone for maximum flow until all water affected during drilling is removed and field measurements of pH, specific conductance, and temperature had stabilized. Development was accomplished through pumping and/or bailing. After installation, the surveying firm, Surveying and Mapping, Inc. (SAM, Inc.) of Austin, Texas, surveyed the location and elevations of the completed groundwater monitoring wells (completed December 16, 2010), and these surveyed locations are shown on the aforementioned Figure 1, located in Appendix B. As noted, Appendix A presents boring logs and the construction details of these groundwater monitoring wells; and Appendix B presents the TCEQ-10308 Monitor Well Data sheets, TDLR State of Texas Well Reports and the TDLR State of Texas Plugging Reports.

The following items are attached to this installation report.

- Boring logs for each replacement groundwater monitoring well installed are presented in Appendix A to this letter. These logs present the geologic observations, geotechnical data and well construction details made during monitoring well installation.
- TCEQ-10308 Monitor Well Data sheets for each monitoring well are presented in Appendix B to this letter report. These logs present the relevant installation information (e.g. coordinates, elevations, depths, materials used, screened intervals, etc.) Also included in Appendix B are the TDLR State of Texas Well Reports and the TDLR State of Texas Plugging Reports.
- Figure 1, presented in Appendix B, presents a map showing the as-installed locations of the new groundwater monitoring wells covered by this installation report.

#### **ADDITIONS TO SITE DEVELOPMENT PLAN**

The monitoring well boring logs, TDLR installation reports and monitoring well construction data sheets provided in the enclosures of this letter should be added to Part III, Attachment 5, Appendix A, of the permitted Site Development Plan.

#### **CONCLUSION**

The newly installed groundwater monitoring wells are now considered part of the groundwater monitoring system, and will be sampled as background wells for eight consecutive quarters prior to inclusion in the detection monitoring program. A minimum of eight (8) statistically independent samples will be collected from each new monitoring

Dr. Richard Carmichael  
January 28, 2010  
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well (the number of samples may vary depending on the statistical method used) as specified in the approved Groundwater Sampling and Analysis Plan (GWSAP).

This original letter report and two copies are being submitted to the TCEQ MSW Permits Section in Austin, with a third copy submitted directly to the TCEQ Region 9 Office as indicated on the distribution list below. If you have any questions about this report, please do not hesitate to contact Robert Alford or Christian Llull at (512) 338-1667, or Mr. Tim Champagne, P.E. of WMTX at (512) 272-6261.

Very truly yours,  
Tetra Tech, Inc.



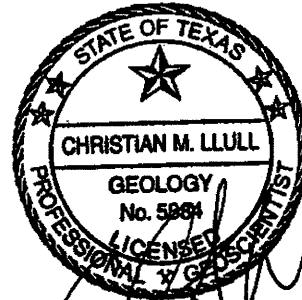
Robert M. Alford  
Project Manager



Christian M. Llull, P.G.  
Senior Staff Geologist

ra  
Enclosures

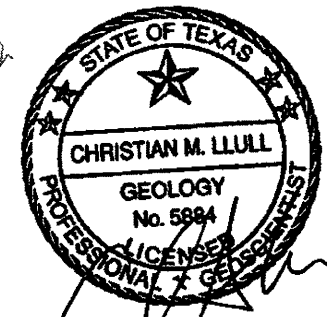
cc w/enclosure: Glinda Baker, TCEQ Region 9 – Waco  
Lisa Sebek, Solid Waste Director, Temple  
Cheryl Maxwell, CUWCD  
Tim Champagne, WMTX



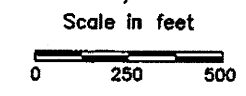
1-28-2010



- EXPLANATION**
- Approximate Property Boundary (Permit Boundary)
  - .-.- Approximate Landfill Footprint
  - MW-10 ● Existing Monitoring Well Location
  - MW-17 ◐ Newly Installed Monitoring Well Location
  - Point of Compliance



1-28-2011



WMTX TEMPLE RDF Bell County, TX		
Figure 1 <b>GROUNDWATER MONITORING WELL INSTALLATION LOCATION MAP</b>		
PROJECT: 024447	BY: CML	REVISIONS
DATE: JAN 2011	CHECKED: RMA	
<b>TETRA TECH</b> COMPLEX WORLD, CLEAR SOLUTIONS		

Source:  
Base map taken from Waste Management, Inc., drawing Temple-1453-DATA-07.



**TEMPLE RECYCLING & DISPOSAL FACILITY  
TCEQ PERMIT NO. MSW 692B  
MONITORING WELL AND PIEZOMETER LOCATIONS**

<b>NORTHING</b>	<b>EASTING</b>	<b>ELEVATION</b>	<b>DESCRIPTION</b>
521791.4560	2950687.4290	555.6600	PZ GA14 CONCRETE
522436.9720	2949849.4810	562.2500	PZ GA26 CONCRETE
522814.4360	2951366.2100	574.8100	PZ GA25 CONCRETE
523900.6760	2950848.6320	601.7500	PZ GA24 CONCRETE
524541.7070	2951930.4730	569.7700	PZ GA23 CONCRETE
525519.4280	2950919.7820	571.0000	PZ GA22 CONCRETE
526529.0770	2947762.8350	598.2900	PZ GA4 CONCRETE
526653.9250	2949382.6810	562.2700	PVC TOP GMP-5
523211.8640	2946809.9020	574.2100	MW-4 CONCRETE
523556.7850	2946338.7520	578.6500	MW-3 CONCRETE
522769.6430	2948413.8020	563.4100	MW-15R CONCRETE
526093.0360	2946700.5070	633.2800	GMP-1 CONCRETE
525971.5140	2947222.3280	619.3000	PVC TOP MW-21
525977.0210	2947205.3900	617.2400	GMP-2 CONCRETE
525713.7450	2948109.7100	609.6000	GMP-3 CONCRETE
525817.6070	2947761.7500	623.5200	MW-20 CONCRETE
523041.3110	2947195.0630	576.4400	PVC TOP MW-19
522886.3880	2947423.0750	571.1500	MW-5R CONCRETE
522759.4070	2948615.7880	563.9500	GMP-10 CONCRETE
523078.9990	2948483.8180	570.8400	PVC TOP MW-15
522944.2800	2948020.7120	569.0100	MW-06 CONCRETE
522956.0140	2948029.5480	568.7400	GMP-11 CONCRETE
524039.6330	2946034.0580	594.7900	PVC TOP MW-22
525541.1450	2946457.3800	633.9600	PVC TOP MW-1
523438.1540	2948815.3910	572.9600	MW-07 CONCRETE
523592.9410	2948872.9340	576.1400	GMP-9 CONCRETE
524003.5760	2949001.0820	591.4000	PVC TOP MW-16
524148.2210	2949348.5110	589.8800	MW-08 CONCRETE
524153.8060	2949364.7420	589.9300	GMP-8 CONCRETE
526637.4160	2948399.3610	586.1400	GMP-4 CONCRETE
524724.0250	2949558.7270	586.2400	MW-09 CONCRETE
525048.3750	2949652.5420	583.0000	GMP-7 CONCRETE
525310.1150	2949734.3810	578.1600	MW-10 CONCRETE
525919.5830	2949918.1370	568.0300	GMP-6 CONCRETE
525901.6020	2949883.7010	574.3800	PVC TOP MW-17
526374.8320	2949579.7070	573.9300	PVC TOP MW-18
526658.8510	2949345.1670	562.3800	MW-12 CONCRETE
526675.2450	2948738.2240	571.6900	MW-13 CONCRETE

**NOTE:** COORDINATES AND ELEVATIONS ARE BASED ON THE SITE SURVEY CONTROL SYSTEM

