

Construction Quality Assurance Report

Davidson County MSW Landfill Landfill Gas Collection System Expansion 2013 Lexington, North Carolina

Rec. 8/19/2013 2906MSWLF-2008 &
2906-MSWLF- 1994 DIN 19557
Solid Waste Section

Prepared for:



DTE Energy

DTE Biomass Energy

Davidson Gas Producers, LLC
Ann Arbor, Michigan

August 2013

Prepared by:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



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Construction Quality Assurance Report

**Davidson County MSW Landfill
Landfill Gas Collection System Expansion 2013
Lexington, North Carolina**

Prepared For:
**Davidson Gas Producers, LLC
Ann Arbor, Michigan**

S+G Project No. DTEDC-13-1

Don M. Misenheimer, A.A.I.
Project Scientist

Pieter K. Scheer, P.E.
Project Manager



August 2013

NC LIC. NO. C-0828 (ENGINEERING)

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Landfill Gas Collection System Expansion 2013
Lexington, North Carolina**

Construction Quality Assurance Report

Table of Contents

		<u>Page</u>
1.0	OVERVIEW	1
2.0	PROJECT DESCRIPTION	1
2.1	General	1
2.2	Reference Documents.....	1
2.3	Project Participants.....	2
2.3.1	Owner	2
2.3.2	Davidson County.....	2
2.3.3	Engineer/CQA Engineer	2
2.3.4	Contractor	2
2.3.5	Driller	3
2.3.6	Surveyor.....	3
3.0	SUMMARY OF CONSTRUCTION ACTIVITIES.....	3
3.1	LFG Extraction Well Drilling	3
3.2	LFG Transmission Piping	4
4.0	CQA PROGRAM	5
4.1	Scope of Services	5
5.0	LANDFILL GAS (LFG) COLLECTION SYSTEM CQA	5
5.1	Materials.....	5
6.0	RECORD DRAWINGS.....	5
7.0	PROJECT CERTIFICATION	6

APPENDICES

Appendix A	Approval Letters (DWM and DHHS)
Appendix B	Photographic Log
Appendix C	Daily CQA Reports
Appendix D	Boring Logs
Appendix E	Record Drawings

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1.0 OVERVIEW

This Construction Quality Assurance (CQA) Report has been prepared to document the CQA activities performed during the expansion of a portion of the landfill gas (LFG) collection and control system (GCCS) located on the Phase 2 municipal solid waste (MSW) landfill unit of the Davidson County Landfill facility. The Phase 2 MSW landfill unit of this facility is located on Old US Highway 29 near Lexington, North Carolina and is owned and operated by Davidson County under State Solid Waste Permit No. 29-06. Davidson Gas Producers, LLC (DGP) owns and operates the landfill gas management system under agreement with the County. An approval for the construction was issued by the North Carolina Division of Waste Management (NCDWM) on June 14, 2012 (see **Appendix A**).

2.0 PROJECT DESCRIPTION

2.1 General

This portion of the site's GCCS includes the installation of following components:

- Six (6) LFG extraction wells (EW-1, EW-2, EW-4, EW-4, EW-12, and EW-13);
- Approximately 600 LF of 6-inch diameter LFG transmission piping (HDPE (DR 17)); and
- Approximately 400 LF of 4-inch diameter LFG transmission piping (HDPE (DR 17)).

2.2 Reference Documents

The project was constructed in accordance with the following documents:

Permit Modification – Davidson County Landfill (NC Permit No. 29-06) - Landfill Gas to Energy Project, Phase 2 Header and Initial Collection System:
Includes technical specifications, CQA manual, and permit drawings prepared by S+G and dated April 2012 (Approved by NCDWM on June 14, 2012 (copy of approval letter provided in **Appendix A**)).

Asbestos Work Plan - Landfill Gas Collection System Expansion 2013 and 2014-Davidson County MSW Landfill - Phase 2 - Area 1:
Prepared by Smith Gardner, Inc. (S+G) and dated June, 2012 (Approved by NCDHHS on May 9, 2013 (copy of approval letter provided in **Appendix A**)).

2.3 Project Participants

The following parties were involved in the construction and CQA for the project:

2.3.1 Owner

Davidson Gas Producers, LLG (DGP) (DTE Biomass Energy)
425 S. Main Street
Ann Arbor, MI 48104
Phone: (734) 302-5359

Contact: Mark Hill, Regional Operations Director

2.3.2 Davidson County

Davidson County Integrated Solid Waste Management Department
1242 Old U.S. Highway 29
Thomasville, NC 27360
Phone: (336) 242-2284
Fax: (336) 249-7524

Contacts: Charlie Brushwood, Director
Steven Sink, Landfill Manager

2.3.3 Engineer/CQA Engineer

Smith Gardner, Inc. (S+G)
14 N. Boylan Ave.
Raleigh, NC 27603
Phone: (919) 828-0577
Fax: (919) 828-3899

Contacts: Pieter Scheer, P.E., Project Manager
Don Misenheimer, AAI, Project Scientist

2.3.4 Contractor

Piedmont Industrial Services, Inc. (Piedmont)
1680 Lowery Street
Winston-Salem, NC 27101
Phone: (336) 722-6505
Fax: (336) 722-6529

Contacts: Todd Scott, Project Manager

2.3.5 Driller

Recovery Drilling Services, LLC
PO Box 53/ 157 W. Main Street
Dudley, MA 01571
Phone: (508) 943-1182
Fax: (508) 942-1184

Contact: John Stone

2.3.6 Surveyor

Michael Green Associates, P.A.
4513 West Old Hwy 64
Lexington, NC 27295
Phone: (336) 248-8102

Contacts: Michael Green, PLS, Project Manager

3.0 SUMMARY OF CONSTRUCTION ACTIVITIES

Major elements of the project are discussed below. Photos documenting the construction can be found in **Appendix B** and S+G daily site CQA reports are provided in **Appendix C**.

3.1 LFG Extraction Well Drilling

Recovery Drilling Services, LLC performed the drilling and installation of six (6) LFG extraction wells in the northeast portion of Phase 2, Area 1 between June 4th and 13th, 2013 which was observed by S+G. Prior to drilling, the location and elevation for each well was surveyed by Michael Green Associates, P.A. The survey information was verified and approved by DTE Biomass and S+G to confirm the allowable well depth. The LFG extraction wells were drilled with a 36-inch diameter bucket auger as shown in **Photograph 1** of **Appendix B**. Wells were constructed using eight (8) inch diameter perforated and solid schedule 80 PVC pipe (**Photograph 2**). The top portion of well pipe is solid, including the five (5) feet stickup above ground. The solid pipe below ground was completed with two (2) bentonite seals and soil backfill. Typical well construction was as follows:

1. Approximately one (1) foot of stone (**Photograph 3 and 4**) was placed in the bottom of the well;
2. The pipe casing was then installed (**Photograph 5**), with the bottom capped (with holes drilled in the cap), and the perforated section ended approximately 15 feet below the ground surface;

3. The well was then backfilled with additional stone to approximately two (2) feet above the perforated section, at an approximate depth of 13 feet below ground surface;
4. A geotextile/membrane “donut” ring (**Photograph 6**) was installed directly above the stone;
5. Approximately three (3) feet of soil backfill was added on top of the “donut” ring, followed by an approximate two (2) foot thick bentonite seal, which was hydrated during placement;
6. Soil was backfilled to approximately five (5) feet below ground surface;
7. An approximate two (2) foot thick bentonite seal was added to approximately three (3) feet below ground surface. The bentonite was hydrated during placement;
8. Soil backfill was added to the ground surface.
9. 2” QED wellheads were installed on each of the wells by DTE Biomass.

Boring logs were recorded for each installation and are provided as **Appendix D** of this report. Spoils generated from drilling operations (**Photograph 7 and 8**) were inspected by an accredited asbestos inspector in accordance with the approved Asbestos Work Plan. No suspect asbestos containing materials were observed during this project.

3.2 LFG Transmission Piping

The installation of LFG header piping began the week of June 4, 2013. The piping installation was performed by Piedmont Industrial Services (Piedmont) under contract to Davidson Gas Producers.

Piedmont installed the HDPE transmission pipe and made the corresponding connections in the following locations:

1. Connection of six (6) extraction wells to the collection system by installation of prefabricated wellheads connected to the transmission piping in Phase 2 Area 1 (**Photograph 9**);
2. Installation of new transmission piping to tie into existing header (**Photograph 10**) using electrofusion couplings;
3. Installing new transmission piping from EW-13 to remote access point at EW-12 (**Photograph 11 and 12**); and
4. Installation of a road crossing for transmission piping on the southern portion of the site (**Photograph 13 and 14**).

All of the piping installation was performed by Piedmont in June 2013. The installation of the transmission system in Phase 2 Area 1 included approximately 1,000 feet of transmission header piping.

4.0 CQA PROGRAM

4.1 Scope of Services

In satisfying the requirements of the site's approved CQA Manual, the following activities were performed:

- Observation and documentation of the installation of system piping and appurtenances.
- Review/preparation of record drawings.
- Preparation of the final CQA report.

5.0 LANDFILL GAS (LFG) COLLECTION SYSTEM CQA

5.1 Materials

S+G observed the landfill gas collection system installed materials installed by Piedmont. The selected materials included the following:

HDPE Pipe/Fittings:	Vacuum/Gravity Piping: Performance Pipe - IPS energy black pe3408/3608 (DR 17) - 4" & 6" Diam. Electrofusion Fittings: Friatec - 6" and 6"x 8"
Road Crossing	CMP: 16 gauge - 18" Diameter Electrofusion Fittings: Friatec - 12" Diameter
LFG Extraction Wells	PVC Pipe and Fittings: Provided by DTE Biomass- 8" Diameter, Schedule 80 LFG Wellheads: QED ORP 215 Wellheads (2" orifice plate)

6.0 RECORD DRAWINGS

The following record (as-built) drawing depicting the construction of the Landfill Gas Collection System Expansion 2013 can be found in **Appendix E**:

- Landfill Gas Collection System Expansion 2013 (Figure 1), prepared by Smith Gardner Inc. (As-built information provided by Michael Green Associates, P.A.).

7.0 PROJECT CERTIFICATION

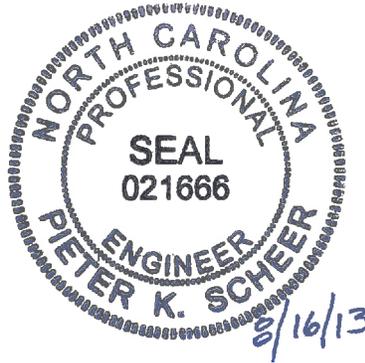
Based on the observations and results of the CQA program documented herein, it is my professional opinion that the construction of the Landfill Gas Collection System Expansion 2013 of the Davidson County MSW Landfill was completed in accordance with the following:

- i. The Project CQA Manual;
- ii. The conditions of the Permit;
- iii. The requirements of 15A NCAC 13B.1624; and
- iv. Acceptable engineering practices.

SMITH GARDNER, INC.



Pieter K. Scheer, P.E.
Project Manager



Appendix A

Approval Letters (DWM and DHHS)

**Construction Quality Assurance Report
Davidson Gas Producers, LLC - Landfill Gas Collection System Expansion 2013
Davidson County, North Carolina**

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North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

June 14, 2012

Charles Brushwood
Davidson County Integrated Solid Waste
220 Landfill Road
Lexington, NC 27292

Re: Authorization for Constructing Landfill Gas Header System
Davidson County MSW Phase 2 Lined Landfill
Davidson County, North Carolina
Permit No. 29-06, DIN 16746

Dear Mr. Brushwood:

The Solid Waste Section (SWS) of the Division of Waste Management (Section) has reviewed your Application entitled;

Landfill Gas to Energy Project, Phase 2 Header and Initial Collection System, Davidson County Phase 2 Landfill. Prepared by: Richardson Smith Gardner and Associates, Inc., Raleigh, NC. April 23, 2012. DIN 16745.

In accordance with GS 130A-295.8(e), the Section has found it to be complete. A determination of completion means that the application includes all required components but does not mean that the required components provide all the information that is required for the Section to make a decision on the application

Therefore, since all required components were included and they were found acceptable, the SWS hereby approves the construction of this project.

Please note that this authorization for installing the header and initial collection system does not remove any responsibilities from Davidson County to comply with any permit condition, or any other local, state or federal regulation.

Mr. Charles Brushwood
June 14, 2012
Page 2 of 2

The Solid Waste Section will be glad to assist the County in the successful completion of this LFGCCS project, if you have any questions regarding the matters described above, please contact John Murray at (704) 235-2163 or by email john.murray@ncdenr.gov.

Sincerely,

Edward F. Mussler, P.E., Supervisor
Permitting Branch
Solid Waste Section

cc: Pieter K. Scheer, P.E., Richardson Smith Gardner & Associates
Joan A. Smyth, P.G. Richardson Smith Gardner & Associates
John Murray, P.E., SWS
Hugh Jernigan, SWS
Central File



North Carolina Department of Health and Human Services
Division of Public Health

Pat McCrory
Governor

Aldona Z. Wos, M.D.
Ambassador (Ret.)
Secretary DHHS

Laura Gerald, M.D., M.P.H.
State Health Director

RECEIVED MAY 10 2013

May 9, 2013

Mr. Don Misenheimer
Smith and Gardner
14 N. Boylan Avenue
Raleigh, NC, 28603

Subject: Landfill Gas Collection at Davidson County MSW Landfill
Davidson County

Dear Mr. Misenheimer:

We have completed our review of your plan for the landfill gas collection at the subject facility and have no further comments. Please adhere to the plan as submitted to our office on May 2, 2013. Should there be modifications to the plan that will impact asbestos, please inform us of the changes, in writing, before implementing such changes.

If you have any questions feel free to contact me at (919) 707-5972.

Sincerely,

Jeffery W. Dellinger
Industrial Hygiene Consultant
Health Hazards Control Unit

JWD/jwd

cc: Ed Norman, Program Manager
Don Chaney, IH Supervisor
Pat Backus, NC DSWM

www.ncdhhs.gov • www.publichealth.nc.gov
Tel 919-707-5950 • Fax 919-870-4808

Location: 5505 Six Forks Road • Raleigh, NC 27609
Mailing Address: 1912 Mail Service Center • Raleigh, NC 27699-1912
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Appendix B

Photographic Log

**Construction Quality Assurance Report
Davidson Gas Producers, LLC - Landfill Gas Collection System Expansion 2013
Davidson County, North Carolina**

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Client Name: Davidson Gas Producers, LLC		Site Location: Davidson County, NC	Project No. DTEDC 13-1
Photo No. 1	Date: 6/4/13		
Direction Photo Taken: Southwest			
Description: Drill rig with 36" bucket auger preparing to begin drilling at EW-13.			

Photo No. 2	Date: 6/4/13	
Direction Photo Taken: N/A		
Description: 8" perforated and solid Schedule 80 PVC pipe used for LFG extraction well construction.		

Client Name: Davidson Gas Producers, LLC		Site Location: Davidson County, NC	Project No. DTEDC 13-1
Photo No. 3	Date: 6/4/13		
Direction Photo Taken: N/A			
Description: Close-up of stone stockpile.			

Photo No. 4	Date: 6/4/13		
Direction Photo Taken: North			
Description: View of stone being added EW-12 boring during well construction.			

Client Name: Davidson Gas Producers, LLC		Site Location: Davidson County, NC	Project No. DTEDC 13-1
Photo No. 5	Date: 6/4/13		
Direction Photo Taken: Southeast			
Description: View of 8' PVC well pipe being lowered into boring hole of EW-13.			

Photo No. 6	Date: 6/4/13	
Direction Photo Taken: N/A		
Description: View of geotextile donut being installed during EW-12 construction.		

Client Name: Davidson Gas Producers, LLC		Site Location: Davidson County, NC	Project No. DTEDC 13-1
Photo No. 7	Date: 6/4/13		
Direction Photo Taken: N/A			
Description: View of excavated waste during inspection for asbestos containing materials.			

Photo No. 8	Date: 6/4/13		
Direction Photo Taken: East			
Description: One of the asbestos signs and partial fencing demarcating the Asbestos Work Area.			

Client Name: Davidson Gas Producers, LLC		Site Location: Davidson County, NC	Project No.: DTEDC 13-1
Photo No.: 9	Date: 8/2/12		
Direction Photo Taken: North			
Description: Installed 2" QED wellhead and hose for connection to the lateral piping.			

Photo No.: 10	Date: 6/13/13		
Direction Photo Taken: N/A			
Description: EW-3 lateral tie-in to LFG header.			

Client Name: Davidson Gas Producers, LLC	Site Location: Davidson County, NC	Project No. DTEDC 13-1
--	--	----------------------------------

Photo No. 11	Date: 6/12/13	
Direction Photo Taken: Northwest		
Description: View lateral/well connection at EW-13. Lateral travels north to remote wellhead connect near EW-12 (see Photograph 12).		

Photo No. 12	Date: 6/13/13	
Direction Photo Taken: Southeast		
Description: View of EW-12 and the remote wellhead connection for EW-13. EW-13 can be seen in the distance as a stick-up with a white PVC cap.		

Client Name:
Davidson Gas Producers, LLC

Site Location:
Davidson County, NC

Project No.
DTEDC 13-1

Photo No.
13

Date:
6/13/13

Direction Photo Taken:

North

Description:

Installation of the corrugated piping to encase the transmission piping for the installed road crossing to the south of Phase 2 Area 1.



Photo No.
14

Date:
6/13/13

Direction Photo Taken:

N/A

Description:

Installation of the corrugated piping to encase the transmission piping for the installed road crossing to the south of Phase 2 Area 1.



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Appendix C

Boring Logs

**Construction Quality Assurance Report
Davidson Gas Producers, LLC - Landfill Gas Collection System Expansion 2013
Davidson County, North Carolina**

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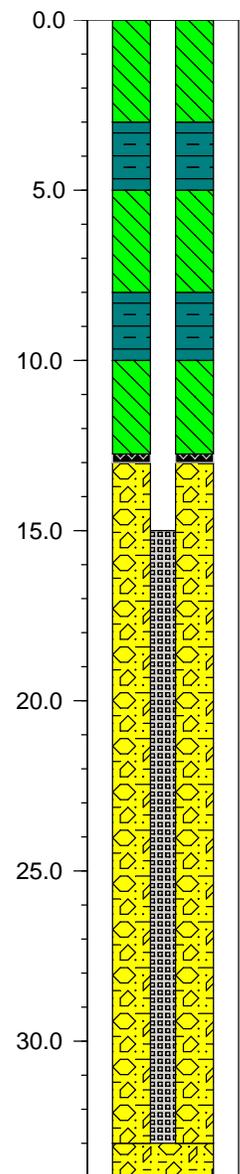
PROJECT NAME: **Landfill GCCS Expansion**
 LOCATION: **Davidson County MSW Landfill**
 DRILLING CO: **B&M - Product Recovery**
 DRILLING METHOD: **36" Bucket Auger**
 FIELD PARTY: **Cory Belvins**
 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/5/13** COMPLETED: **6/5/13**

TOTAL DEPTH: **34**
 TOP OF CASING ELEV.: GROUND ELEV.:
 NORTHING: **0** EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------

0.0				Bucket Auger	Soil fill			
5.0					Household waste and textiles. Low degradation. Dry.			
10.0								
15.0					Household waste with some textiles. Soil mix from 13'-15'. Low degradation. Dry.			
20.0								
25.0								
30.0					Household waste, textiles and soil. Medium degraded. Dry. >100deg.			



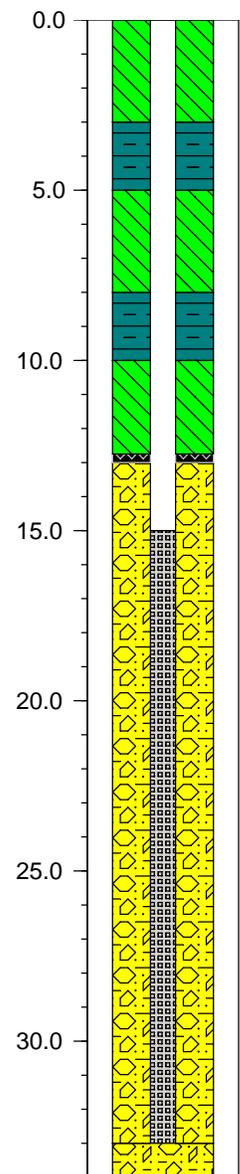
PROJECT NAME: **Landfill GCCS Expansion**
 LOCATION: **Davidson County MSW Landfill**
 DRILLING CO: **B&M - Product Recovery**
 DRILLING METHOD: **36" Bucket Auger**
 FIELD PARTY: **Cory Belvins**
 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/5/13** COMPLETED: **6/5/13**

TOTAL DEPTH: **34**
 TOP OF CASING ELEV.: GROUND ELEV.:
 NORTHING: **0** EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------

0.0				Bucket Auger	Soil fill	
5.0					Household waste, tire, plastics. Low degradation. Dry.	
10.0					Household waste with some textiles. Soil mix from 13'-15'. Low degradation. Dry.	
15.0					Household waste. Medium degraded. Dry. 87deg.	
20.0						
25.0						
30.0						



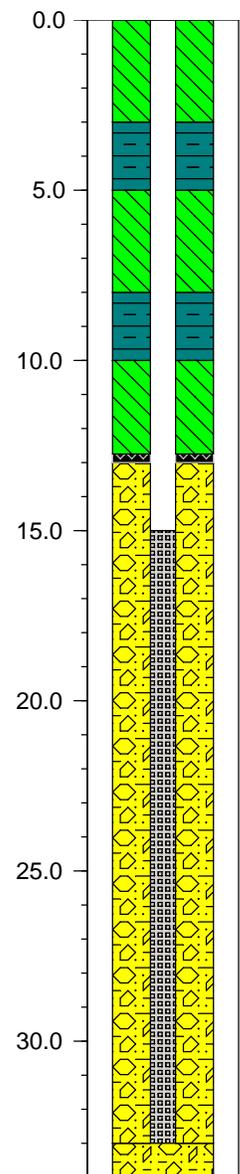
PROJECT NAME: **Landfill GCCS Expansion**
 LOCATION: **Davidson County MSW Landfill**
 DRILLING CO: **B&M - Product Recovery**
 DRILLING METHOD: **36" Bucket Auger**
 FIELD PARTY: **Cory Belvins**
 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/5/13** COMPLETED: **6/5/13**

TOTAL DEPTH: **34**
 TOP OF CASING ELEV.:
 NORTHING: **0** GROUND ELEV.:
 EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------

0.0				Bucket Auger	Soil fill	
5.0					Household waste. Low degradation. Dry.	
10.0					Household waste. Plastics and textiles from 17'-20'. Low to medium degradation. Dry.	
15.0						
20.0					Household waste. Less organic textile mix. Medium degraded. Dry. 88deg.	
25.0						
30.0						



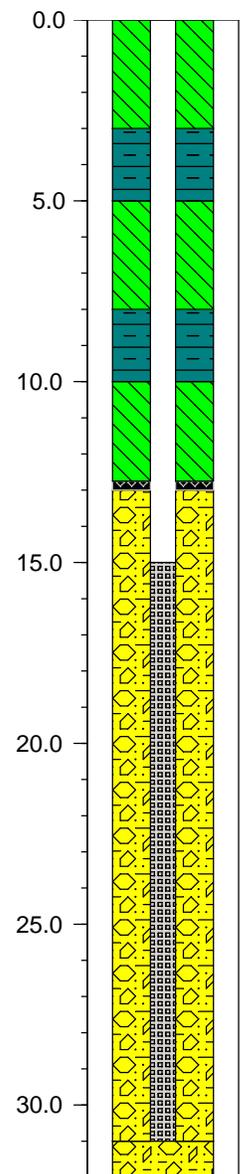
PROJECT NAME: **Landfill GCCS Expansion**
 LOCATION: **Davidson County MSW Landfill**
 DRILLING CO: **B&M - Product Recovery**
 DRILLING METHOD: **36" Bucket Auger**
 FIELD PARTY: **Cory Belvins**
 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/5/13** COMPLETED: **6/5/13**

TOTAL DEPTH: **32**
 TOP OF CASING ELEV.:
 NORTHING: **0** GROUND ELEV.:
 EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------

0.0				Bucket Auger	Soil fill	
5.0					Household waste, tires and plastics. Low degradation. Dry.	
10.0					Household waste. Low to medium degradation. Dry.	
15.0						
20.0					Household waste. Medium degraded. Dry. 84deg.	
25.0						
30.0						

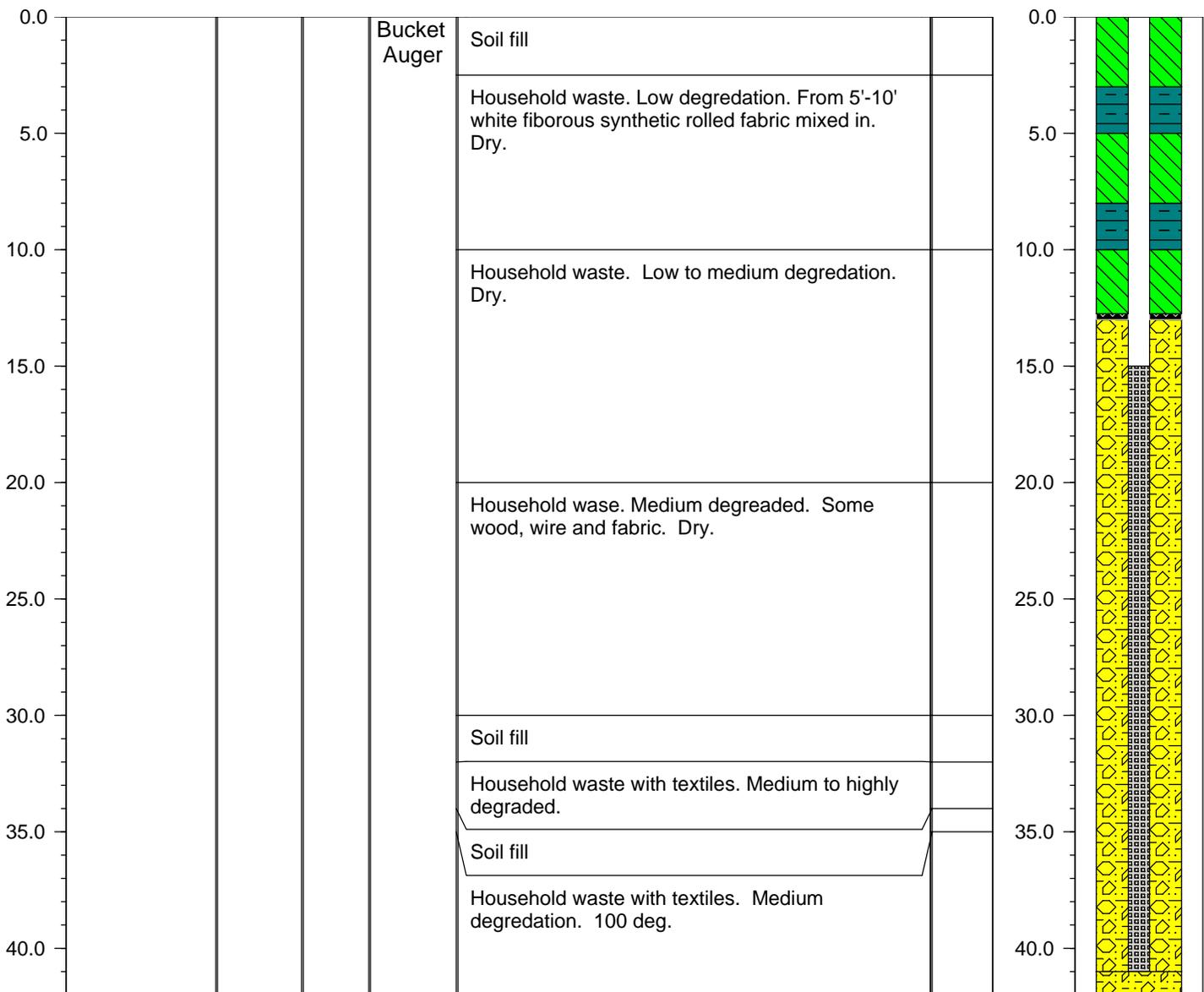


PROJECT NAME: **Landfill GCCS Expansion**
 LOCATION: **Davidson County MSW Landfill**
 DRILLING CO: **B&M - Product Recovery**
 DRILLING METHOD: **36" Bucket Auger**
 FIELD PARTY: **Cory Belvins**
 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/4/13** COMPLETED: **6/4/13**

TOTAL DEPTH: **42**
 TOP OF CASING ELEV.: GROUND ELEV.:
 NORTHING: **0** EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------

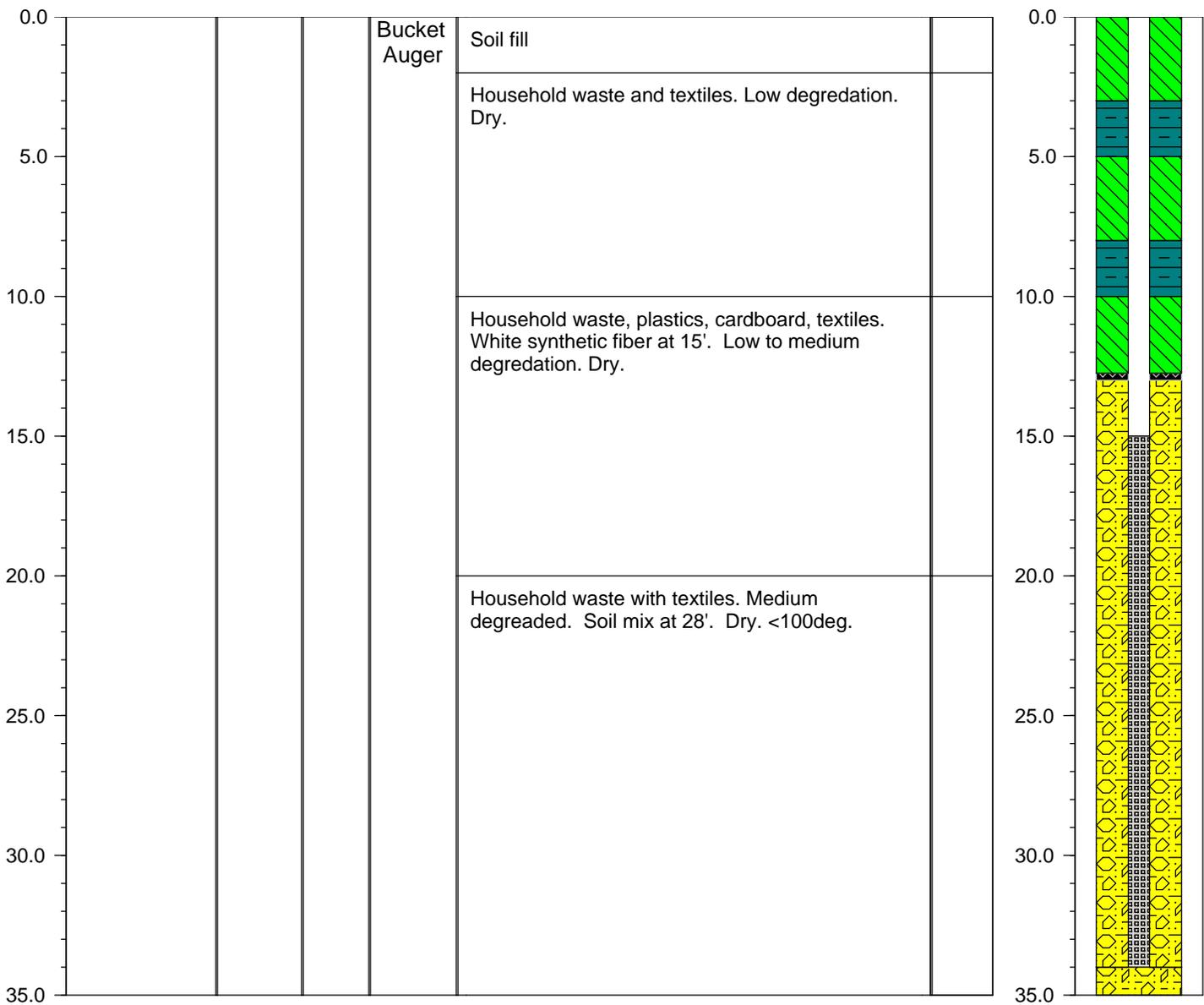


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 GEOLOGIST: **D. Misenheimer**
 DATE BEGUN: **6/4/13** COMPLETED: **6/4/13**

TOTAL DEPTH: **35**
 TOP OF CASING ELEV.: GROUND ELEV.:
 NORTHING: **0** EASTING: **0**

STATIC WATER LEVEL (from TOC)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
---------------	----------------------	-----------------	--------------------	--------------	-------------	-----------	---------------	----------------------



Appendix D

Daily CQA Reports

**Construction Quality Assurance Report
Davidson Gas Producers, LLC - Landfill Gas Collection System Expansion 2013
Davidson County, North Carolina**

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DAILY CQA REPORT

PROJECT INFORMATION		
Project Name: Davidson County LFG Expansion	S+G Project No.: DTEDC 13-1	
Client Name: DTE	Client Contact(s): Mark Hill	
Site Location:	(734) 395-2452	
General Contractor: B&M Drilling (Product Recovery / Piedmont Industrial	General Contractor's Rep.: Larry Blevins (B&M), Todd Scott (PIS)	
Subcontractor(s):	Subcontractor's Rep.(s):	
DAILY INFORMATION		
S+G Representative(s) Time(s) on Site:		
Rep: Don Misenheimer	Rep:	Rep:
Arrived: 7:00 AM	Arrived:	Arrived:
Departed: 5:30 PM	Departed:	Departed:
Weather Conditions:	Ground Conditions:	Temperature:
Sunny, Slightly Cloudy.	Firm, slightly moist	High: upper 80's Low:
Contractor's Equipment:		
Drill Rig, Skid-Steer Loader, Ditch Excavator, HDPE Pipe Cutting and Welding equipment, Gas-Powered Generator		
Contractor's Personnel: Two Personnel		
Materials Received:		
Material(s)	Description	
Visitor Information:		
Firm Name(s)	Representative's Name	Representative's Title
Important Conversation(s):		
Conversation(s)	Description	
Description of Daily Activities and Events:		
<ul style="list-style-type: none"> S+G arrived on site at 7am and met with DTE (Mark Hill, and Ken) and B&M (driller) at approximately 7:30am. Locations and construction of wells was discussed. It was determined that EW-13,12,and 4 would be drilled first due to damp conditions. Todd Scott (Piedmont) then arrived on-site with two (2) helpers. They will be performing trenching, welding pipe, aswell as, performing the duties of drillers helpers. Discussions with Todd Scott included that the fact that DTE had decided to move EW-12 and 13 minimal distances from the staked locations in order to acheive fall. By 12pm drilling had not yet started. I gave my copies of the project drawings to the driller as he had none. The asbestos work area is set up. Drilling commenced at EW-12 at 1:25 pm. Stone was observed not to be all No. 3 stone as specified. The stone is clean. DTE states that they are not concerned about the stone unless it is "super dirty". Drilling and well completion was performed at EW 12 and EW-13 today. No suspect ACM was observed today. 		
Prepared By: DMM	Date : 6/5/13	Reviewed By: PKS

DAILY CQA REPORT

PROJECT INFORMATION		
Project Name: Davidson County LFG Expansion		S+G Project No.: DTEDC 13-1
Client Name: DTE	Client Contact(s): Mark Hill (734) 395-2452	
Site Location:	General Contractor's Rep.: Larry Blevins (B&M), Todd Scott (PIS)	
General Contractor: B&M Drilling (Product Recovery / Piedmont Industrial)	Subcontractor's Rep.(s):	
Subcontractor(s):		
DAILY INFORMATION		
S+G Representative(s) Time(s) on Site:		
Rep: Don Misenheimer	Rep:	Rep:
Arrived: 7:00 AM	Arrived:	Arrived:
Departed: 5:30 PM	Departed:	Departed:
Weather Conditions: Sunny, Slightly Cloudy.	Ground Conditions: Firm, slightly moist	Temperature: High: upper 80's Low:
Contractor's Equipment: Drill rig, Skid-Steer Loader, Ditch Excavator, HDPE Pipe Cutting and Welding equipment, Gas-Powered Generator		
Contractor's Personnel: Two Personnel		
Materials Received:		
Material(s)	Description	
Visitor Information:		
Firm Name(s)	Representative's Name	Representative's Title
Important Conversation(s):		
Conversation(s)	Description	
Description of Daily Activities and Events:		
<ul style="list-style-type: none"> S+G arrived on site at 7am and drilling begins at EW-4. The driller informs me that there is not enough bentonite to finish the project. I contact Mark Hill (DTE) and he finds nine (9) bags on site that the drillers can use. The well seals are changed to 12 bags on the bottom seal and eight (8) bags on the top seal. The top seal is two (2) bags of hole plug and six (6) bags of granular bentonite. Drilling and well completion was performed at EW-4, EW-3, EW-2, and EW-1 today. <p>It is determined that since the drilling is complete and no trenching in waste is slated to be performed, S+G will not be on site for the next few days. S+G will coordinate with Todd Scott in order to be on site as the project progresses for CQA and documentation purposes.</p> <ul style="list-style-type: none"> No suspect ACM was observed today. 		
DMM	Date : 6/5/13	Reviewed By: PKS

DAILY CQA REPORT

PROJECT INFORMATION		
Project Name: Davidson County LFG Expansion		S+G Project No.: DTEDC 13-1
Client Name: DTE	Client Contact(s): Mark Hill	
Site Location:	(734) 395-2452	
General Contractor: Piedmont Industrial		General Contractor's Rep.: Todd Scott
Subcontractor(s):		Subcontractor's Rep.(s):
DAILY INFORMATION		
S+G Representative(s) Time(s) on Site:		
Rep: Alexander C. Kirchoff	Rep:	Rep:
Arrived: 8:16 AM	Arrived:	Arrived:
Departed: 10:00 AM	Departed:	Departed:
Weather Conditions:	Ground Conditions:	Temperature:
Sunny, Slightly Cloudy.	Firm, slightly moist	High: 88 Deg. F
		Low: 71 Deg. F
Contractor's Equipment:		
Skid-Steer Loader, Ditch Excavator, HDPE Pipe Cutting and Welding equipment, Gas-Powered Generator		
Contractor's Personnel: Two Personnel		
Materials Received:		
Material(s)	Description	
Visitor Information:		
Firm Name(s)	Representative's Name	Representative's Title
Important Conversation(s):		
Conversation(s)	Description	
Todd Scott: Work Completed, Future Work	Mr. Todd Scott described installing the LFG extraction well heads and laterals completed up to approximately 9:35 AM on this day. Mr. Scott next went over his work for the remainder of the project; finalize remaining welds, bury remaining exposed laterals, and finish tie-ins to the LFG Header.	
Description of Daily Activities and Events:		
<ul style="list-style-type: none"> Arrived and walked the area of concern: EW-13 to EW-1 and EW-1 to EW-4 and along the laterals connecting these well heads to the LFG Header Photographed laterals, connections, approaches to well heads, and the site of tie-ins to the header. Discussed project work to date, work to be completed on this day, and future work with General Contractor, Todd Scott. Updated Mr. Pieter Scheer and Mr. Don Misenheimer on the status of the project and future plans for the area of concern. Made a plan to return tomorrow to observe and photograph the tie-ins to the LFG Header. 		
Prepared By: ACK	Date : 6/15/13	Reviewed By: PKS

DAILY CQA REPORT

PROJECT INFORMATION		
Project Name: Davidson County LFG Expansion		S+G Project No.: DTEDC 13-1
Client Name: DTE		Client Contact(s): Mark Hill
Site Location:		(734) 395-2452
General Contractor: Piedmont Industrial		General Contractor's Rep.: Todd Scott
Subcontractor(s):		Subcontractor's Rep.(s):
DAILY INFORMATION		
S+G Representative(s) Time(s) on Site:		
Rep: Alexander C. Kirchhoff	Rep:	Rep:
Arrived: 7:00 AM	Arrived:	Arrived:
Departed: 2:45 PM	Departed:	Departed:
Weather Conditions: Sunny, Slightly Cloudy.	Ground Conditions: Not muddy, Slightly moist, Firm	Temperature: High: 91 Deg. F Low: 63 Deg. F
Contractor's Equipment: Skid-Steer Loader, Ditch Excavator, HDPE Pipe Cutting and Welding equipment, Gas-Powered Generator		
Contractor's Personnel: Two Personnel		
Materials Received:		
Material(s) Electro-Fusion Couplers	Description 12", 8", 6" diameter couplers necessary for roadway crossing and y-joint tie-in respectively	
Visitor Information:		
Firm Name(s)	Representative's Name	Representative's Title
Important Conversation(s):		
Conversation(s) Todd Scott: Work Completed, Future Work	Description Mr. Todd Scott explained their work the day before; lateral to header tie-ins from EW-2, EW-3, and EW-4 and placing covering soils over the pipe. Mr. Scott then gave me an overview of the work he plans to complete; y-joint below EW-1 completed, roadway crossing exposed, and remaining pipe covered. Lastly, Mr. Scott expressed a desire to complete the roadway crossing if the 12" electro-fusion coupler he ordered arrived by 1 PM.	
Description of Daily Activities and Events:		
<ul style="list-style-type: none"> Arrived on-site at 0727 and walked the LFG expansion area to observe work completed since 12 June 2013. Photographed tie-ins to the header, completed remote wellhead connection for EW-13, and the uncompleted y-joint below EW-1. Discussed project work to date, work to be completed on this day, and future work with General Contractor, Todd Scott. Updated Mr. Pieter Scheer and Mr. Don Misenheimer on the status of the project and future plans for the area of concern. I was advised to stay on site to observe the y-joint installation and roadway crossing encasement, if work begins today. Excavation on roadway crossing completed at approximately 0925. Y-joint tie-in installed completely at approximately 1125. Covering all remaining LFG pipe completed immediately after Y-joint installation. Roadway crossing encasement completed at approximately 1425. Called and updated Mr. Pieter Scheer on the construction and progress of the day. Left site at 1433 		
Prepared By: ACK	Date : 6/15/13	Reviewed By: PKS

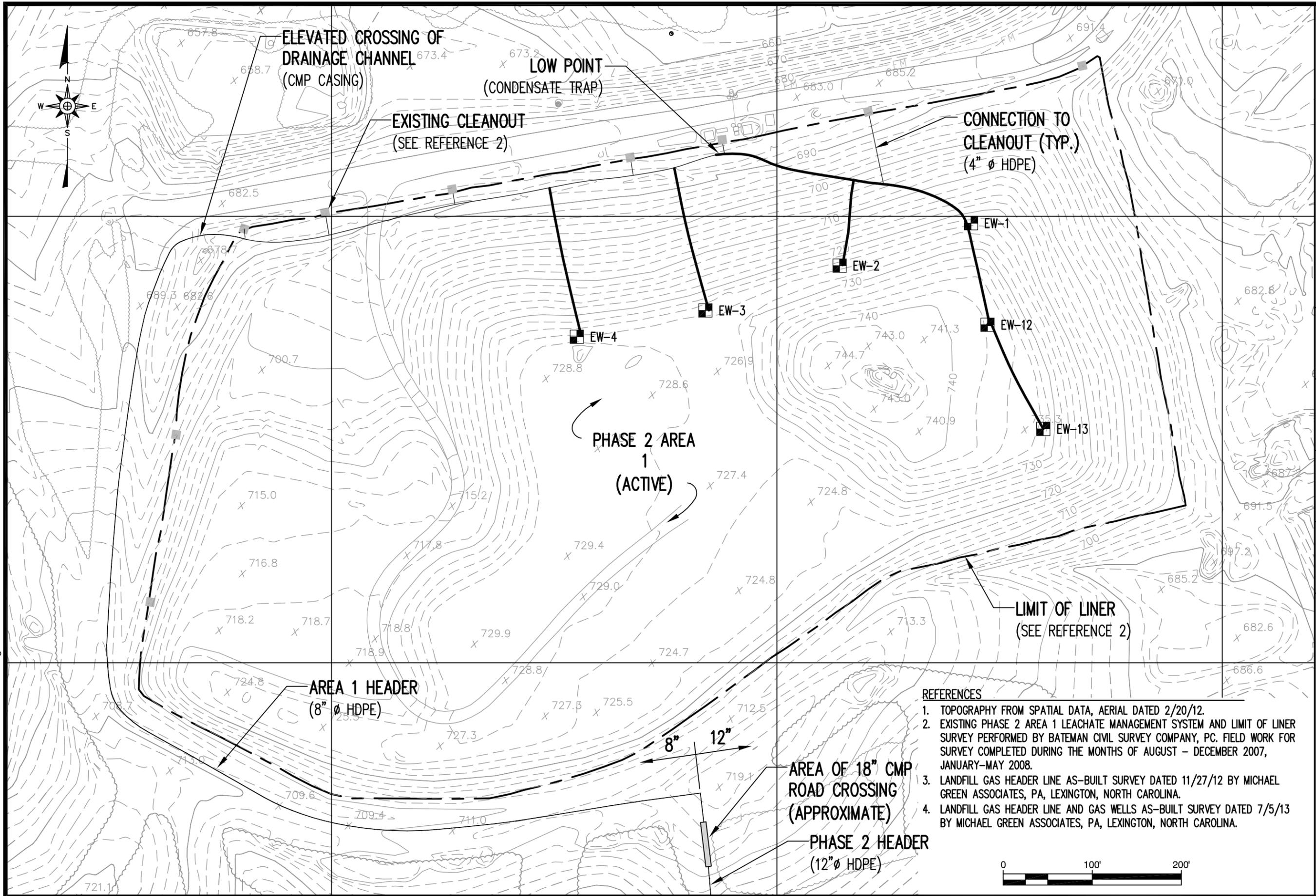
Appendix E

Record Drawings

**Construction Quality Assurance Report
Davidson Gas Producers, LLC - Landfill Gas Collection System Expansion 2013
Davidson County, North Carolina**

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REFERENCES

1. TOPOGRAPHY FROM SPATIAL DATA, AERIAL DATED 2/20/12.
2. EXISTING PHASE 2 AREA 1 LEACHATE MANAGEMENT SYSTEM AND LIMIT OF LINER SURVEY PERFORMED BY BATEMAN CIVIL SURVEY COMPANY, PC. FIELD WORK FOR SURVEY COMPLETED DURING THE MONTHS OF AUGUST - DECEMBER 2007, JANUARY-MAY 2008.
3. LANDFILL GAS HEADER LINE AS-BUILT SURVEY DATED 11/27/12 BY MICHAEL GREEN ASSOCIATES, PA, LEXINGTON, NORTH CAROLINA.
4. LANDFILL GAS HEADER LINE AND GAS WELLS AS-BUILT SURVEY DATED 7/5/13 BY MICHAEL GREEN ASSOCIATES, PA, LEXINGTON, NORTH CAROLINA.



DAVIDSON COUNTY GAS PRODUCERS DAVIDSON COUNTY LANDFILL LANDFILL GAS COLLECTION SYSTEM EXPANSION 2013		APPROVED: K.C.B.	APPROVED: P.K.S.	SCALE: AS SHOWN	FIGURE NO. 1	PREPARED BY: SMITH+GARDNER NC LIC. NO. C-0828 (ENGINEERING)
		DATE: Aug 2013	PROJECT NO. DTEDC 13-1	FILENAME: DTE-B0748		14 N. Boylan Avenue, Raleigh NC 27603 919.828.0577

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