NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TCEQ PERMIT APPLICATION NO. MSW 576C

PERMIT AMENDMENT APPLICATION

PART III:

Attachment G – Landfill Gas Management Plan
Attachment H – Closure Plan
Attachment I – Postclosure Plan
Attachment J – Cost Estimate for Closure and Postclosure Care
PART IV – SITE OPERATING PLAN

Volume 5

Prepared for



July 2013

Prepared by



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NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TCEQ PERMIT APPLICATION NO. MSW 576C

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VOLUME 5 OF 5

Prepared for

Waste Management of Texas, Inc.

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TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION NO. F-256 TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS FIRM REGISTRATION NO. 50222

NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TCEQ PERMIT APPLICATION NO. MSW 576C

PERMIT AMENDMENT APPLICATION

VOLUME 5 OF 5

CONTENTS

PART III FACILITY INVESTIGATION AND DESIGN

Attachment G - Landfill Gas Management Plan

Attachment H - Closure Plan Attachment I - Postclosure Plan

Attachment J - Cost Estimate for Closure and Postclosure Care

PART IV SITE OPERATING PLAN



NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TCEQ PERMIT NO. MSW 576C

PERMIT AMENDMENT APPLICATION

PART III – FACILITY INVESTIGATION AND DESIGN ATTACHMENT G LANDFILL GAS MANAGEMENT PLAN

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CONTENTS

1	INTRO	DDUCTION	G-1
	1.1	Scope	
	1.2	Purpose	
	1.3	General	
2	SITE	CHARACTERISTICS	G-3
	2.1	Introduction	
	2.2	Geologic Conditions	
	2.3	Hydrogeologic Conditions	G-3
	2.4	Hydraulic Conditions	
	2.5	Facility Structures within the Property Boundary	G-3
	2.6	Underground Utilities	G-4
	2.7	Offsite Structures	G-4
•	MONII	TORING	
3		TORING	
	3.1	Perimeter Monitoring	
		3.1.1 Perimeter Monitoring Network	
		3.1.2 Landfill Gas Monitoring Probes	
		3.1.3 Utility Vents	
		3.1.4 Monitoring Procedures	
		3.1.5 Maintenance Procedures	
	3.2	Facility Structures Monitoring	
		3.2.1 Monitoring Procedures	
		3.2.2 Maintenance Procedures	
	3.3	Recordkeeping/Reporting	
	3.4	Backup Plan for Monitoring Probes, Vents and Continuous Monitors.	
	3.5	Monitoring Frequency	G-9
4	ACTIC	ON PLAN	C 10
~	4.1	Initial Response Measures	
	4.1	4.1.1 Emergency Action	
	4.2	Notification Procedures	
	7.2	Notification (1700cddies	0-11
5	REME	DIATION PLAN	G-12
6	LFG S	SYSTEM	G-13
	6.1	Existing LFG Collection and Control System	
	6.2	Future GCCS Expansions	

CONTENTS (Continued)

APPENDIX G1

Landfill Gas Monitoring Probe Locations and Details

Drawing G1.1 - Gas Monitoring Probe Location Plan

Drawing G1.2 - Monitoring Probe Detail

Drawing G1.3 – Structures Within 1/4 Mile of Permit Boundary

APPENDIX G2

Reporting and Recording Forms

APPENDIX G3

Installation Information and TCEQ Permit Modification Approvals – Existing Landfill Gas Monitoring Probes

APPENDIX G4

Landfill Gas Collection and Control System Plan

APPENDIX G5

Landfill Gas Generation Model



30 TAC §§330.63(g), 330.371

1.1 Scope

This landfill gas (LFG) management plan has been developed for the New Boston Landfill as required by 30 TAC §330.63(g). This LFG management plan is consistent with the requirements set forth in §330.371. The LFG management plan provides a site-specific approach to implementing LFG monitoring. This plan describes the existing (576B) and proposed (576C) LFG monitoring network and discusses the operation and monitoring of this network, the verification of monitoring results, notification procedures, and outlines possible remediation activities, if required.

The New Boston Landfill will comply with all applicable federal and state regulations. These include the Environmental Protection Agency's (EPA) – Clean Air Act, Section 111(b), New Source Performance Standards (NSPS) for municipal solid waste (MSW) landfills, and the applicable requirements of the TCEQ Office of Air Quality, including the standard permit requirements and 30 TAC Chapter 330, Subchapter U.

The NSPS for MSW landfills applies to landfills with design capacities greater than 2.5 million megagrams (2.75 million tons) and 2.5 million cubic meters. Since the design capacity of the New Boston Landfill will exceed 2.5 million megagrams and 2.5 million cubic meters (see Part III, Site Development Plan, Appendix IIIA – Site Life Calculations), the non-methane organic compound (NMOC) emissions at the site may eventually exceed 50 megagrams per year, requiring installation of a LFG collection and control system per the NSPS. Consistent with the NSPS, the New Boston Landfill will make the necessary submittals to the TCEQ, which administers the NSPS. If required per the NSPS, the LFG collection and control system will be operated and monitored per the NSPS requirements.

The site currently operates and monitors a voluntary active LFG collection and control system for completed waste disposal areas. Refer to Section 6 of this attachment for discussion on the active LFG collection and control system.

1.2 Purpose

Compliance with §330.371 requires landfills to implement a routine LFG monitoring program to verify that (1) the concentration of methane does not exceed 1.25 percent methane by volume in facility structures (excluding LFG collection and control system components), and that (2) the concentration of methane does not exceed 5 percent methane by volume in monitoring points, probes, subsurface soils, or other matrices at the facility permit boundary.

The purpose of this LFG management plan is to provide guidance for management of LFG at the site. These guidelines cover the evaluation of LFG migration at the points of compliance (permit boundary) and in structures on the permitted site. This will be verified by monitoring LFG concentrations at or within the facility permit boundary and within on-site buildings. Various options for LFG migration mitigation are discussed in Section 5 of this attachment.

1.3 General

Consistent with §330.371(d), the executive director may establish alternative schedules for demonstrating compliance with methane monitoring as required by §330.371(b), and with action plan activities as required by §330.371(c).

Consistent with §330.371(e), the landfill gas monitoring and control program will continue for a period of 30 years after certification of final closure of the facility, or until Waste Management of Texas, Inc. (WMTX) receives written authorization to reduce the program. Authorization to reduce gas monitoring and control shall be based on a demonstration by the owner or operator that there is no potential for gas migration beyond the permit boundary or into on-site structures. The demonstration will be supported by data collected and additional studies, as required.

Consistent with §330.371(f), gas monitoring and control systems will be revised as needed to maintain current and effective gas monitoring and control systems. Postclosure land use of the facility will not interfere with the function of gas monitoring and control systems.

2.1 Introduction

Eleven permanent LFG monitoring probes and four gas vents have been installed along the perimeter of the active waste fill area to detect potential LFG migration under the active 576B configuration. The proposed LFG monitoring network consists of a total of 24 probes. The installed and proposed LFG monitoring probes serve as the point of compliance regarding LFG migration. The existing and proposed LFG monitoring probe and gas vent locations are shown on Drawing G1.1 in Appendix G1.

2.2 Geologic Conditions

The site geologic conditions present at the New Boston Landfill are discussed in Attachment E, Section 4.4.

2.3 Hydrogeologic Conditions

The hydrogeologic conditions present at the New Boston Landfill are discussed in detail in Attachment E, Section 5.6.

2.4 Hydraulic Conditions

Hydraulic conditions at the New Boston Landfill are discussed in Attachment C1 – Permit Boundary Drainage Analysis and Design.

2.5 Facility Structures within the Property Boundary

The New Boston Landfill has a proposed permit boundary encompassing approximately 332 acres, of which approximately 132 acres will be available for waste placement. There are several existing structures within the New Boston Landfill permit boundary. These structures include a gatehouse, storage facility, three existing structures, and maintenance and office facility. The gatehouse, storage building, and maintenance and office facility are enclosed and have continuous methane monitors. The three existing structures, if left intact, may have continuous methane monitors installed. All enclosed structures will be monitored for the presence of LFG as described in Section 3.2.1 of this attachment. Refer to Appendix G1, Drawing G1.1 and G1.3 for location of structures.

2.6 Underground Utilities

As shown on Drawing G1.1 in Appendix G1, a 15-foot gas line easement is located along the south, east and west permit boundary of the existing West Disposal Area and running through the center of the expansion bisecting the North and South Disposal Areas of the site. The pipeline was installed directly in the in situ clays with no transmissive bedding or transmissive backfill materials. This clay backfill was utilized to preclude the utility easement from becoming a gas migration pathway.

There are no utility lines or easements within the disposal footprint of the landfill. Refer to Drawing G1.1 for locations of the existing and proposed passive vents where the utility trenches cross the permit boundary.

2.7 Offsite Structures

All New Boston Landfill facility structures are located within the permit boundary. All known habitable structures located off site within 1/4 mile (1,320 feet) of the permit boundary are depicted on Drawing G1.3.

3.1 Perimeter Monitoring

3.1.1 Perimeter Monitoring Network

The LFG monitoring probe network for the existing landfill includes a total of eleven existing LFG monitoring probes and four existing gas vents located along the perimeter of the active waste fill area. The proposed LFG monitoring probe network includes a total of 24 LFG monitoring probes. Locations of the existing and proposed LFG monitoring probes and gas vents are shown in Appendix G1, on Drawing G1.1. The existing LFG monitoring probes will remain as the monitoring probe locations for the existing West Disposal Area. Two probes, GMP-4 and GMP-5, and one gas vent, GV-4, will be relocated. Copies of the available installation logs for the existing permanent LFG monitoring probes are included in Appendix G3.

Proposed gas probes GMP-4R, GMP-5R, GMP-12 through GMP-24, and gas vent GV-4A will be added along the permit boundary. Refer to Appendix G1, Drawing G1.1 for the proposed LFG monitoring probe and gas vent network. The proposed LFG monitoring probes will be installed in phases as the waste footprint develops. The following table shows the probe installation schedule.

Gas Probe Installation Schedule					
Prior to Accepting Waste in Sector	Gas Probes To Be Installed				
1A	GMP-4R, 5R, 12, 13, 21, 22, 23, and 24				
3A	GMP-19 and 20				
4A	GMP-17 and 18				
5A	GMP-15 and 16				
South Disposal Area	GMP-17, 18, 19, 20, 21, 22, 23, and 24				

It should be noted that gas probes GMP-17 through GMP-24 are listed twice in the table above. This is because these probes will be installed at the earlier of waste acceptance in the South Disposal Area or their triggering sector in the North Disposal Area.

3.1.2 Landfill Gas Monitoring Probes

LFG monitoring probes have been installed along the perimeter of the waste fill area. Boring logs and typical construction details for the LFG probes were submitted to the TCEQ as part of the Gas Monitoring Probe Installation Report. Copies of the available installation logs for the existing permanent LFG monitoring probes are included in

Appendix G3. Proposed LFG monitoring probes will be installed in accordance with the detail shown on Appendix G1, Drawing G1.2.

As shown on Drawing G1.2 and installation logs included in Appendix G3, the existing and proposed gas monitoring probes are designed to consist of solid piping within a concrete pad, bentonite seal, and filter sand packs for a depth of approximately 5 to 10 feet below ground surface. Below this depth, the gas monitoring probes are designed to consist of screened piping within gravel or sand packs through the remaining depth of the probes to intercept migrating gas.

Each proposed gas monitoring probe is designed to monitor the soil strata above the lowest planned future elevation of waste. The interprobe spacing for the proposed gas monitoring probes will be less than 1,000 feet, with closer spacing in areas with nearby offsite structures.

3.1.3 Utility Vents

Utility vent GV-4 will be relocated to the new permit boundary within the Atmos Energy easement within 120 days from the issuance of the permit for this expansion. Refer to Appendix G1, Drawing G1.1 for proposed utility vent locations and Drawing G1.2A for details of the utility vents.

3.1.4 Monitoring Procedures

Monitoring will be conducted by a qualified landfill representative or a qualified consultant. To avoid artificially impacting the probe static pressure during the induction of the gas sample into the instrument, the static pressure will be measured and recorded prior to measuring gas composition. Static gas pressure will be measured and recorded in inches of water column. The calibration and operation of the monitoring equipment will be as recommended by the instrument manufacturer.

During each monitoring event, the probes will be monitored for the following parameters:

- Static pressure, as measured in inches of water column, gauge
- Methane concentration, as measured in percent by volume
- Oxygen concentration (optional), as measured in percent by volume
- Depth to groundwater, as measured in feet

During each monitoring event, the gas vents will be monitored for methane concentration, as measured in percent by volume.

Monitoring for gas composition and gas pressure will be performed using a portable Landtec[®] GEM-2000, or equivalent instrument, capable of measuring the required parameters. The monitoring equipment will be calibrated and maintained in accordance with the manufacturer's recommended procedures. Manufacturer's maintenance and

calibration requirements for the monitoring instruments will be maintained on site with the LFG monitoring records described in Section 3.3.

After these parameters are measured, the probe of a liquid level indicator will be lowered into the LFG probe through an opening located on the top of the LFG probe to measure water level (if any) inside the LFG probe. If no water is present, the level indicator will be used to verify and report total depth of probe to assure that a probe is not obstructed.

3.1.5 Maintenance Procedures

Each time LFG monitoring is conducted, the sampler will inspect the integrity of the LFG monitoring probes or vents. The sampler will record pertinent information on the Quarterly Landfill Gas Monitoring Report (see Appendix G2) or similar forms. The Quarterly Landfill Gas Monitoring Report will be kept in the site operating record. The sampler will perform the following at each monitoring event:

- Verify that the LFG monitoring probe or vent is clearly labeled on the outer casing or lid.
- Verify that the protective casing is intact and is not bent or excessively corroded.
- Verify that the concrete pad is intact (no evidence of cracking or heaving).
- Verify that the padlock is functional.
- Verify that the inner casing is intact.

If damage to the LFG monitoring probe or vent is observed, it will be reported to the landfill manager. If it is not possible to repair the LFG monitoring probe or vent and the damage can potentially affect the accuracy of future monitoring results, the LFG monitoring probe or vent will be decommissioned and replaced with a new LFG monitoring probe in accordance with Sections 3.1.2, and 3.4 of this attachment.

3.2 Facility Structures Monitoring

3.2.1 Monitoring Procedures

On-site buildings and structures designed for human occupation will be monitored, at a minimum, quarterly with either a portable combustible gas indicator or a continuous LFG monitor/alarm that will provide an audible alarm if methane concentrations exceed 1.25 percent methane by volume.

If allowable methane concentration limits are exceeded within structures, the building will be immediately evacuated and ventilated by opening doors and windows. Notification consistent with procedures in Section 4.2 of this attachment will be implemented immediately.

3.2.2 Maintenance Procedures

If continuous LFG monitors/alarms are used, they will be calibrated and maintained in accordance with the manufacturer's recommendations. Continuous LFG monitors/alarms will be tested following the manufacturer's testing specifications.

3.3 Recordkeeping/Reporting

Field monitoring data records will be maintained for the methane monitoring and kept in the site operating record. Field data will be recorded on the Quarterly Landfill Gas Monitoring Report form (or similar form) shown in Appendix G2.

Quarterly monitoring results will be placed in the site operating record. LFG monitoring points, probes, subsurface soils, or other matrices will be monitored quarterly. The LFG monitoring program will continue for a period of 30 years after the final closure of the facility or until the owner or operator receives written authorization from the TCEQ to revise or discontinue the program. Gas monitoring records will be maintained in the site operating record.

3.4 Backup Plan for Monitoring Probes, Vents and Continuous Monitors

The following is a back-up plan to be used if any installed LFG monitoring probes or continuous monitoring devices become unusable or inoperative.

Stationary Perimeter Probes/Vents

- 1. Damaged or inoperative perimeter probes or vents will be repaired within 30 days of the date of damage or replaced within 60 days from the TCEQ approval date of the permit modification requesting replacement.
- 2. Upon completion of the replacement probe or vents, an installation report including boring logs and construction details will be submitted to the TCEQ.
- 3. Should a monitoring event occur prior to replacement of a damaged probe or vent, a barhole will be placed next to the damaged probe or vent and a portable gas monitor used until the probe or vent is replaced.

Stationary Combustible Gas Monitor

- 1. Damaged or inoperative stationary combustible gas monitors will be repaired within 30 days of the date of damage.
- 2. A portable gas indicator will be used until the damaged or inoperative stationary unit is replaced.

3.5 Monitoring Frequency

LFG monitoring points, probes, subsurface soils, or other matrices and facility structures are monitored quarterly, at a minimum. The facility will monitor more frequently those locations where monitoring results indicate that LFG migration is occurring or is accumulating in structures.

30 TAC §330.371

4.1 Initial Response Measures

As required under 30 TAC §330.371, this action plan has been prepared for the protection of human health in the event concentrations of methane exceed allowable limits either within on-site buildings or at the permit boundary of the site. The appropriate emergency response is different for each situation; therefore, this plan addresses buildings and permit boundaries separately.

This plan also recognizes that a single event exceedance of allowable limits on a gas indicator or alarm does not necessarily mean that the concentration of methane has actually exceeded allowable levels.

4.1.1 Emergency Action

The initial action in the event methane is detected at levels above regulatory limits is to protect human health. The specific response depends on the circumstances of the situation.

Buildings/Structures. If the monitoring device in a facility building/structure is triggered, or if gas monitoring equipment indicates that the methane concentration has exceeded the regulatory limit, the building/structure is to be evacuated of all personnel immediately and the landfill manager will be notified. Personnel (except for authorized monitoring personnel) will not be allowed to re-enter the affected building/structure until additional measures are taken. Notification consistent with procedures in Section 4.2 of this attachment will be conducted immediately.

Permit Boundary. If methane levels above the regulatory limit are detected at the permit boundary in the LFG monitoring points, probes, subsurface soils, or other matrices, the landfill manager will be notified. The immediate emergency response measure will be for the landfill manager to determine if any nearby buildings or structures (including off-site) are at risk and if evacuation of the buildings or structures should be requested.

Once immediate actions have been completed to protect human health, notification consistent with procedures in Section 4.2 of this attachment will be conducted.

4.2 Notification Procedures

When methane concentrations above the regulatory limit have been detected in the monitoring points, probes, subsurface soils, or other matrices, or within any on-site structures, the monitoring personnel will notify the landfill manager, who in turn will immediately take steps to ensure the protection of human health. Notification will be made immediately in accordance with §330.371. Notification will be made to the executive director of the TCEQ; the TCEQ Region 5 Office; appropriate city, county, and local government officials and emergency officials; and any residents, tenants, and owners of property within ½ mile of the reading.

When methane levels above the regulatory limit have been detected (refer to Section 4.1.1 of this attachment), the landfill manager will place in the site operating record documentation of the methane gas levels detected and a description of the steps taken to ensure protection of human health within seven days of detection in accordance with §330.371. Written notification will also be sent to the TCEQ Region 5 Office within seven days outlining the steps taken.

5 REMEDIATION PLAN

30 TAC §330.371

If methane levels above regulatory limits are encountered in the buildings/structures or in one or more LFG monitoring points, probes, subsurface soils, or other matrices, remediation actions will be implemented within 60 days. The first remediation action will be an investigation of the cause of the methane levels. The investigation may include some or all of the following elements, depending on the circumstances:

- Bar-hole probe or hydropunch testing in the vicinity of the impacted monitoring probe
- Sampling and laboratory analysis of LFG monitoring probe samples to determine concentration of methane and trace compounds
- Additional LFG probe monitoring
- Installation of additional monitoring probes

Using accumulated data, an assessment will be made to determine an appropriate course of action to mitigate the migration of LFG. Such actions will vary with the specific incident. An incident-specific remediation plan, based on results of the investigation, will be submitted within 60 days of detection. Copies of the remediation plan will be placed in the operating record and provided to the executive director of the TCEQ along with notification that the plan has been implemented. The executive director may establish an alternative schedule for demonstrating compliance.

6.1 Existing LFG Collection and Control System

Currently, the site has an active LFG collection and control system (GCCS), as shown in Appendix G5-A on Drawing G5-A-1. The site has a design capacity greater than 2.5 million megagrams and 2.5 million cubic meters, but has a nonmethane organic compound (NMOC) emission rate of less than 50 megagrams per year. As a result, the existing GCCS is not required, but has been voluntarily installed.

The existing GCCS consists of vertical LFG extraction wells, a piping network, a condensate management system, and a blower/flare facility. The existing blowers provide vacuum to the extraction wells through the LFG collection piping network. The extracted LFG is routed from the collection points to the on-site flare, where the gas is combusted.

As additional waste is placed, the existing LFG extraction wells will be extended and/or redrilled.

6.2 Future GCCS Expansions

As the site develops, additional extraction wells will be installed as needed to reduce the buildup of internal gas pressures caused by the increased generation of LFG. The locations of the anticipated future vertical extraction wells are shown on Drawing G5-A-1. Future wells are not planned for the Type IV disposal area due to the lack of expected gas generation in this area.

The LFG extraction wells will be constructed as shown on Drawing G5-A-2. Each extraction well will consist of a perforated pipe within a gravel backfill. The LFG extraction wells will be installed in phases as needed as the landfill develops. The exact number and location of wells, piping, and future LFG facilities will be determined based on field conditions at the time of installation. Upon completion of each phase of GCCS expansion, record drawings suitable for inclusion in this permit will be submitted to TCEQ and a copy placed in the site operating record.

Using the EPA Landfill Gas Emissions Model, it is estimated that the site will generate a maximum of approximately 1,726 standard cubic feet per minute (scfm) of LFG in 2053 (Appendix G5-B). As such, additional blowers and piping network will be installed as needed to provide the vacuum and capacity to handle the predicted maximum flow rate of LFG. In addition, each extraction well will be equipped with a control valve and monitoring port, as shown on Drawing G5-A-2. These control valves and monitoring ports, used in conjunction with controls on the blower, will allow the site to regulate

vacuum and LFG levels at each individual extraction well. This will allow the site to make adjustments in order to effectively collect LFG.

The operation and maintenance of the proposed LFG system will be performed consistent with industry guidelines and practices. Wellhead and system monitoring will be performed on a routine basis to monitor overall system performance. As needed, system adjustments will be made to optimize the extraction of LFG from the landfill to control LFG migration, odors, and greenhouse gases. In addition, the system will be routinely visually inspected for any evidence of needed repairs or other maintenance. General maintenance procedures will include the following:

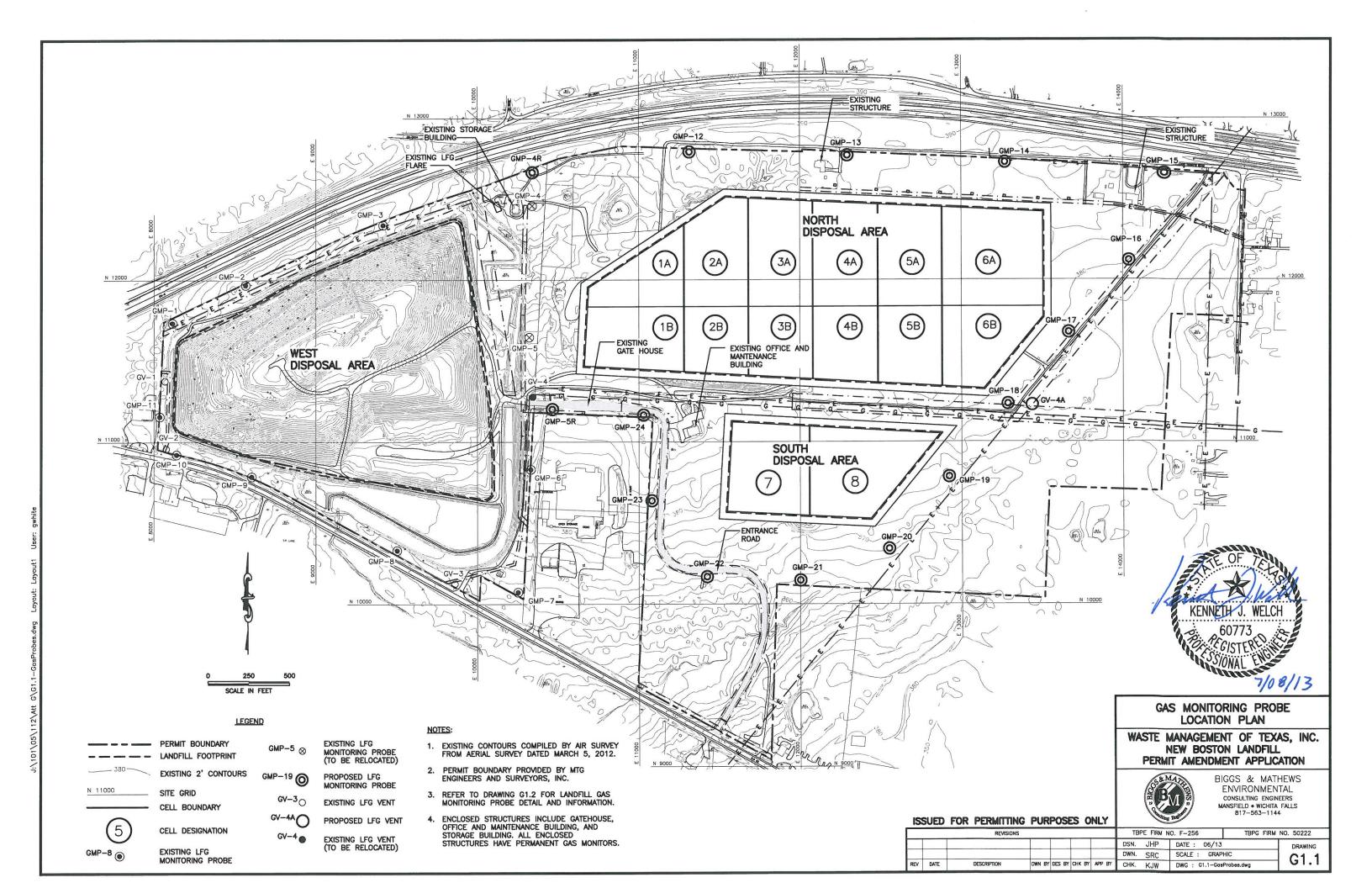
- Each wellhead will be monitored and adjusted as needed to control LFG while reducing oxygen intrusion into the landfill.
- Condensate sumps will be checked for proper operation.
- Blowers and flares will be inspected for proper operation.

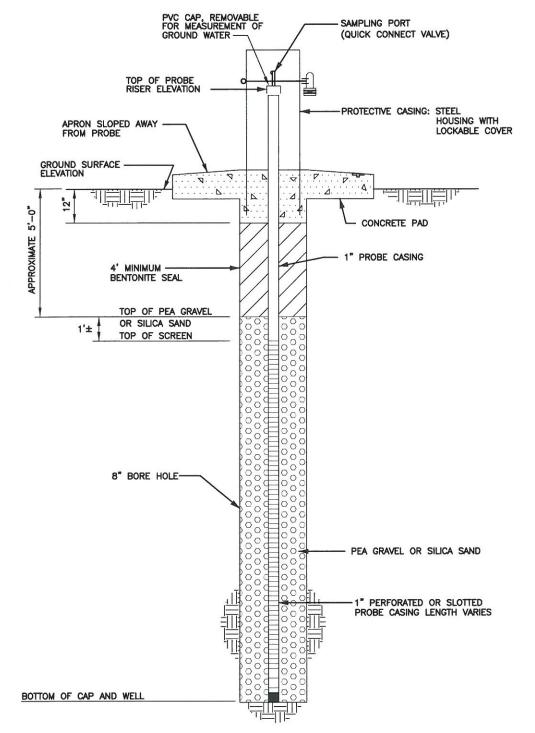
The system has been designed to include isolation valves and a looped piping network to allow the site to be adjusted, maintained, and quickly repaired.

NEW BOSTON LANDFILL

APPENDIX G1 LANDFILL GAS MONITORING PROBE LOCATIONS AND DETAILS

30 TAC §330.371





MONITORING	PROBE	DETAILS	MP-1
			G1.2

NOTES

- 1. ALL SIZES AND DIMENSIONS ARE APPROXIMATE.
- 2. REFER TO APPENDIX G3 FOR INSTALLATION LOGS OF EXISTING PROBES GMP-1 THROUGH GMP-11.

GAS MONITORING PROBE INFORMATION							
GAS PROBE	GROUND ELEVATION (FT-MSL)	PROBE DEPTH (FT-BGS)	BOTTOM OF PROBE ELEVATION (FT-MSL)				
EXISTING GAS MONITORING PROBES							
GMP-1	371.3	25	346.3				
GMP-2	384.1	38	346.1				
GMP-3	377.8	30	347.8				
GMP-4	376.8	30	346.8				
GMP-5	374.4	26	348.4				
GMP-6	383.6	32.5	351.0				
GMP-7	364.4	15	349.4				
GMP-8	364.4	20	344.4				
GMP-9	363.9	20	343.9				
GMP-10	371.3	24.5	346.8				
GMP-11	369.8	25	344.8				
PROPOSE	D GAS MONITO	ORING PROE	BE INFORMATION				
GMP-4R	380	50	330.0				
GMP-5R	386	56	330,0				
GMP-12	387	57	330.0				
GMP-13	389	59	330.0				
GMP-14	387	57	330.0				
GMP-15	384	54	330.0				
GMP-16	380	50	330.0				
GMP-17	380	50	330.0				
GMP-18	379	49	330.0				
GMP-19	374	44	330.0				
GMP-20	369	39	330.0				
GMP-21	364	34	330.0				
GMP-22	370	40	330.0				
GMP-23	384	54	330.0				
GMP-24	390	60	330.0				



MONITORING PROBE DETAIL

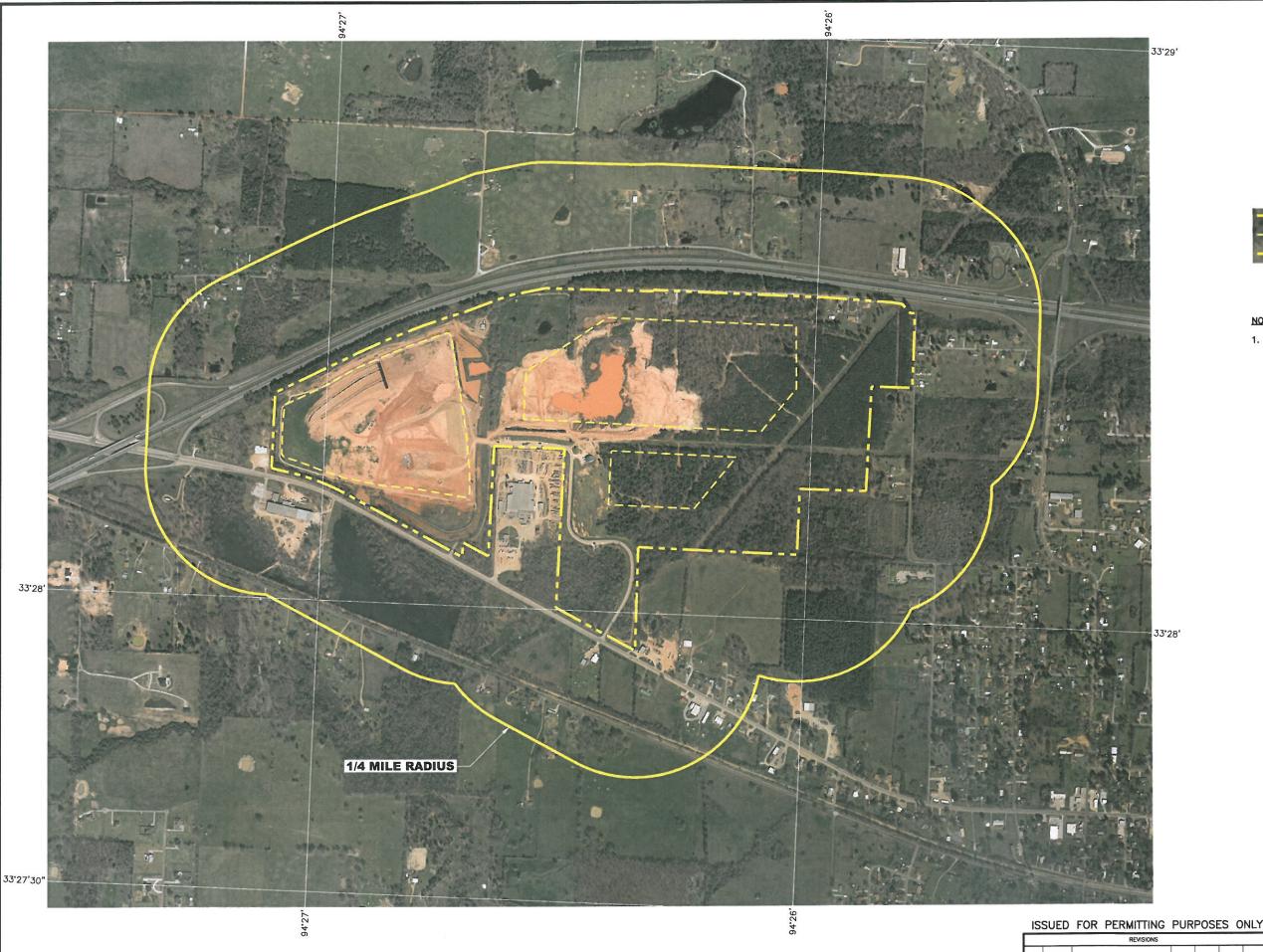
WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION



BIGGS & MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS MANSFIELD + WICHITA FALLS 817-563-1144

ISSUED FOR PERMITTING PURPOSES ONLY

REVISIONS						REVISIONS			TBPG FIRM	NO. 50222
							DSN. JHP	DATE: 06/1	3	DRAWING
							DWN. SRC	SCALE : GRAPH	ic	C1 2
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	CHK. KJW	DWG : G1.2_Probe	Detail.dwg	GI.Z





LEGEND



PERMIT BOUNDARY LANDFILL FOOTPRINT

1/4 MILE RADIUS

NOTE:

1. AERIAL PHOTOGRAPH IMMEDIATELY SURROUNDING THE PROPERTY PROVIDED BY AERO-METRIC FROM AERIAL PHOTOGRAPHY FLOWN MARCH 5, 2012.



STRUCTURES WITHIN 1/4 MILE OF PERMIT BOUNDARY

WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION



BIGGS & MATHEWS
ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD
DALLAS • WICHITA FALLS
817-563-1144

TBPE FIRM NO. F-256 TBPG FIRM NO. 50222 DSN. KJW DATE: 06/13
DWN. SRC SCALE: GRAPHIC G1.3 DWN BY DES BY CHK BY APP BY CHK. KJW DWG : G1.3-Aeriol.dwg

NEW BOSTON LANDFILL

APPENDIX G2 REPORTING AND RECORDING FORMS

30 TAC §330.371

NEW BOSTON LANDFILL MSW 576C LANDFILL GAS MONITORING REPORT

ON				
	Te	mperatu	re:	
Start:	The second secon	100 miles		
LFG Alarm is	Activated (LEL>	25%)	have cui	ous LFG Alarm rrent calibration date on sticker
Circle One	Circle One)	Ci	ircle One
	Yes Yes	No No		Date: Date:
s No	Yes	No	Yes No	Date:
	Operational Circle One S No S No	Start: Continuous Fin Continuous LFG Activated (LEL> During This Qu Circle One Solution No Yes Solution No Yes Solution No Yes Solution No Yes	Start: Sampler: Start: Finish: rify if Continuous LFG Alarm Activated (LEL>25%) During This Quarter Circle One S No Yes No S No Yes No	Start: Finish:

NEW BOSTON LANDFILL MSW 576C LANDFILL GAS MONITORING REPORT

GAS MONITORING PROBES

PROBE #	SURFACE ELEV. Ft-msl	BOTTOM ELEV. Ft-msl	TIME SAMPLED	STATIC PRESSURE "w.c.1	% CH ₄ 0-100	% LEL ² 0-100	% ⁴ O ₂ (0pt.) <i>0-100</i>	DEPTH TO WATER	WATER ELEV. Ftmsl	PROBE INTEGRITY VERIFIED YES/NO ³
1										
2										
3							12 1201 90 4	333	5038.0	
4R				au - ,						
5R	5	1								
6					1					
7		- 4								
8										
9										
10				112.00						
11				N						
12						4				
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16 17			4 6 6							
18								100		
19										
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21										
22									-77/1	
23										
24				W. 1. W.						

^{1 &}quot;w.c. - inches Water Column

GENERAL COMMENTS:							
Sampler:							
Company:							
Date:	·						
Gas Operations Mgr:	3						
Landfill Site Mgr:							

w.c. - Incress water Countil

2 % LEL=(20) X (observed % methane) - Note: Record>100% in LEL column if % methane is >5%

3 Note any problems with the probes in the general comments section above.

4 Optional

NEW BOSTON LANDFILL

APPENDIX G3 INSTALLATION INFORMATION AND TCEQ PERMIT MODIFICATION APPROVALS – EXISTING LANDFILL GAS MONITORING PROBES

30 TAC §330.371

INSTALLATION OF LANDFILL GAS MONITORING PROBES

NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TNRCC PERMIT NO. 576A

Prepared for

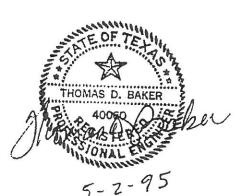
Western Waste Industries, Inc.

May 1995

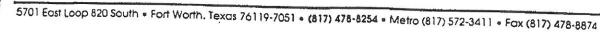
Prepared by

EMCON 5701 East Loop 820 South Fort Worth, Texas 76119 817 / 478-8254

Project 61118-001-070



New Boston Landfill Technically Complete June 10, 2002





May 2, 1995 Project 61118-001-070

Mr. H. Thomas Collins, P.E.
Compliance and Enforcement Section
Municipal Solid Waste Division
Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-3087

Re:

Installation of Landfill Gas Monitoring Probes New Boston Landfill, Permit No. 576A

Bowie County, Texas

Dear Mr. Collins:

On behalf of Western Waste Industries, Inc., we are submitting one original and two copies of the report documenting installation of the Landfill Gas (LFG) Monitoring probes for the New Boston Landfill. The probes were installed on April 13, 14, & 17. Installation of the gas probes and preparation of the installation were completed in accordance with the requirements of 30 TAC §330.56(n)(8)(B) and the Methane Monitoring Handbook published by Texas Natural Conservation Commission.

Please do not hesitate to contact us if there are any questions.

Sincerely,

EMCON

 \sim

Thomas D

Director, Te

Enclosure:

Installation of Landfill Gas Monitoring Probes Report (3)

cc: Mr. John Carrington - Western Waste Industries, Inc.

Mr. Keith Durrett - Western Waste Industries, Inc.

Mr. Kent Wiken - EMCON

CONTENTS

1 INTRODUCTION	1
2 LANDFILL GAS MONITORING PROBE	2
3 LANDFILL GAS MONITORING PROBE INSTALLATION	3
APPENDIX A Landfill Gas Monitoring Probe Location Map Landfill Gas Monitoring Probe Construction Detail Logs of Gas Probes	A.1 A.2 A.3-A.10
APPENDIX B State of Texas Well Reports	B.1-B.11

1 INTRODUCTION

This report documents the landfill gas (LFG) monitoring probe installation for the New Boston Landfill. Included in this report are a LFG probe location map, construction details, borings logs, and State of Texas well reports. This report is submitted in accordance with the requirements of the Methane Monitoring Handbook published by the Texas Natural Resource Conservation Commission (TNRCC).

The LFG Management Plan provides for a LFG monitoring network consisting of probes located around the perimeter of the site. The LFG Management Plan, TNRCC Methane Monitoring Handbook, and subsequent discussions with TNRCC staff personnel, provided the guidance for the probe installation.

2 LANDFILL GAS MONITORING PROBE NUMBER AND LOCATION

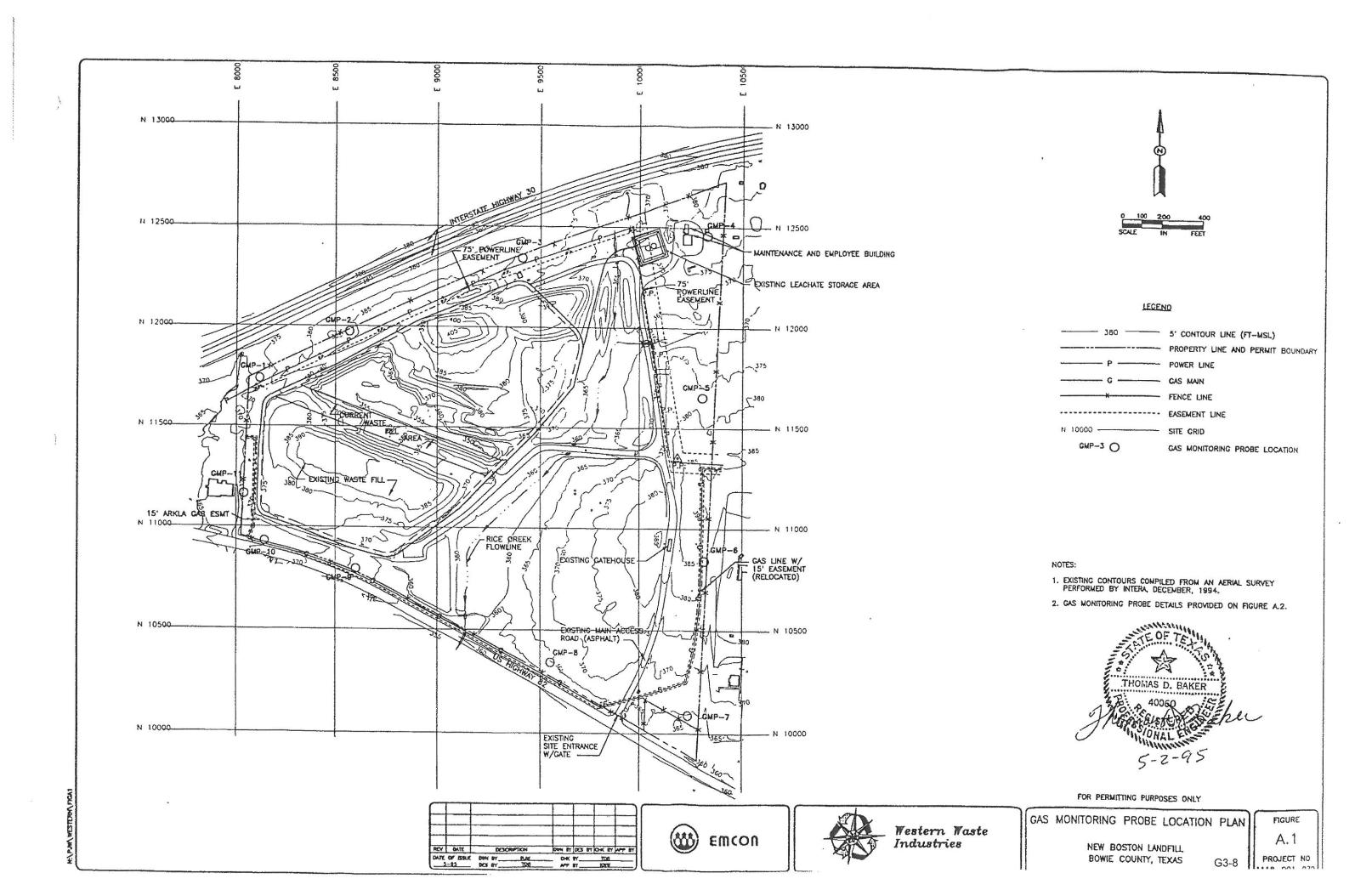
Eleven LFG monitoring probes were installed at this site. The number of probes and their locations were outlined in a plan sent to H. Thomas Collins, P.E., Team Leader, Landfill Remediation Team, Compliance and Enforcement Section, dated March 24, 1995. Approval of the installation plan by TNRCC was documented in an April 25, 1995, letter from Mr. Collins.

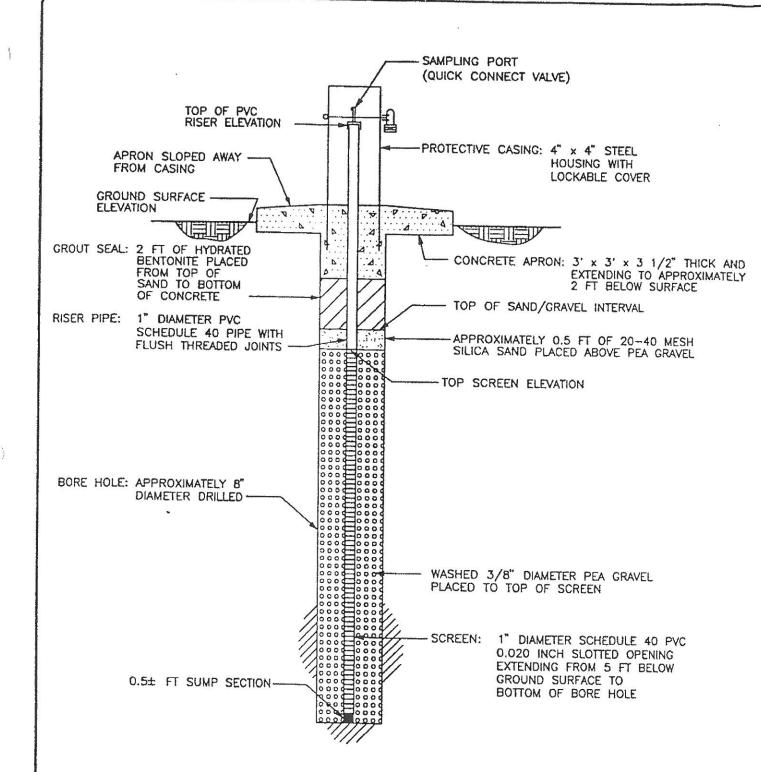
3 LANDFILL GAS MONITORING PROBE INSTALLATION

The LFG monitoring probes were installed on April 13, 14, and 17, 1995, and consisted of 1-inch diameter PVC pipe with slotted screens. Probe locations are shown on Figure A.1. The screens generally extended from the bottom of the hole to 4 feet below the ground surface. A gravel pack was placed from the bottom of the hole to approximately the top of screen, and 6 inches of sand was placed over the gravel pack. The installation was completed with 2 feet of hydrated bentonite and a concrete apron. The boring depth for each probe was selected to extend to the higher of the seasonal low water level at the monitoring point or the lowest elevation of waste within 1000 feet of the monitoring point. Groundwater and waste elevations, as well as bottom of probe elevations and screen elevations are listed on Figure A.2. The borings were drilled with continuous flight augers which resulted in a nominal 8-inch diameter hole.

A typical LFG monitoring probe construction detail is shown on Figure A.2 along with a schedule of specific information for each probe. Logs of borings which include soil descriptions and a probe construction detail are presented on Figures A.3 through A.13. The LFG monitoring probes were installed under the supervision of a well driller licensed in the State of Texas. Well logs for each probe are provided on Figures B.1 through B 11.

APPENDIX A





CMP	SURFACE	TOP OF RISER ELEV	GAS PROBE	COORDINATES		MSW			
UMP	(FEET)	(FEET)	NORTHING	EASTING	GROUNDWATER SEASONAL LOW	LOW ELEVATION	BOTTOM OF PROBE ELEVATION	PROBE SCREEN	PROBE DEPTH (FEET)
1	371.3	374.0	11737.97	8114,78	323	350	346.3	346/365	25
2	384.1	386.8	11972.61	8570.08	335	350	346.1	346/379	38
3	377,8	380.3	12343.72	9410.92	347	350	347.8	348/373	30
4	376.8	379.5	12463.63	10329.75	356	352	346.8	347/372	30
5	374.4	378.9	11653.46	10314.16	353	352	348.4	348/370	26
6	383.6	386.2	10840.27	10323.66	346	356	351.0	351/378	
7	364.4	367.2	10086.59	10246.05	340	353	349.4	350/359	. 32.5
8	364.4	366.8	10342.45	9500.58	346	348	344.4	345/359	15
9	363.9	366.5	10794.47	8602.78	321	347	343,9		20
10	371.3	374.0	10929.98	8141.74	321	347	346.8	344/359	20
11	369.8	372.4	11162.89	8036.52	322			347/367	24.5
						347	344.8	345/365	25

REMARKS:

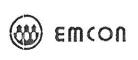
- 1. SURFACE ELEVATION AT MONITORING POINT DETERMINED BY SURVEY.
- 2. GROUNDWATER ELEVATIONS AT MONITORING POINT ESTIMATED FROM NEAREST SHALLOW PIEZOMETER OR INTERPOLATED FROM NEAREST TWO PIEZOMETERS USING LOWEST STABILIZED WATER LEVEL.
- 3. MSW LOW ELEVATION WITHIN 1000 FEET OF MONITORING POINT IS BASED ON TOP OF LINER ELEVATIONS DETERMINED FROM AVAILABLE PLANS.

THOMAS D. BAKER

40060 LOSER

STE

101111





GAS MONITORING PROBE DETAIL

FIGURE A O

NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS A.2
PROJECT NO

XAS G3-9

Pr	ojec	t Des		BOSTON I	Probes	JBE V	0. (÷Μ	P- 1			200/2004		0		
Depth, feet	Samples	Symbol / USCS	Location: Surface El.:	E 8114.78 371.33'	N 11737.97 MSL		Gas Probe Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, 1b/cu ft,	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive
		21212			SCRIPTION			H			Ď			Δ,		ร็
	U-1		CLAYEY SAN	D (SC), darl	colive gray	369.3										
1			CLAY (CL), se	ındy, red, or	ange & gray	207.3										
5 -	U-2		CLAYEY SAN	D (SC) gray	rish tan w/gray clay	365.3								e.		
1			seams			363.3										
10	U-3		CLAYEY SAN	D (SC), redo	lish tan to red											
	U-4 U-3		- w/red clay sea	ms below 17	ñ.			de de la companya de	PER PRINCES STATE OF STATE STA							
5 -	3.3.3.3.3.3			Anna de la constanta de la con		346.3	目							٠.		
- - - - - -		ALCOHOLOGICAL CONTRACTOR CONTRACT					And the second s								And the second second second	
-																
5 -						- The state of the	THE SAME OF PERSONS ASSESSED THROUGH ASSESSED.									
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ate B	orin; orin;	cologia	d: 4/14/95 eleted: 4/14/95	wn	Remarks:											

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

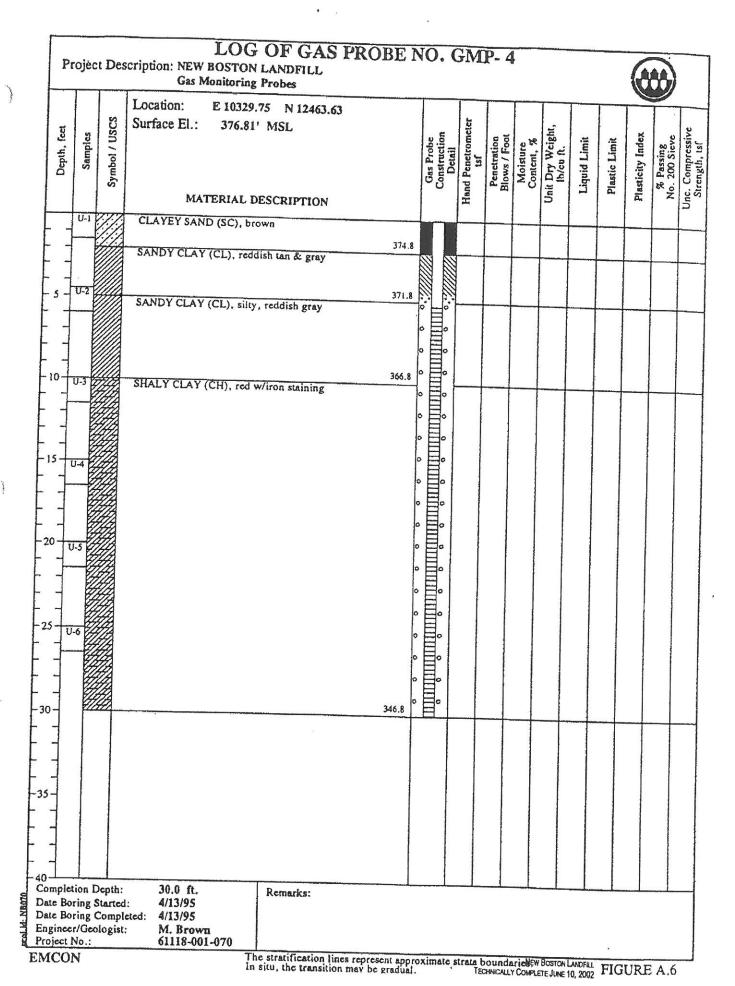
FIGURE A.3 New Boston LA/CFILL TECHNICALLY COMPLETE JUNE 10, 2002

Pr	ojec	t Des		BOSTON Agnitoring	OF GAS PRO LANDFILL Probes	DEN	. C	yiVI.	r- 2		2000			0		
Depth, feet	Samples	Symbol / USCS	Location: Surface El.:	384.10	98 N 11972.61 P MSL DESCRIPTION		Gas Probe Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, Ib/cu A.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive
	U-1		SANDY CLAY	Y (CL), tan	& olive											_
,			CLAY (CL), s stains & w/occ	ilty & sand asional ligi	y, reddish tan w/iron nt gray sandy clay seams	382.1										
10	U-2 U-3		- roddish gray	below 7.5 i	ît.											
+			CLAYEY SAN	D (SC), sil	ty, light reddish tan	372.1										
5	U-4					368.1										
					, dark reddish tan	364.1										
7-1-1-1-5	U-5		CLAYEY SAN													
1 1 1 1 1 1	U-7					354.1										
1			CLAY (CL), re	gaish tan												
5 +7	J-8															
4																
ate I ate I agin	Borin Borin	cologi	ed: 4/13/95 pleted: 4/13/95 st: M. Bro	5	Remarks:				1							

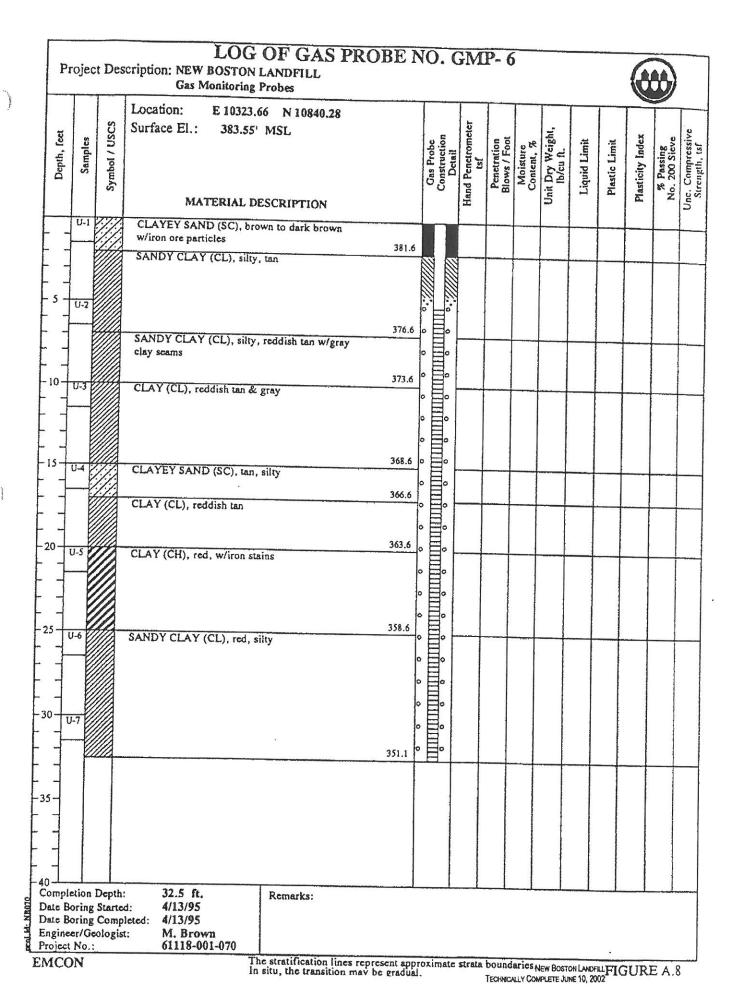
NEW BOSTON LANDFILL TECHNICALLY COMPLETE JUNE 10, 2002

	1			robes										W		
Samples	Symbol / USCS	Location: Surface El.:	377.77'				Gas Probe Construction Detail	Hand Penetrometer	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive
U-1	7.7.7.															
					у	375.8										
U-2		CLAY (CL), si	tv & sand, r	eddish tan w/eray		371.8										
		clay seams & in	on stains	, , , , , , , , , , , , , , , , , , ,		247 O	·									
U-3		CLAY (CL), re	d, silty			307.8	·									
		SHALY CLAY	(CL), red w/	tan sand clay sear	ms	364.8										-
U-4					¥!											
ACCESSACIO																
U-5 KK																
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \											The second secon					
N. Y		Almore, at minimum and a fall of the property or				347.8										
												TO PERSONNEL PROPERTY OF THE PERSONNEL PROPE				
-																
Borinį Borinį	Start	ed: 4/13/95 pleted: 4/13/95		Remarks:				l		1			1.			tun yuntun
T T T	J-3	U-1 U-2 U-3	CLAYEY SAN CLAYEY SAN CLAYEY SAN Clay seams CLAY (CL), sil clay seams & ir SHALY CLAY SHALY CLAY 30.0 ft. 4/13/95 oring Completed: 4/13/95 oring Completed: 4/13/95 No.: 61118-0	CLAYEY SAND (SC), silty CLAYEY SAND (SC), silty clay seams U-2 CLAY (CL), silty & sand, reclay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/ CLAYEY SAND (SC), silty, tan CLAYEY SAND (SC), silty, tan w/gray sand clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (CL), red w/tan sand clay sea CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (CL), red w/tan sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay sea SHALY CLAY (STAND (SC), silty, tan w/gray sand clay seams	MATERIAL DESCRIPTION CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams Alabel Started: 4/13/95 oring Completed: 4/13/95 oring Completed: 4/13/95 M. Brown No.: 61118-001-070	MATERIAL DESCRIPTION CLAYEY SAND (SC), silty, tan CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains 371.8 CLAY (CL), red, silty 364.8 SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 347.8 Advised: 4/13/95 Dring Started: 4/13/95 Dring Completed: 4/13/95	MATERIAL DESCRIPTION CLAYEY SAND (SC), silty, tan marks: CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains 361.8 SHALY CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams 347.8 stion Depth: 30.0 ft. oring Started: 4/13/95 oring Started: 4/13/95 oring Completed: 4/13/95	CLAYEY SAND (SC), silty, tan CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 341.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams 364.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 Remarks: 4/13/95 14/13/95 15/13/95 16/13/95	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & fron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams 364.8 SHALY CLAY (CL), red w/tan sand clay seams 364.8 SHALY CLAY (CL), red w/tan sand clay seams 364.8 Remarks: 377.8 377.8 377.8 377.8 Remarks: 377.8 SHALY CLAY (CL), red w/tan sand clay seams	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 Remarks: ring Sarted: 4/13/95 roring Sarted: 4/13/95 roring Completed: 4/13/95 roring Completed: 4/13/95 roring Completed: M, Brown No: 61118-001-070	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 364.8 SHALY CLAY (CL), red w/tan sand clay seams 367.8 367.8 367.8 368.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 360.8 SHALY CLAY (CL), red w/tan sand clay seams 361.8 SHALY CLAY (CL), red w/tan sand clay seams 368.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 360.8 SHALY CLAY (CL), red w/tan sand clay seams 360.8 SHALY CLAY (CL), red w/tan sand clay seams 361.8 SHALY CLAY (CL), red w/tan sand clay seams	CLAYEY SAND (SC), silty, tan CLAYEY SAND (SC), silty, tan w/gray éandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 361.8 367.8 SHALY CLAY (CL), red w/tan sand clay seams 361.8 Remarks: 413.95 A17.8 Remarks: 413.95 A17.8 Remarks: 61118-001-070 61118-001-070	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 364.8 SHALY CLAY (CL), red w/tan sand clay seams 377.8 SHALY CLAY (CL), red w/tan sand clay seams 368.8 SHALY CLAY (CL), red w/tan sand clay seams 378.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 378.8 SHALY CLAY (CL), red w/tan sand clay seams 369.8 SHALY CLAY (CL), red w/tan sand clay seams 379.8 SHALY CLAY (CL), red w/tan sand clay seams 360.8 SHALY CLAY (CL), red w/tan sand clay seams 371.8 SHALY CLAY (CL), red w/tan sand clay seams 371.8 SHALY CLAY (CL), red w/tan sand clay seams	CLAYEY SAND (SC), silty, tan w/gray sandy clay seams CLAY (CL), silty & sand, reddish tan w/gray clay seams & iron stains CLAY (CL), red, silty SHALY CLAY (CL), red w/tan sand clay seams SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams 347.8 SHALY CLAY (CL), red w/tan sand clay seams	

FIGURE A.5 New Boston Landfill Technically Complete June 10, 2002



Pr	rojec	t Des	cription: NEW Gas M	LOG (BOSTON L	OF GAS PR ANDFILL robes	OBE N	10. (GMO	P- 5	l	***************************************		TO THE STATE OF TH			
Depth, feet	Samples	Symbol / USCS	Location: Surface El.:	374.40			Gas Probe Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, Ib/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
		m			SCRIPTION			Ξ.			ר					ລັ
	U-1		SANDY CLAY		sh tan & gray (Fill)	373,4										
	U-2				reddish tan w/iron	369.4										
- 10	U-3		staining & gray	sandy clay s	cams											
- 15	U-4		SHALY CLAY & iron staining	(CH), red w	tan sandy clay seams	362.4										
- 20	U-3		CLAY (CH), sil w/calcareous centr.	ty, red w/she mented muds	aly clay seams & tone seams below 20	356.4										<u></u>
-25	U-6					The second secon										
-30						348.4	F									
-35							to the latter than the state of			THE PROPERTY AND ADDRESS OF THE PROPERTY OF TH	MANAPARTAMENT STREET, ST.		ORANIA A A A MANAGAMANTA A			
40 Compi	letio	Death	: 26.0 ft.		Remarks:									and the second state of the second states of	•	
Date E Date E Engine Projec	Borin Borin eer/C t No	g Starte g Comp leologis	ed: 4/14/95 oleted: 4/14/95	wn 01-070												
EMC	UN			In	e stratification lines r situ, the transition m	epresent app ay be gradua	roximate I.	strate	Теснию	daries ALLY COM	iew Bost IPLETE JU	ON LANDI NE 10, 20	FIL FIG	GUR	EA.	7



Pr	ojec	t Des	т	Gas N	BOSTO!	N LAND g Probes				1		1	,		т			0		
Depth, feet	Samples	Symbol / USCS	Locat Surfa	ce El.:	E 10246 364.3 TERIAL	5' MSL	10086,59			Gas Probe	Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive
5 -	U-1		CLA?	((CL), te		w/yellow	& red iron		361.4		0 0:////////									
	U-3		CLAY	(CH), re	ddish tan	& gray		*****	353.4		0									6
5																				
											Andrewson the contract of the Annual	de des la la company de la					The state of the s			
									And the second s		A STATE OF THE PERSON NAMED OF THE PERSON NAME			THE THE SHIPS OF A STATE OF STREET, THE ST		AND THE PERSON OF THE PERSON O	And the second s	the state of the s	A PARTY OF THE PROPERTY OF THE	
		Annual to the second							and the second section of the section of the second section of the section of the second section of the section of th					The second secon			ementalis amendaturjan metalaharan da			
mple te Be te Be gine	oring oring	Depth Starte Comp	ed: oleted: st:	15.0 ft. 4/13/95 4/13/95 M. Bro 61118-0	wn	Rem	arks:				1									

Project D	escription: NEW Gas M	LOG OF GAS PR BOSTON LANDFILL Ionitoring Probes	- CDE I		11 41	⊏• Ĉ	•				(1)		
Depth, feet Samples Symbol / USCS	1	E 9500.58 N 10342.45 364.42' MSL FERIAL DESCRIPTION		Gas Probe Construction Detail	Hand Penetrometer 1sf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	No. 200 Sieve	Unc. Compressive Strength, 1sf
U-1	1	(CL), silty, tan & light brown			_			_				=	5
10 U.3 11 U.4 11 11 11 11 11 11 11 11 11 11 11 11 11	SANDY CLAY seams	(CL), reddish tan w/gray clay (CH), red w/iron staining & gray	354.4										
npletion Dept Boring Star Boring Com ineer/Geolog	ted: 4/14/95 pleted: 4/14/95	Remarks:											

Project De	LOG OF GAS PROBE N scription: NEW BOSTON LANDFILL Gas Monitoring Probes	10. (GMO	P- 9)			i.	0		
Depth, feet Samples Symbol / USCS	Location: E 8602.78 N 10794.47 Surface El.: 363.86' MSL MATERIAL DESCRIPTION	Gas Probe Construction Detail	Hand Penetrometer	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, 1sf
U-1	CLAY (CL), brown to dark brown 362.9										
5 - U-2	SANDY CLAY (CL), yellowish tan, silty w/occasional gray clay scams w/iron staining										
10 U-3											
15 U-4 20 U-5	SHALY CLAY (CH), red w/occasional gray clay seams & yellow iron stains		The state of the s								
25- - - - - - - - - - - - - - - - - - -											

EMCON

	Рго	jec	t De	1	LOG W BOSTON Monitoring	OF GAS	PRO	BE N	0. 0	GM	P-10)						
Denth feet	100 100 100	Samples	Symbol / USCS	Location: Surface El.	371.34)		Gas Probe Construction	Hand Penetrometer	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, Ib/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, 1sf
-	-	1-1	7.7.7	CLAYEY SA		DESCRIPTION	***************************************			H			D			1		Cu
t	1	[369.3										
F	-			CLAY (CL).	reddish tan e	& gray												_
- 5		-2		- blocky belo CLAYEY SA w/dark red sh	ND (SC), sil	ty, light reddish t	An	364.3										
- 15	U-			- increase in c								The second secon			The state of the s			ne de la companya de
	U-5	1		SHALY CLAY	(CH), red v	v/sand & iron stai	ining	-					+		_		+	
- 25								346.3										
-30															The state of the s			
-35										A THE PARTY OF THE				Republic a re-				
40		-		A.C.A.			ng (1,1,1)											
Comp Date I Date I Engin Projec	Bori Bori eer/ et No	ng S ng C Geo	tarte Comp	d: 4/14/95 leted: 4/14/95 t: M. Bro		Remarks:											,1	

EMCON

The stratification lines represent approximate strata boundaries NEW BOSTON LANDFILL FIGURE A. 12 In situ, the transition may be gradual. TECHNICALLY COMPLETE JUNE 10, 2002 FIGURE A. 12

Proje	ct Des	Gas Monitoring Pa	obes	-CDE I	C	2.YAT	C-1]	L				0		
Depth, feet	Symbol / USCS	Location: E 8036.52 Surface El.: 369.81' M MATERIAL DES			Gas Probe Construction Detail	Hand Penetrometer	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, Ib/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, 1sf
U-I	777	CLAYEY SAND (SC). Ian &												ב
1		CLAY (CL), w/sand, red & t	an .	368.8										
5 U-2		SANDY CLAY (CL), reddish	brown & gray	364.8	· · · · · · · · · · · · · · · · · · ·									
+				362.8										
1		CLAYEY SAND (SC), silty, i w/gray clay seams	an to reddish tan		。副。					1		_	-	
U-3		- dark red calcareous mudston												
NATURAL STATES		SHALY CLAY (CH), red w/so staining	me sut & iron	344.8										
Boring	Depth: Started Comple plogist:	4/14/95 Red: 4/14/95 M. Brown 61118-001-070	emarks: ratification lines re	Dresent spare					New	Возтомы	Annu			

APPENDIX B

ATTENTION OWNER: Confidentially Privilege Modoe on Reverse Side State of Texas Well Report Texas Water Well Privilege Notice on Reverse Side Well Report Texas Water Well Privilege Austin, Texas Tarni
New Boston, TX 755; Street or RFD City) City South of Well: Street or RFD City South or RFD City
Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an office Counter- or Harl-Scale Texas County General Highway Map and attach the map to this form. LEGAL DESCRIPTION: Section No.
Section No. Block No. Township Abstract No. Survey Name
Description and color of formation material Similar
Depening Domestic Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Mud Rotary Air Hammer Jetted Industrial XXMonitor Public Supply Air Hammer Jetted Industrial XXMonitor Debug Public Supply Air Hammer Jetted Industrial XXMonitor Public Supply Air Hammer Jetted Industrial XXMonitor Debug Public Supply Air Hammer Jetted Indust
Date Drilling: Date Drilling: Started 4-14 19 22 From (ft.) To (ft.) Description and color of formation material Description and color of formation material Dia. (in.) From (ft.) To (ft.) Dia. (in.) From (ft.) To (ft.) Completed 4-14 19 22 From (ft.) To (ft.) Description and color of formation material Description and color of formation material Dia. (in.) Perf., Slotted, etc. Perf., Slotted, etc. Dia. (in.) Used Screen Mfg., if commercial Dia. (in.) Used Screen Mfg., if commercial Dia. (in.) PVC Screen Di
Started 4-14 19 2 81 Surfaces COMPLETION Completed 4-14 19 2 Surfaces Completed 5 CASING, BLANK PIPE, AND WELL SCREEN DATA: Started 4-14 19 2 Surfaces Completion Make Placed give Interval from 4.5 ft. to 25 From (ft.) To (ft.) Description and color of formation material 5 CASING, BLANK PIPE, AND WELL SCREEN DATA: CLAYEY SIT NO, GRAY DIA (ft.) Used Screen Mfg., If commercial From To Screen Mfg., If Commercial
From (it.) To (it.) Description and color of formation material 8) CASING, BLANK PIPE, AND WELL SCREEN DATA: 1. CLAYEY SITND, GRAY Dia. Or Perl., Slotted, etc. Screen Mfg., If commercial From To Screen Mfg., If commercial From To Screen Mfg., If commercial From To Screen Mfg., If commercial Screen Mfg., If commercial From To Screen Mfg., If commercial Screen Mfg., If c
2 - CLAY , ARD, fan & Start I N PVC SCREEN 5 25 25
Z- & CLAYEY SHND, gray Dia Or Perl., Stotled, etc. Setting (tt.) Gray Clay I was screen Mfg., If commercial From To Scree
Z- & CLAY, red, fan & star 1 N PVC Screen S 25 0
1 1 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(e - 8 CLAYIEY SHOWD gray & fam
9 - 25 CLAYIZY SAND, red
6) CEMENTING DATA [Rule 287,44(1)]
Comemed from U ft. to 4.5 ft. No. of Sacks Used 3
(Use reverse side if necessary) Method used Bentonite 13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Comented by ☐ Enterprises
Depth to pump bowls, cylinder, jet, etc.,
14) WELL TESTS: N/A Specified Steel Sleeve Installed [Rule 267,44(3)(A)]
Type Test: Pump Beller Jetted Estimated Yield:gpm withft_drawdown afterhrs. Pittess Adapter Used {Rule 287.44(3)(8)} X[Approved Afternative Procedure Used {Rule 287.71}
15) WATER QUALITY: N/A
Did you knowingly penetrate any strate which contained undestrable constituents? Static levelft. below land surface Date
Yes No if yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Keby cartify that this well was deliled by To for the last the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was deliled by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this well was delibed by To for the last this was delibed by To for the last this was delibed by To for the last this was delibed by To for the last think was delibed by T
exeby 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 beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and beilef. I understand the statements herein are true to the best of my knowledge and the statements herein are true to the
DRESS 7098 Mansfield Highway Kennedale
(Stoe) (City) (City) (Sinite) (7in)
Nickned Well Orling (Signed)
(Registered Dritter Trainee) ase attach electric log, chemical analysis, and other pertinent information, if available.
C-0199 (Rev. 05-18-90)

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas WELL REPORT

GMP - 2

Texas Water Well Drillers Soard P.O. Box 13087 Austin, Texas 78711

1) OWNER Western Was		3	ADDR	ESS_	Hw	y. 82 a	t I-30	New	Boston	ጥሄ 7	5 = 2 :
2) LOCATION OF WELL:	(Name)					(Street or Rf	FD)	(Cir)	DUSCOLI	(State) (Z.p)
County Bowle	. 1		milian i	_	Wes	r		Vor. P.			, (2.,p)
New Boston	Landfill		_ miles i	1 - 	NE. SY	V, etc.)	direction from _	New B			
Driller must complete the lenst descript	no helow with diamone								(Towr	1)	
Driller must complete the legal descript Quarter- or Half-Scale Texas County Go	sonassi Hintere dan en	and direction	OWI MOTI	intersec	ang se	ction or survey	lines, or he mu	st locate an	d identify the	well on an o	Mical
LEGAL DESCRIPTION:	some callinesh seeth star	ו פעם נבאמוניה נ	וורע כע קבאר	i iorm.							
		•									
Section No Block N	io Townsh	(p		Ab	stract h	lo	Surv	ey Name .			
Distance and direction from two Int	Brisecting section or surv	rey lines									
EF-SEE ATTACHED MAP											
3) TYPE OF WORK (Check):	4) PROPOSED US	SE /Charles	Gas	Pro	he		T = =				
New Well Deepening		industrial	XXMo		222				D (Check):		□ Drive
☐ Reconditioning ☐ Plugging		Hew taet			5. 1000	ublic Supply			Air Hammer		
	C2 III QUESON 1	C) Leef Aveil	☐ Inj	ector	UD.	e-Watering	☐ AICR	otavy 🗆	Cable Tool	☐ Other	
6) WELL LOG:	DIAMETER	OF HOLE		;	7) 80	REHOLE CO	MPLETION:			Manual III .	
Date Drilling:	Dia. (in.) From	(ft.) T	o (fL)]		Open Hole	Straig	int Wall	□ Und	ierreamed	
Started 4-14 19 75	8 ¹¹ Surfe	com	pleti	bn	K	Gravel Packe				101101011100	
Completed				1	H C	Gravel Packed	give interval	from S	4,5 .	- 35	
				1			green more		IC.	<u> </u>	ft.
From (ft.) To (ft.)	escription and color of fo	Ormation mat	edel		n CA	SING BLAN	V 74797 ALIP 110				
**************************************			200		_	SHO, BUCH	K PIPE, AND W	ELL SCRE	EN DATA:		
0 - 2 5.	ANDY CLA	y tan	Folive	Dia	New	Steel, Pla			Setting	(fL)	Gaçe
	,	,,		(In.)	Used	Perf., Slo Screen M	Alg., If commerci	aJ T	From	To	Casting
2 - 12.5 SA	NDY CLAY,	1 a Poli	F. I.		Ñ	1					Screen
		aro con	y rm	1	11		Eiser		5	38	002
12.5 - 16 Ci	ty Eig SAND	1001-	1		10	10 1	user		0	تخــ	
	1129 2000	1/40	Term			 					
16 - 20 SA	NO. C. AU	111	100			-					
7/	NOW CLAY	1 611-1	rea			<u> </u>		1			
20 - 30 CL	styling SANI	D 100	, ,	9) CE	MENTING DA	TA [Rule 287.	44(1)]_			_
		ist tu			Co	mented from _	0 ft. to				
	side if necessary)	est tes	~~			-	ft. to	ħ	No. of Sac	ks Used	
	srow ii necessary)				Ma	thod used	Bentonit	e			
					Ce	mented by _	GM Enter	prises			
	Submersible C	ylinder						01 0	, .		
Other				1		RFACE COM			' surfa		ь
Depth to pump bowls, cylinder, jet, e	tc.,	ît.			ш	Specified Sur	face Slab Install	ed [Rule 2	287.44(2)(A)]		
14) WELL TESTS: N/A							el Sleeve Installe			6)	
.,,	aller Detred						or Used [Rule				
		Estime	2015/25 2015/25		D	Approved Altr	emative Procedu	re Used	[Rule 287.71]		
Yleid: gpm with	ft. drawdown after	ſ	. hrs.	4.	45 bara	928 I PIEL.	N/A			***	
15) WATER QUALITY: N/A				,	Market Systems	TER LEVEL:					
Did you knowingly penetrate any stri	itis which contained unc	instrable					ft, bek	w iand sur	face De	ito	
constituents?		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			A/TI	HEHRIN THOW		ppm.	De	abe	
☐ Yes ☐ No If yes, submit	"REPORT OF UNDES!	RABLE WAT	ER"	12	D PA	CKERS:	N/A	Туре		Depth	
Type of water?	Depth of strate			-	- ither		11/61	1744		Deput	
Was a chemical analysis made?											
hereby partity that this wall was delited by	· lor males — ·			u	- 100 M	201 20 200					
I hereby certify that this well was drilled by me that failure to complete items 1 thru 15 with rec	ii (or under my supervisi sult in the loc(s) being n	ion) and that Rumad for co	each and moletion	ali of the	about the	ments herein s '	are true to the be	net of my tur	nowiedge and	belief, I und	bristand
A11			and a second					2004			
	or print)			WELL	L DRIL	Ler's Licen	BENO	3006	m		
200			V -					-			
IDDRESS 9098 Man of Lelf			Kenn					Cexas		7606	0
				(City)				(Simin))	(Zip)	
(Signed)	Maria Davida			(Sign	4 d) _	Total Name of Street, and Stre					
/ (Licensed	Well Driller)						(Regist	ored Driller	Trainee)		
Please attach electric log, chemical analysis,	and other pertinent info	method Han-	ملخمالت			E~ TUP	makes Militari				
₩ ~ (*) (**) (**)	— a serial personal miles	THE COLL IS NOT	www.			FOR 1 WC USS	only: Well No.		Located	lon map _	
74/0 0400 (0 00 40 00)				one of the state							Total Control of

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas
WELL REPORT

GMP - 3

Texas Water Well Drillers Board P.O. Sox 13087 Austin, Texas 78711

) OWNER Western Waste Industries ADDR	ess	lwy. 82 at	The same of the sa	Bostor	1. TX 7	5501
2) LOCATION OF WELL:		(Street or RF	D) (C)	ty)	(State	
County Bowle , 1		st d	Frection from New B	oston.	Texas	
New Boston Landfill		SW, etc.)		(Tow	m)	
Driller must complete the legal description below with distance and direction from two	intersecting	section or survey	lines, or he must locate a	nd Identify the	wall on an	official
Quarter- or Half-Scale Texas County General Highway Map and attach the map to this	ı form.	::50		no rounting gre	r wwii G(120) (nintag!
LEGAL DESCRIPTION:						
Section No Block No Township	Abstrac	t No.	Survey Name			
Distance and direction from two intersecting section or survey lines						
Ö EEE ATTACHED MAP						
3) TYPE OF WORK (Check): 4) PROPOSED USE (Check): Gas	s Probe					
		2 000000000000000000000000000000000000	5) DRILLING METH			☐ Driver
	_	Public Supply	Mud Robery [
	ectors L	De-Watering	☐ All Robary	Cable Tool	☐ Other	
6) WELL LOG: DIAMETER OF HOLE	ח	BOREHOLE CO	MPLETION:			-
Date Drilling: Dia. (in.) From (ft.) To (ft.)]	Open Hole	Straight Wall	□Un	derreamed	
Smarted 4-/3 19 75 8" Surface completi	_	Gravel Packs			•	
Completed 4-13 19 22		If Gravel Packed	give Interval from	4,5 1	.m 34	C: h
	1		2007			
From (ft.) To (ft.) Description and color of formation material	8)	CASING, BLANK	PIPE, AND WELL SCRI	EEN DATA:		
0 - 2 CLAYEY SAND tim	N			Setting	- /4 \	
0 - 2 Cityley SAND, tim	Dia. o	Perf., Slot	tted, etc.		3 (ir)	Gage Castng
	(in.) Us		lig., If commercial	From	То	Screen
2 - 6 CLAYEY SAND, tany gray	1 N	>	creen	5	30	C.C.
0	1 1	it [liser	0	5	
6 - 10 SANDY CLAY, red-tun						
60.13						
10-13 SANDY City, red						
13-30 SITALY CLAY Ned	9)	CEMENTING DA	TA [Rule 287,44(1)]			1.60
13-30 SITALY CLAY Ned		Comented from _	0 ft. to 4.5	h. No. of Sa	cks Used _	3
(like any manufactor)	1	<u> </u>	ft. to	L No. of Sa	cks Used _	
(Use reverse side if necessary)	1		Bentonite			
		Comensed by	GM Enterprise	5		
☐ Turbine ☐ Jet ☐ Submersible ☐ Cyfinder		I IDEA OF CALL	21	21 6		
Other		SURFACE COMP		3' surf		ab
Depth to pump bowls, cylinder, jet, etc.,tt.			tace Stab Installed [Rule			
14) WELL TESTS: N/A			N Sleeve Installed [Rule		Į.	
Type Test: Pump Baller Detted Estimated			or Used [Rule 267.44(3)			
Yield: gpm with ft. drawdown sher hrs.		O/vhbiosed VIII	mative Procedure Used	(Rule 267.71]	
	11) 1	VATER LEVEL:	N/A			
15) WATER QUALITY: N/A	1	Static level	ft. below land su	irface D	ato	
Did you knowingly penetrate any strate which contained undesimble	l .		дрт	2001210 (2000)	ano	
constituents?						
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	12)	ACKERS:	N/A Type	}	Depth	
Type of water? Depth of stress Was a chemical analysis made? Yes No						
I hereby certify that this well was drilled by me (or under my supervision) and that each and	all of the str	itements herein a	ere true to the best of my i	knowledge en	d belief. I un	derstand
that fallure to complete Items 1 thru 15 will result in the log(s) being returned for completion	and resubm	ttel.	-			
COMPANY NAME GM Enterprises	MELT D	HLLER'S LICEN	SE NO. 3006	, M		
posess 7098/Mansfield Highway Kenn				SUPPLIES OF THE STREET OF THE STREET		
DDRESS /098/Mansfle/d/ Highway Kenn	edale		Texas		7606	0
10/10	(City)		(Sana	0)	(Z)p)	
(Licensed Well Dritter)	(Signed)					
/ (Content wat Disec)	2		(Registered Drift	er Trainee)		
Please attach electric log, chemical analysis, and other pertinent information, if available,		For TWC Line	only: Well No	! none	d on man	
TWO NOT / Pay 05-19-00\					connection .	
			Menu Dace 1	MARIN I		

Send original copy by cartified mail to: Taxas Water Commission, P.O. Box.13087, Austin, Texas 78715 Please use black ink. ATTENTION OWNER: Confidentiality State of Texas Texas Water Well Drillers Board Privilege Notice on Reverse Side GMP - 4 WELL REPORT P.O. Box 13087 Austin, Texas 78711 1) OWNER Western Waste Industries ADDRESS Hwy. 82 at I-30 New Boston, (Street or RFD) LOCATION OF WELL: County west miles in _ direction from New Boston, Texas New Boston Landfill (NE, SW, etc.) Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form. ☐ LEGAL DESCRIPTION: Section No. ___ ___ Block No. ____ Township _ ___ Abstract No. _____ Survey Name __ Distance and direction from two intersecting section or survey lines ____ SEE ATTACHED MAP 3) TYPE OF WORK (Check): 4) PROPOSED USE (Check): Gas Probe 5) DRILLING METHOD (Check): New Well Deepening ☐ Domestic □ Driven ☐ Industrial XX Monitor Public Supply ☐ Mud Rotzry ☐ Air Hammer ☐ Jetted ➡ Bored ☐ Reconditioning Plugging ☐ Irrigation Test Well ☐ Injection De-Watering ☐ Air Rotary ☐ Cable Tool ☐ Other _ 6) WELL LOG: DIAMETER OF HOLE BOREHOLE COMPLETION: Date Drilling: Dia. (In.) From (ft.) To (fL) 18 95 Open Hole Straight Well Started Underreamed completion Surface Gravel Pecked 1995 Other _ Completed .. If Gravel Packed give Interval ... from 4/5 ft. to _ From (ft.) To (fL) Description and color of formation material CASINO, BLANK PIPE, AND WELL SCREEN DATA: 7 CLAYEY SAND C New Steel, Plastic, etc. Setting (ft.) Die Perf., Slotted, etc. Gace Screen Mfg., if commercial (In.) Used Casdno From To Screen N PVC Screen 5 30 0.02 Reser 0 CEMENTING DATA [Rule 267.44(1)]
Comented from 0 tt to 4.5 ft. No. of Secks Used 3 fL to (Use reverse side if necessary) __ ft. No. of Sacks Used __ Bentonite Method used _ MA 13) TYPE PUMP: Commented by GM Enterprises ☐ Turbine □ Jet ☐ Submersible ☐ Cylinder Other_ 10) SURFACE COMPLETION 3' x 3' surface slab Depth to pump bowls, cylinder, jet, etc., _ Specified Surface Stab Installed [Rule 267.44(2)(A)] Specified Steel Sleeve Installed [Rule 287,44(3)(A)] 14) WELL TESTS: N/A Pitiess Adapter Used [Rule 267,44(3)(B)] Type Test: ☐ Pump D Baller ☐ Jetted ☐ Estimated XXApproved Alternative Procedure Used [Rule 287,71] gpm with _ it drawdown after 11) WATER LEVEL: N/A N/A 15) WATER QUALITY: Static level __ ... fl. below land surface Did you knowledly penetrate any strata which contained undesirable Date constituents? Artesien flow opm. Date If yes, submit "REPORT OF UNDESIRABLE WATER" 12) PACKERS: N/A Type Deoth Depth of strain . 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. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resultmittel.

TWC-0199 (Rev. 05-18-90)

COMPANY NAME

DORESS

GM Enterprises

(Street or RFD)

7098 Manstigld Highway

(Type or print)

(Licensed Well Driller)

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

Kennedale

(City)

(Signed)

WELL DRILLER'S LICENSE NO.

For TWC use only: Well No.

Texas

(State)

(Registered Driller Trainee)

Located on map _

76060

Send original copy by certified mail to: Texas Water Commission, P.O. Box 13067, Austin, Texas 78711 ATTENTION OWNER: Confidentially State of Texas Texas Water Well Drillers Board Privilege Notice on Reverse Side GMP - 5 WELL REPORT P.O. Box 13087 Austin, Texas 78711 1) OWNER Western Waste Industries Hwy. 82 at I-30 ADDRESS 2) LOCATION OF WELL: COUNTY BOWIE (Street or RFD) County . 1 west miles in _ direction from New Boston, Texas New Boston Landfill (NE, SW, etc.) (Town) Onlier must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form, ☐ LEGAL DESCRIPTION: Section No. ___ _ Block No. ___ ____ Township ___ Abstract No. _____ Survey Name __ Distance and direction from two intersecting section or survey lines ____ SEE ATTACHED MAP 3) TYPE OF WORK (Check): 4) PROPOSED USE (Check); Gas Probe 5) DRILLING METHOD (Check); New Well Deepening D Drive ☐ Domestic ☐ Industrial **XX**Monitor Public Supply ☐ Mud Rotary ☐ Air Hammer ☐ Jetted ¥ Borec Reconditioning Plugging ☐ Imigation Tost Well ☐ Injection De-Watering ☐ Air Rotary ☐ Cable Tool ☐ Other _ 6) WELL LOQ: DIAMETER OF HOLE 7) BOREHOLE COMPLETION: Date Drilling: Dia. (In.) From (ft.) To (fL) Open Hole Straight Wall Underreamed Surface completion Kingravel Packed Other _ If Gravel Packed give Interval . . . from _ 415 no-From (ft.) To (ft.) Description and color of formation material 8) CASING, BLANK PIPE, AND WELL SCREEN DATA: Ø CLAY New Steel, Plastic, etc. Setting (fL) Gage Perf., Slotted, etc. (ln.) Used Screen Mig., if commercial Casano From Ta Screen olive brown Ι PVC Screen 0.0. CEMENTING DATA [Rule 287.44(1)] ft. to 4.5 ft. No. of Secks Used 3 _ft. No. of Sacks Used ___ (Use reverse side it necessary) Bentonite Method used __ NA 13) TYPE PUMP: Commented by GM Enterprises ☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder Other 10) SURFACE COMPLETION 3' x 3' surface slab Depth to pump bowls, cylinder, jet, etc., . Specified Surface Sieb Installed [Rule 267.44(2)(A)] Specified Steel Sleeve Installed [Rule 267.44(3)(A)] N/A 14) WELL TESTS: Pitiess Adapter Used [Rule 267,44(3)(8)] Type Test Jetted ☐ Estimated XXApproved Alternative Procedure Used [Rule 267.71] gom with ft, drawdown after 11) WATER LEVEL: N/A N/A 15) WATER QUALITY: Static level __ R below land surface Did you knowingly penetrate any strate which contained undesirable Dete Artesian flow _ constituents? opm. ☐ Yes ☐ No If yes, submit "REPORT OF UNDESIRABLE WATER" 12) PACKERS: N/A Type Depth Type of water? _ __ Depth of strate _ Was a chemical analysis made?

☐ Yes. ☐ No I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the attainments herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmitted.

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

TWC-0199 (Rev. 05-18-90)

(Signed)

GM Enterprises

7098 Mansfield Highway

(Type or print)

ef or R50

(Licensed Well Driller)

Kennedale

(City)

(Signed)

WELL DRILLER'S LICENSE NO.

3006 M

(Steps)

(Registered Driffer Trainee)

Texas

Located on map

76060

(Zip)

ATTENTION OWNER: Confidentially Privilege Notice on Reverse Side

State of Texas WELL REPORT

GMP - 6

Texas Water Well Drillers Board P.O. Box 13087 Austin, Texas 78711

1) OWNER Western Waste Industries	
(Name)	ORESS Hwv. 82 at I-30 New Boston, TX 75501
2) LOCATION OF WELL: County BOWIE 1	(Street or RFD) (City) (State) (Z:p)
New Boston Landfill mle	west direction from New Boston Tower
Quarter- or Half-Scale Texas County General Highway Map and attach the map to t	(Town) No intersecting section or survey lines, or he must locate and identify the well on an official this form.
LEGAL DESCRIPTION:	his form.
Section No Block No Township	
	Abstract No Survey Name
SEE ATTACHED MAP	
	as Probe 5) DRILLING METHOD (Check):
Demodition De la company AAA	Monitor Public Supply Mud Rottery All Manager To Al
☐ Reconditioning ☐ Plugging ☐ Irrigation ☐ Test Well ☐ I	injection De-Watering Air Rotary Cable Tool Other
6) WELL LOG: DIAMETER OF HOLE	
Date Drilling:	Done Hale
Started 7 19 45 8" Surface complet	- ilan Lunderreamed
Completed U-13 19 22	If Gravel Packed Other
	tt to 32.5 t
From (ft.) To (ft.) Description and color of formation material	A CALLED TANK
	8) CASING, BLANK PIPE, AND WELL SCREEN DATA:
0 - 2 CLAYIEY SAND, FROWARD	New Steel, Plastic, etc. Setting (ft.) Gage
	(in.) Used Screen Mig., if commercial From Casting
2 - 7 SANDY CLAY, fam	N PVC C
	1 11 12
7-10 SANDY CLAY Red for	
10 - 15 SANDY CLAY, LOD-ON	
20 - 25 CLAY 100 CLAY for	-Red () CEMENTING DATA [Rule 267,44(1)]
	Cemented from 0 ft. to 4,5 ft. No. of Secks Used 3
(Use reverse side if necessary)	ft. toft. No. of Sacks Used
13) TYPE PUMP: N/A	Manage metronice
П	Commend by GM Enterprises
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other	
	10) SURFACE COMPLETION 3' x 3' surface slab
Depth to pump bowle, cylinder, jet, etc., ft.	Specified Surface Slab Installed [Rule 287,44(2)(A)]
14) WELL TESTS: N/A	Specified Steel Sleeve Installed [Rule 287.44(3)(A)]
Type Test: Pump Baller Jetted Estimated	☐ Pitiess Adapter Used [Rule 287,44(3)(B)]
Yield: gpm with ft. drawdown after hrs.	XApproved Alternative Procedure Used [Rule 267,71]
15) WATER QUALITY: N/A	11) WATER LEVEL: N/A
	Static level & halour hand and
Did you knowingly penetrate any strate which contained undesirable constituents?	Artesian flow gpm. Date
☐ Yes ☐ No If yes, submit "REPORT OF UNDESIRABLE WATER"	
Type of water? Depth of strains	12) PACKERS: N/A Type Depth
Was a chemical analysis made? ☐ Yes ☐ No	
pereion contitue that this well was delived by	
nereby certify that this well was drilled by me (or under my supervision) and that each and at failure to complete items 1 thru 15 will result in the log(s) being returned for completion.	all of the statements herein are true to the best of my knowledge and belief it incompany
OMPANY NAME GM Enterprises	
Type or print)	WELL DRILLER'S LICENSE NO. 3006 M
7000 46-6160	odolo –
(Styletor RPP)	edale Texas 76060
Ignod) Lack	(City) (State) (Zip)
(Licensed Well Driller)	(Signed)
	(Registered Dritter Trainee)
sase attach electric log, chemical analysis, and other pertinent information, if available.	For TWC use only: Well No. Located on map
VC-0199 (Rev. 05-18-90)	NEW DOSIDATION DAILY

Send original copy by certified mail to: Taxas Water Commission, P.O. Box 13067, Austin, Texas 78711 Please use black ink. ATTENTION OWNER: Confidentially Texas Water Well Drillers Board State of Texas Privilege Notice on Reverse Side GMP -P.O. Box 13087 **WELL REPORT** Austin, Texas 78711 1) OWNER Western Waste Industries ADDRESS Hwy. 82 at I-30 New Boston, TX 75501 (Street or RFD) LOCATION OF WELL: County west direction from New Boston, Texas New Boston Landfill (NE, SW, etc.) (Town) Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form. LEGAL DESCRIPTION: Section No. __ Block No. ____ Township _ Abstract No. _____ Survey Name Distance and direction from two intersecting section or survey lines ____ GE ATTACHED MAP 3) TYPE OF WORK (Check): 4) PROPOSED USE (Check): Gas Probe 5) DRILLING METHOD (Check): New Well Drive Deepening ☐ Domestic ☐ Industrial XXMonitor ☐ Mud Rotary ☐ Air Harrymer ☐ Jetted ➡ Borec Public Supply Reconditioning Plugging ☐ Imigation Test Well ☐ Injection ☐ De-Watering ☐ Air Rotary ☐ Cable Tool ☐ Other ☐ 6) WELL LOG: DIAMETER OF HOLE 7) BOREHOLE COMPLETION: Date Drilling: Dia. (In.) From (fL) To (fL) Open Hole Straight Wall 19 95 Underreamed Surface completion Gravel Packed Other _ Completed If Gravel Packed give Interval ... from 42 From (ft.) To (ft.) Description and color of formation material 8) CASING, BLANK PIPE, AND WELL SCREEN DATA: 3 CLIME CILLO

thy sand, burn	Dia.	Or	Perl., Slotted, etc.	Settin) (fL)	Gage
2	(in.)	Used	Screen Mfg., if comm	vercial	From	To	Cas: Scre
3 - 6 City fam solive	1	N	PVC Acrea	~	5	15	CIC
1 11 014104 1114	1/	N	" Riser		0	-5	-
6 - 11 SHADY CLAY, red-fun	-						
11-15 CIAGO DON I. DON	-						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
	1 1	n) CEI	MENTING DATA [Rule	287.44(1)]			
	1	Cen	nemed from 0 to				
(Use reverse side if necessary)		Man	hodused Benton	ite ft !	No. of Sec	oks Used _	
13) TYPE PUMP: N/A	1	itera e		erprises			
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder		-	miled by				
Other	1	0) SUF	FACE COMPLETION	3' x 3'	surfa	ace sla	e à
Depth to pump bowls, cylinder, jet, etc.,			Specified Surface Slab In	stalled [Rule 267	.44(2)(A))		
14) WELL TESTS: N/A			Specified Steel Sleeve In	mailed [Rule 267	44(3)(A))	8	
7			Pitiess Adapter Used [R	luie 287,44(3)(8)]	0.00.00		
Type Test: Pump Baller Jetted Estimated Yield: opn with it drawdram after		IX.	Approved Alternative Pro-	uR) beat erubec	ie 267,71]		
The desirement of the last of		*1 ***	TER LEVEL: N	/A			
15) WATER QUALITY: N/A	•		clavel tr		900		
Did you knowingly penetrate any strate which contained undesirable					300	ate	
CONSTITUENTS?				gpm.	De	ato	
AND THE PROPERTY OF STREET WATER	1:	PAC	KERS: N/A	Туре		Depth	
Type of water? Depth of strata							
Was a chemical analysis made? ☐ Yes ☐ No							
hereby certify that this well was drilled by me (or under my supervision) and that each and that fallure to complete items 1 thru 15 will result in the log(s) being returned for completion	all of th	e stater	vents herein are true to th	e best of my know	iodos sori	hallaf Lun	dombod
	and res	John that				Denne LUK	TALE STATE
COMPANY NAME GM Enterprises	WELL	L DRILL	ER'S LICENSE NO	3006 n	1		
Type or print)							
ADDRESS 7098 Marsfield Highway Kenne			***	Texas		7606	0
	(City)			(State)		(ZIp)	
(Licensed Well Driller)	(Sign	ed)					
((Propertional Alant Dillutal)			(Re	gistered Dritter Tra	since)		
lease attach electric log, chemical analysis, and other pertinent information, if available,		F	or TWC use only: Well I	No.	1.0	d on map	
WC-0199 (Rev. 05-18-90)				The state of the s		on map _	
TEXAS WATER C	OMMIS	SION	COPY TECHNICALLY	NEW BOSTON LANDFIL COMPLETE JUNE 10, 200		FURE B.7	7
G3-28					- FIO	ORE B. /	t i
30 20	70						

Send original copy by certified mail to: Te ATTENTION OWNER: Confidentiality				**********			***************************************	STATE OF THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND	ed black ink
Privilege Notice on Reverse Side			e of To			- 8		ater Well Dr P.O. Box 13 stin, Texas	087
2) LOCATION OF WELL: County Bowle New Boston	(Name)		RESS _	•	ry . 82 at	D) (C	w Bosto	(Sta	75501 le) (Ž.p
						lirection from New			
Driller must complete the legal descript Cuarter- or Half-Scale Texas County Gr LEGAL DESCRIPTION: Section No Block N Distance and direction from two int	loTownship	are map w un	Abi					e well on an	official
3) TYPE OF WORK (Check):	4) PROPOSED USE (Che	eki: Ga:	s Pro	be					
New Well Deepening Reconditioning Plugging	□ Domestic □ Indus □ Infgation □ Test	THE XXMO		□P	ublic Supply	5) DRILLING METH	Air Hennin	or 🗆 Jette	Drive
6) WELL LOG:	DIAMETER OF HOL		Т			The state of the s	Cable Too	Othe	r
Date Drilling: Started 4-14 19 95 Completed 4-14 19 25	Die flet F (E)	To(ft) Completi			PREHOLE COI Open Hole Gravel Packet	Straight Wall		nderreamed	
						give interval , . , from _	4,5	L D _ Z	<i>□</i> h.
	escription and color of formation		-) CA	SING, BLANK	PIPE, AND WELL SCR	EEN DATA:	THE STATE OF THE S	
0 - 7 5A	Silty	isction.	Dia.	New	Steel, Plas Perl., Slott		Settin	g (fL)	Gage
7 - 10 SA	Silty	, ,	(in.)	Used	Screen Mf	g., if commercial	From	То	Casting Screen
3/F	NDY CLAY, 100	-tan	1	N		crean	5	20	002
10-20 54	ALY CLAY,	red	-	10	11 70	leser	0	_5	
1	1 7								-
			3)	Cen	MENTING DAT mented from	7A [Rule 287,44(1)] 0 ft to 4.5	ft. No. of Se	cks Used	3
(Use reverse :	side if necessary)				_	Bentonite	ft. No. of Se	cks Used _	
13) TYPE PUMP: N/A						M Enterprise	S		
☐ Turbine ☐ Jet ☐	Submersible		- 40						
Depth to pump bowls, cylinder, jet, et	C. 8		10		RFACE COMPI Specified Surface	LIETION 3 $^{\circ}$ X is solved [Rule	3' surf	ace sla	ďE
N1/4					Specified Steel	Sieeve installed [Rule	207.44(2)(A) 267.44(3)(A)	I	
14) WELL TESTS: N/A Type Test: Pump Be Yield: gpm with		itimated			Pitiess Adapter	Used [Rule 287,44(3)] hative Procedure Used	(B)]		
15) WATER QUALITY: N/A		hrs.	11		TER LEVEL:	N/A ft. below land au	rtaca D	ato	
Did you knowingly penetrate any stra constituents?	tiz which contained undesirable				sien flow	gpm		ate	
	REPORT OF UNDESIRABLE V	WATER"	12	PAC	KERS: N	/A Type)	Depth	
Type of water?	Access to the contract of the							5001	
hereby certify that this well was drilled by me nat failure to complete items 1 thru 15 will res	(or under my supervision) and t ult in the log(s) being returned to	that each and or completion a	all of the and resul	s tatem	tents herein an	n true to the best of my k	nowledge and	f belief. I und	bristane
OMPANY NAME GM Enterp	ríses orprino	w			er's licens	ENO. 3006	m		
PORESS 7098 Mansfield	Highway	Kenne				Texas		7606	0
iligned) (Sifey) or F	71	2019 (2015) (Sim (2015) - 100 (Sim (2015))	(City)			(State)	(Zlp)	
(Licensed V	Vell Driller)		(Signe	4) <u> </u>		(Registered Orllie	r Trainse)	Walter of the last	
lesse attach electric log, chemical analysis, a	and other pertinent information, if	f evallable.		Fr	or TWC use on	nly: Well No.		t on man	

ATTENTION OWNER: Confidentially Privilege Natice on Reverse Side	Y	State WELI	of T L REF		GMI	- 9	P.	Please us for Well Dril O. Box 130. Uri, Texas 7	lera Boa 87
2) LOCATION OF WELL:	te Industries (Name)	ADDR	ESS _	Hw	y . 82 a (Street or R	it I-30 FD)	New Bostor (City)		5501
New Boston	Landfill	miles !	n	Wes	t	direction from Ne	w Boston,	Texas	
				fusc' 24	r, e(G.)		/Tmu	-1	-
Driller must complete the legal descrip Quarter- or Half-Scale Texas County G LEGAL DESCRIPTION: Section No Block I Distance and direction from two in	No Township itersecting section or survey lines	ne map to the	a rocciti.					well on an o	offical

3) TYPE OF WORK (Check):	4) PROPOSED USE (Chie		s Pro			5) DRILLING M	ETHOD (Check):		□ Day
☐ Reconditioning ☐ Plugging	Domestic Indust				iblic Supply	☐ Mud Roter	y 🔲 Air Hammer	☐ Jened	D Bor
6) WELL LOG:			ection		-Watering	☐ Air Rotary	Cable Tool	☐ Other	
Date Drilling:	Dia. (in.) From (ft.)					MPLETION:			
Started 4-17 19 95		To(ft)	h		Open Hole	Straught Wa		lerreamed	
Completed 4-17 1993	Sunace C	.ompieti	lon 1		Gravel Pack				
		***	1	пG	rever Packed	give interval from	-4/2 t	to _2/	<u>/ン</u> た
From (ft.) To (ft.)	Description and color of formation	meterial		I) CA	SING, BLAN	K PIPE, AND WELL S	CREEN DATA.		
0-1 SA	NOYCLAY brow	1001		New		istic, etc.			
	Jos Cilia up	m/ DKh	Dia. (in.)	Dr Used	Perf., Sic	tted, etc.	Setting	(ft.)	Gaçe Cason
3	The Come Get	604	(41.)	N		fig., If commercial	From	То	Screen
8 - 11 54	NAM CLAY LO	d-879,	-	N		creen	5	20	0.00
	1			~	(Reser	0	5	
11-21.5 5/4	ALYCKAY 10	d					\dashv		
						· · · · · · · · · · · · · · · · · · ·	++		
			6) CE	ENTING DA	TA [Rule 287.44(1)]			
				Çen	not betner	TA [Rule 287.44(1)] 0 ft so 4 -	5 ft. No. of Sec	ks Used	3
(Use reverse	side il necessary)				-				
13) TYPE PUMP: N/A	acs it incomes,				5000 000000000000000000000000000000000	Bentonite GM Enterpri	000		
	Submersible			Cen	ented by _	on interpri	ses		
Other			1	0) SUA	FACE COM	PLETION 31	x 3' surfa	ce ela	h ·
Depth to pump bowls, cylinder, jet, e	tc., ft.				Specified Sur	tace Slab Installed (F	Tule 287.44(2)(A)1	010	U
14) WELL TESTS: N/A					Specified Stee	H Sleeve Installed [R	Rule 287.44(3)(A)]		
	laller Djetted DFat					WUsed [Rule 267,44			
Yield: gpm with		thrs.		XX/	Oproved Ale	mative Procedure Us	ed [Rule 287.71]		
57/:		196.	11) WAT	ER LEVEL:	N/A	,		
	2 77 7 2			Static	: lovel	tt. below leave	d surface Da	te	
Did you knowingly penetrate any stri constituents?	ata which contained undesirable			Anna	len flow				
☐ Yes ☐ No If yes, submit	"REPORT OF UNDESIRABLE W	ATER"	12	PAC	KERS:	N/A 1	r		
Type of water?	Depth of strate		-			N/A	Гуре	Depth	
Was a chemical analysis made?]Yes □ No			***************************************					
reby certify that this well was drilled by ma failure to complete Items 1 thru 15 will rea		nat each and : r completion a	eli of the	statem bmittel.	ents herein a	re true to the best of r	ny knowledge and	bellef, I und	erstand
MPANY NAME GM Enterp			WELL	DRILL	ER'S LICEN	BE NO 300	06 M		
	or print)	•							
RESS 7098 Mansfre W		Kenne	(City)	-		Texa		76060	0
	ne V		(~)			(5	State)	(ZIp)	

TWC-0199 (Rev. 05-18-90)

(Licensed Well Driller)

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

Located on map

(Registered Driller Trainee)

For TWC use only: Well No. ...

ATTENTION OWNER: Confidentially Privilege Notice on Reverse Side

State of Texas WELL REPORT

GMP - 10

Texas Water Well Drillers Board P.O. Box 13087 Austin, Texas 78711

1) Owner Westorn United Total					104 E-0100 (0) 11	1
1) OWNER Western Waste Industries ADD	DRESS _	Hwv. 82 a	t 1-30 Ne	W Boston	TV 75-	<i>c</i> .
2) LOCATION OF WELL: County Bowie 1		(Street or RF	D) (0	City)	(State)	(Z.p)
New Boston Landfill miles	e In	west	lirection from New	Boston, 7	l'exac	
	(NE, SW, etc.)		(Town)	
Driller must complete the legal description below with distance and direction from two Cuarter- or Half-Scale Texas County General Highway Map and attach the map to the County General Highway Map and attach the map to the	vo Intersec	ding section or survey	lines, or he must locate	and identify the t	well on an office	31
LEGAL DESCRIPTION:						A.1
Section No Block No Township Distance and direction from two intersecting section or survey lines.	Abı	itrates No.	_			
			Survey Name			
E SEE ATTACHED MAP						
3) TYPE OF WORK (Check): 4) PROPOSED USE (Check): Ga	s Pro	he				
New Well Despening Domestic Dindustrial YTA	Aonitor		5) DRILLING METH	IOD (Check):		Driven
Heconditioning Pluncing	njecton	☐ Public Supply ☐ De-Watering	☐ Mud Rotary		☐ Jemed ₩	Bored
6) WELL LOG: DIAMETER OF HOLE				Cable Tool	Other	
Date Drilling: Dist (in.) Empt (in.)	- ′	BOREHOLE COL				
Started 4 /4 19 7) 8" Surface Complet	ion	☐ Open Hole ☐Gravel Packet	Straight Wall	Unde	rreamed	
Completed	7		Other	11	7	
	1		PAR HIGHARD ILOUD ""	T. ft to	25	t.
From (ft.) To (ft.) Description and color of formation material	87)	CASING, BLANK	PIPE, AND WELL SCR	EFM DATA		
0 - Z CLAYEY SAND, Red-tim	1	New Steel, Plas				
- Jelle 1000	1 1	or Perf., Slots	ed, etc.	Setting (f		açe acang
2-7 CLAY, sed, fur, on.	1111	33.00	;, if commercial	From		teen assing
	1		neen		245 6.	52
7 - 20 CLITYIEY SHAIN Rest-for		10 10	eser	0	415	
			H			
20 . 25 SHALY CLAY, 10d						
	8)	CEMENTING DAT	A [Rule 267,44(1)]			
	-	Cemented from	0 ft. to 498	L No. of Sector	Used3	
(Use reverse side if necessary)	1	Method used B	TL to +	t. No. of Sacks	Used	
13) TYPE PUMP: N/A	1		M Enterprises	2		
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder		Contracting by		-		<u> </u>
Other	10)	SURFACE COMPL		3' surfac	e slab	
Depth to pump bowls, cylinder, jet, etc.,ft.		Specified Surfec	to Slab Installed Rule	287.44/2YA11		
14) WELL TESTS: N/A		☐ Specified Steel !	Sleeve installed [Rule :	287 44/3VAN		
Type Test: Pump Baller Jetted Estimated		LI Pittess Adapter	Used [Rule 287.44(3)(1	B))		
Yield: pm with ft. drawdown after hrs.	·	A.A.A.D.OAG VIBIU	ative Procedure Used	[Rule 287.71]		
15) WATER QUALITY: N/A	11)	WATER LEVEL:	N/A	\$1,919 BRIDGE ST		-
Did you knowingly penetrate any strata which contained undesirable		Static level	ft. below land sur	tace Date		
CON HATTING IN 1		Artiselari flow	gpm.	Date		
TOTAL OF CHUCKHAR F WATER	12)	PACKERS: N/	'A Type		Doort	_
Type of water? Depth of strate Was a chemical analysis made? ☐ Yes ☐ No			.,,,,,		Depth	
						-
ereby certify that this well was drilled by me (or under my supervision) and that each and a at fallure to complete items 1 thru 15 will result in the log(s) being returned for completion a	all of the s	tatements herein are	true to the best of my kn	10Wildos and hal	int tundamen	_
OMPANY NAME GM Enterprises					rei. i unders zanc	3
(Type or pring)	MELL D	RILLER'S LICENSE	NO 3006	ny		
oness 7098 Mansfield Wighway Kenne	alsh		PN			
(Stront or PFD)	(City)		Texas		76060	
gned) her	(Signed)	v	(State)		(Zip)	
(Liosnaed Well Dritter)	(auStud)		(Registered Driller	Traineel		-
ase attach electric log, chemical analysis, and other pertinent information, if available,		E 7-12	Miles and the second second			
C-0199 (Rev. 05-18-90)		FOR TWIC USE ONLY	: Well No.	_ Located on	mep	

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas
WELL REPORT

GMP - //

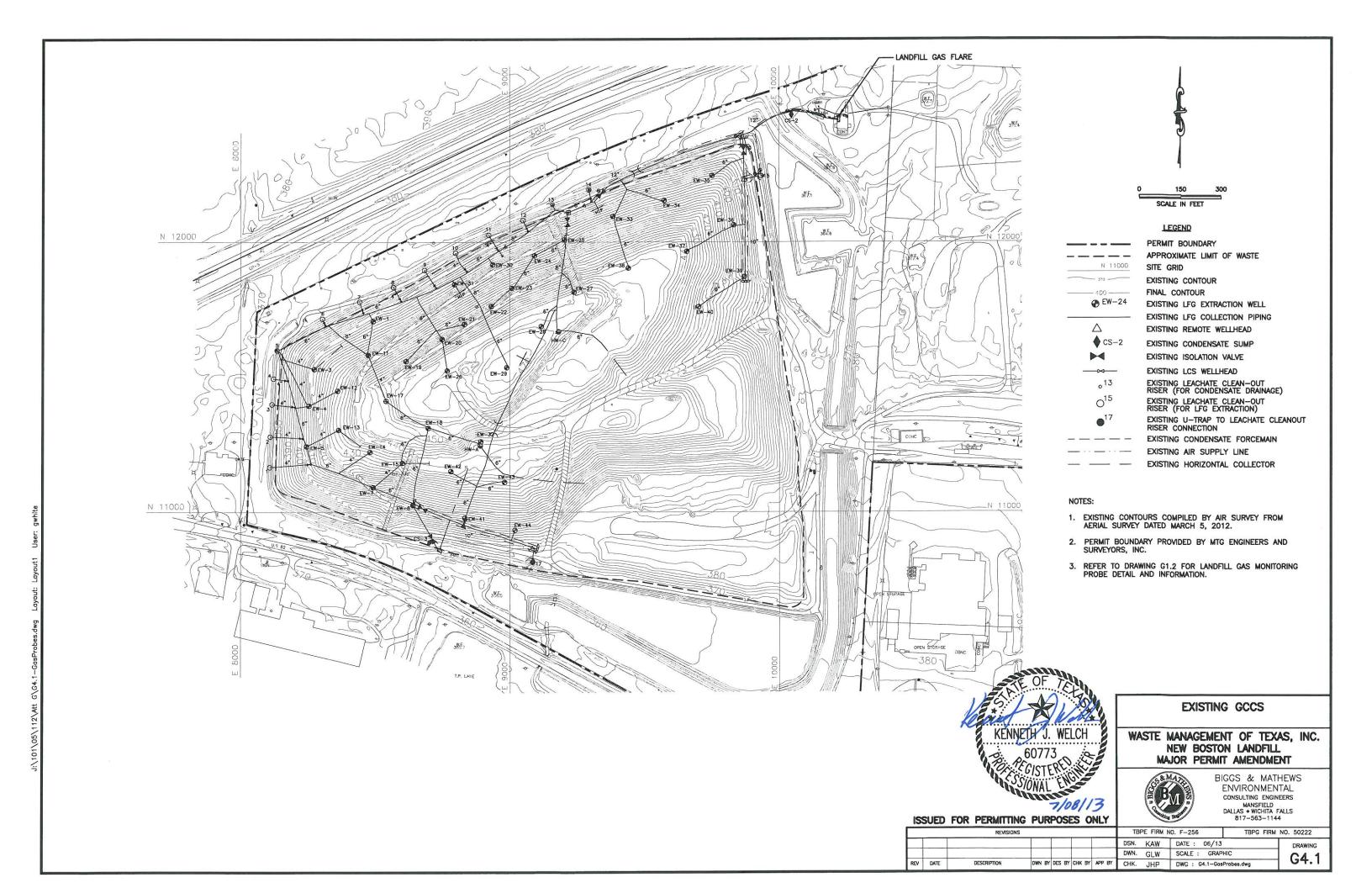
Texas Water Well Drillers Board P.O. Box 13087 Austin Texas 78751

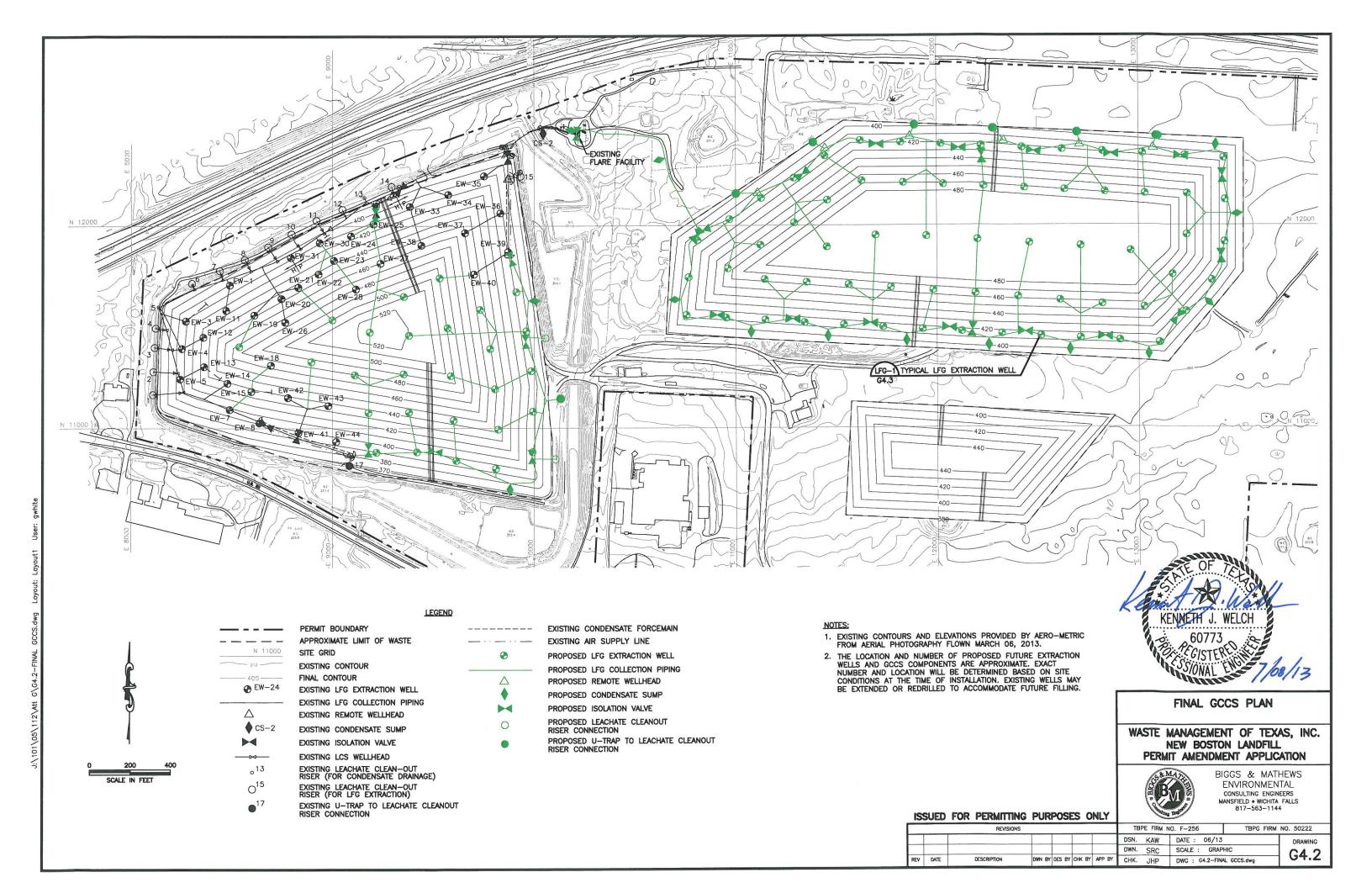
								AU	Rin, Texas 7	8711
	te Industries (Name)	ADDRE	ESS _	Hw	y. 82 at (Street or RF	I-30	Nev (C	W Bosto	n, TX 7	
County Bowle	1	**!! = = 1=		wes	+			• •	X**********	e) (Zp)
New Boston	Landfill	miles in	1	WES	V, etc.)	lrection from	New			
Driller must complete the legal descrip-	too below with distance and disset				.,	****		(Tox	AU)	
Driller must complete the legal descript Quarter- or Half-Scale Texas County G	eneral Highway Man and amuch the	on man in this	ntersect	ng sec	tion or survey	lines, or he mi	hat jocate t	and identify th	e well on an	offical
LEGAL DESCRIPTION:	,	with the dise	rui iii.							
Section No Block f	NoTownship		Abe	madt bl	_					
The same director, inclining the	tersecting section or survey lines _		_ ~~	A SHOT LA	V	Sun	ey Name			
SEE ATTACHED MAP				-		"				
3) TYPE OF WORK (Check):	T	0	-							
1 -	4) PROPOSED USE (Check	Ψ'	Pro	be		5) DRILLI	NG METH	OD (Check):		☐ Driver
☐ Reconditioning ☐ Plugging	Domestic Dindustria			□ Pi	ablic Supply	☐ Mud	Rotary [Ar Hamme	or □ Jetted	Borec
	☐ Imigetion ☐ Test We	MI Inje	ction		s-Wetering	□ Alr F	lotary [Cable Too	Other	
6) WELL LOG:	DIAMETER OF HOLE		7	80	REHOLE COL	-				
Date Drilling: Started 4-14 19 9 Completed 4-14 19 9	Dia. (in.) From (ft.)	To (fL)		_	Open Hole	1000 <u>- 1</u> 0000	ght Wedl	□u _t	derreamed	
Started19	8" Surface CO	ompleti	on	B	Gravel Packet		f	200	morra stried	
Completed				If G	ravel Packed (4.5 .	n 2.	5.
								- C		щ.
From (fL) To (fL) D	Description and color of formation m	lahetar	8)	CA	SING, BLANK	PIPE, AND W	ELL SCR	EEN DATA		
0 - 1 Cil	MEY SAND, tan	16		New	Steel, Plas				- 10-1	
	in 18d form	4311	Dia.	or	Perf., Slott	ed, etc.		Settin	g (ir.)	Gage
1 2 00	y, wa. tun		(in.)	Used	-	g., If commerc		From	То	Screen
5 - 7 54	W. 1 1 Az. 12	1/-	1	N		creen	_	5	25	5.02
4 6	solen Ling, 100	pri	-/-	N	11 (rene		0	5	
7-18 (44	YEY SAND, to		/							
8 2 7/1	71-4 3 A 10D , 40	m-rea	-							
18-25 SHA	Ly CLAY, 100	/								
	1 11	<u>'</u>	8)		MENTING DAT	A [Rule 267	.44(1)]_			2
				Cen	nemied from	O it to				
(Use reverse :	side if necessary)			Mad	nod used E	entonit	1	t. No. of Sa	cks Used	
13) TYPE PUMP: N/A						M Enter		3		
☐ Turbine ☐ Jet ☐	Submersible	_								
Other	-		10)	SUR	FACE COMPI	LETION	3' x 3	s' surf	ace sla	i b
Depth to pump bowls, cylinder, jet, et	c., t.				Specified Surfa	ce Sieb Instell	ed [Rule	287,44(2)(A)	ľ	·· ·
14) WELL TESTS: N/A					Specified Steel	Sleeve Install	ed [Rule	267.44(3)(A)]		
Type Test: Pump B	aller Danie Da				Hitess Adapter	Used [Rule	287.44(3)(B)]		
Yield: gpm with				XX	Approved Alten	native Procedu	are Used	[Rule 267.71	Ì	
	ft. drawdown after	_ hrs.	111	WAT	ER LEVEL:	N/A				
15) WATER QUALITY: N/A			,		cievel	V-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		dans =	•••	
Did you knowingly penetrate any stre	its which constined undesirable				ien flow				A.10	· · · · · · · · · · · · · · · · · · ·
constituents?							дрят.	Ð	n10	
	"REPORT OF UNDESIRABLE WA	ATER"	12)	PAC	KERS: N	/A	Туре		Depth	-
Type of water?		—— <u> </u>								
									Dec 10	-
nereby certify that this well was drilled by me at fallure to complete Items 1 thru 15 will res	(or under my supervision) and the	t each and a	il of the i	Hutern	ents herein an	true to the be	est of my k	nowledge and	bellef. Lund	hatzie
			10000	t m 24665."		-				
OMPANY NAME GM Enterp	rises dr print)		WELL	DRILL	ER'S LICENSI	E NO	3006	n		
7000 34 1/20	1 7	W -	, .			000				
ODRESS /U98 Mansizeld	Ab) //	Kenne					lexas		7606	0
	ook		(City)				(State)	(Zip)	
(Doned)	Well Driller)	-	(Bigned	n _		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
•	•					(Flegis)	ered Drille	Trainee)		
ease attach electric log, chemical analysis, a	and other pertinent information, if a	valimble,		Fo	or TWC use on	ly: Well No		Locate	l no man	and the second
MC 0100 /Pau 05 18 00)						KIPTE			ALLINETY	

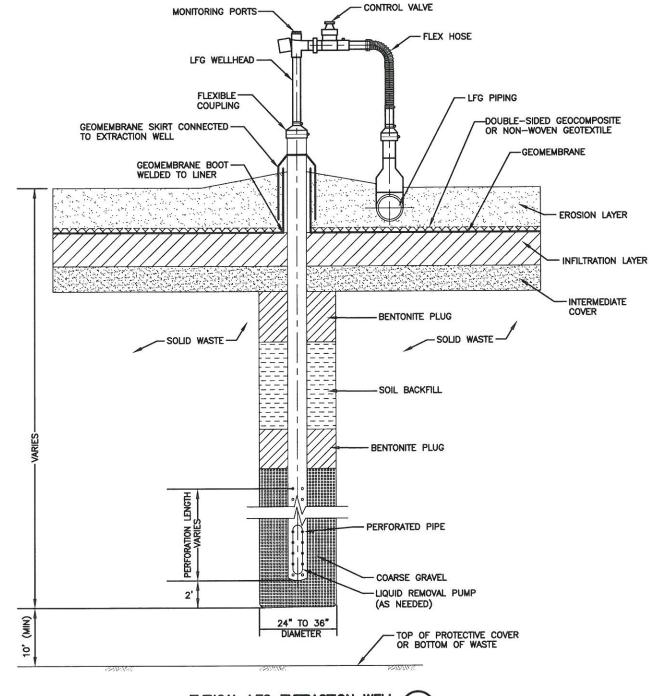
NEW BOSTON LANDFILL

APPENDIX G4 LANDFILL GAS COLLECTION AND CONTROL SYSTEM PLAN

30 TAC §330.371









NOTES:

- 1. ALL SIZES AND DIMENSIONS ARE APPROXIMATE.
- 2. THE EXACT WELLHEAD CONFIGURATION DEPENDS ON MANUFACTURER.
- THE ELEVATION OF THE EXISTING LINER SYSTEM WILL BE VERIFIED PRIOR TO CONSTRUCTION. THE VERIFICATION PROCESS WILL INCLUDE THE REVIEW OF EXISTING AS—BUILT LINER CERTIFICATION INFORMATION.



EXTRACTION WELL DETAIL

WASTE MANAGEMENT OF TEXAS, INC. NEW BOSTON LANDFILL PERMIT AMENDMENT APPLICATION



BIGGS & MATHEWS ENVIRONMENTAL consulting engineers mansfield • wichita falls 817-563-1144

ISSUED FOR PERMITTING PURPOSES ONLY

		REVISIONS			TBPE FIRM N	NO. F-256 TBPG FIR	M NO. 50222		
							DSN. KAW	DATE: 06/13	DRAWING
. 6							DWN. SRC	SCALE : GRAPHIC	CAZ
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	снк. ЈНР	DWG : G4.3-WELL DETAIL.dwg	G4.5

NEW BOSTON LANDFILL

APPENDIX G5 LANDFILL GAS GENERATION MODEL

30 TAC §330.371

KENNETH J. WELCH

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Includes Pages G5-1 through G5-4

LANDFILL GAS GENERATION MODEL

Table G5-1 presents the results of a LFG generation estimate prepared for the New Boston Landfill. The estimate was generated using the U.S. Environmental Protection Agency (EPA) Landfill Gas Emissions Model (LandGEM), Version 3.02. The modeling results reflect the estimated waste quantities accepted over the operating life of the site, including the proposed landfill expansion.

Gas generation parameters used in the model were those established by the EPA in AP-42, Compilation of Air Pollutant Emission Factors, including a methane generation potential (L_o) of 100 cubic meters per megagram of solid waste, and a methane generation constant (k) of 0.04 year⁻¹. For converting methane to LFG, a methane content of 50 percent was assumed.

The results suggest the LFG generation rate will continue to increase with time as more waste is placed in the landfill. Peak LFG generation is expected to be achieved at site closure with a maximum generation rate of approximately 1,726 standard cubic feet per minute in 2053.

TABLE G5-1 Estimated Landfill Gas Generation Rate New Boston Landfill

Year	Waste In Place	Landfill Gas Generation					
1 Gai	(Mg)	m³/yr	scfm				
1968	0	0	0				
1969	54,065	424,834	29				
1970	107,968	831,736	56				
1971	161,710	1,221,412	82				
1972	215,236	1,594,120	107				
1973	268,816	1,952,634	131				
1974	321,914	2,293,301	154				
1975	375,808	2,626,869	176				
1976	431,426	2,960,910	199				
1977	487,824	3,287,971	221				
1978	544,842	3,607,082	242				
1979	602,316	3,917,266	263				
1980	660,594	4,221,609	284				
1981	719,339	4,517,683	304				
1982	778,730	4,807,225	323				
1983	838,715	5,090,080	342				
1984	899,959	5,371,743	361				
1985	961,694	5,646,212	379				
1986	1,024,540	5,918,651	398				
1987	1,087,448	6,180,901	415				
1988	1,150,546	6,434,351	432				
1989	1,214,148	6,681,830	449				
1990	1,277,495	6,917,605	465				
1991	1,341,223	7,147,123	480				
1992	1,405,716	7,373,650	495				
1993	1,470,982	7,597,376	510				
1994	1,537,162	7,819,509	525				
1995	1,604,203	8,039,693	540				
1996	1,671,780	8,255,458	555				
1997	1,740,302	8,470,197	569				
1998	1,808,962	8,677,592	583				
1999	1,877,966	8,879,553	597				
2000	1,947,521	9,077,932	610				
2001	2,017,215	9,269,627	623				
2002	2,086,979	9,454,352	635				

TABLE G5-1 Estimated Landfill Gas Generation Rate New Boston Landfill (Continued)

Year	Waste In Place	Landfill Gas	as Generation			
I Gai	(Mg)	m³/yr	scfm			
2003	2,156,883	9,632,931	647			
2004	2,255,709	10,031,772	674			
2005	2,393,750	10,723,119	720			
2006	2,526,458	11,345,451	762			
2007	2,666,606	12,001,851	806			
2008	2,809,232	12,651,978	850			
2009	2,956,391	13,312,233	894			
2010	3,115,103	14,037,383	943			
2011	3,234,494	14,425,115	969			
2012	3,360,116	14,846,613	998			
2013	3,497,617	15,344,927	1,031			
2014	3,635,118	15,735,406	1,057			
2015	3,773,169	16,114,543	1,083			
2016	3,911,773	16,482,798	1,107			
2017	4,050,931	16,840,614	1,132			
2018	4,190,645	17,188,417	1,155			
2019	4,330,918	17,526,614	1,178			
2020	4,471,753	17,855,599	1,200			
2021	4,613,150	18,175,750	1,221			
2022	4,755,114	18,487,428	1,242			
2023	4,897,645	18,790,983	1,263			
2024	5,040,746	19,086,748	1,282			
2025	5,184,420	19,375,047	1,302			
2026	5,328,668	19,656,189	1,321			
2027	5,473,494	19,930,470	1,339			
2028	5,618,899	20,198,176	1,357			
2029	5,764,885	20,459,583	1,375			
2030	5,911,455	20,714,952	1,392			
2031	6,058,612	20,964,540	1,409			
2032	6,206,357	21,208,588	1,425			
2033	6,354,693	21,447,331	1,441			
2034	6,503,623	21,680,994	1,457			
2035	6,653,148	21,909,794	1,472			
2036	6,803,271	22,133,938	1,487			
2037	6,953,995	22,353,626	1,502			

TABLE G5-1
Estimated Landfill Gas Generation Rate
New Boston Landfill
(Continued)

Year	Waste In Place	Landfill Gas	Generation
rear	(Mg)	m³/yr	scfm
2038	7,105,322	22,569,050	1,516
2039	7,257,254	22,780,395	1,531
2040	7,409,793	22,987,838	1,545
2041	7,562,943	23,191,550	1,558
2042	7,716,706	23,391,695	1,572
2043	7,871,083	23,588,430	1,585
2044	8,026,078	23,781,906	1,598
2045	8,181,693	23,972,270	1,611
2046	8,337,931	24,159,661	1,623
2047	8,494,793	24,344,214	1,636
2048	8,652,283	24,526,058	1,648
2049	8,810,403	24,806,564	1,667
2050	8,969,156	25,081,426	1,685
2051	9,128,543	25,350,501	1,703
2052	9,288,568	25,614,034	1,721
2053	9,425,950	25,689,219	1,726
2054	9,425,950	24,681,930	1,658
2055	9,425,950	23,714,138	1,593
2056	9,425,950	22,784,293	1,531
2057	9,425,950	21,890,908	1,471
2058	9,425,950	21,032,554	1,413
2059	9,425,950	20,207,855	1,358
2060	9,425,950	19,415,494	1,305
2061	9,425,950	18,654,202	1,253
2062	9,425,950	17,922,760	1,204