

2011 GCCS – Phase 1 Construction Certification Report for the Lorain County II Landfill

Prepared for



Lorain County, Oberlin, Ohio

August 2011

Revised December 2011

140980.600

**Brown AND
Caldwell**

4700 Lakehurst Court, Suite 100

Columbus, Ohio 43016

Notarized Statement

"I, Chris Jaquet, certify that this 2011 GCCS - Phase 1 Construction Certification Report for the Republic Services, Inc. Lorain County II Landfill in Lorain County, Oberlin, Ohio and all attachments were prepared in accordance with the provisions and requirements of Ohio Administrative Code (OAC) Rule 3745-27-08(H) effective August 2003. Based on my inquiry of the person or persons who were directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Signature

9/6/11

Date

Chris Jaquet

Name

Area Environmental Manager

Title

On this, the 6th day of September 2011, before me, a notary public, the above signed person, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.



Notary Public

exp 4.26.12

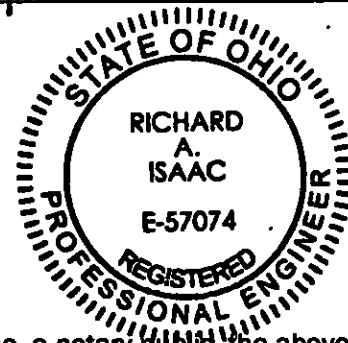
Engineer's Certification

"I, Richard A. Isaac, being a Registered Professional Engineer in the State of Ohio, PE No. E-57074, certify under penalty of law that this 2011 GCCS - Phase 1 Construction Certification Report for the Republic Services, Inc. Lorain County II Landfill in Lorain County, Oberlin, Ohio and all attachments were prepared by me or under my direction or supervision in accordance with the provisions and requirements of Ohio Administrative Code (OAC) Rule 3745-27-08(H) effective August 2003 and in accordance with good engineering practices. I have personally visited and examined the facility and am familiar with the information submitted in this document and based on my inquiry of the person or persons directly responsible for preparing this 2011 GCCS - Phase 1 Construction Certification Report, the information submitted in the 2011 GCCS - Phase 1 Construction Certification Report is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant civil and/or criminal penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Richard A. Isaac
Signature

9/7/11
Date

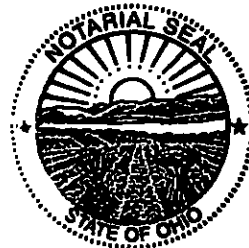
Richard A. Isaac, P.E.
Name



On this, the 7th day of Sept. 2011, before me, a notary public, the above signed person, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Kathleen Alleman
Notary Public



KATHLEEN ALLEMAN
Notary Public
In and for the State of Ohio
My Commission Expires
August 11, 2014

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Section 1

Introduction

The purpose of this 2011 Gas Collection and Control System (GCCS) – Phase 1 Construction Certification Report (Certification Report) is to detail the materials, construction/installation methods, and inspection activities and tests performed for the 2011 GCCS – Phase 1 Construction Project at the Lorain County II Landfill (herein after referred to as the “Landfill”), Lorain County, Oberlin, Ohio. This Certification Report was prepared in general conformance with Ohio Administrative Code (OAC) 3745-27-08(H). The owner's Notarized Statement and the Engineer's Certification attesting to the accuracy and compliance of this Certification Report are included as Pages ii and iii, respectively.

The Certification Report includes the following sections:

1. Introduction
2. Landfill Gas Extraction Wells
3. Landfill Gas Collection System
4. Airline and Force Main System
5. System Repairs and Maintenance

A discussion of each new or altered component of the Landfill GCCS materials, construction/installation methods, and inspections/tests performed is provided in the appropriate section. Daily field logs, photographs, project record drawings, extraction well boring logs, laboratory test results, pipe pressure test results, and additional relevant information is provided in the appendices.

Under the approval of Republic Services, Inc. (Republic), maintenance was performed on the existing Landfill GCCS. Twenty-two GCCS extraction wells were replaced (re-drilled) and four new GCCS extraction wells were installed (refer to the Project Record Drawings in Appendix D for locations).

The fieldwork was performed from April 18, 2011 to June 24, 2011 by Republic's subcontractor, American Environmental Group Ltd. (AEG) of Richfield, Ohio. AEG, under the supervision of Roy McMasters (Gas Extraction System Operations Manager) and Jeff Enochs (Drilling Operations Manager), performed the construction/installation of the extraction wells and pipeline components. Brown and Caldwell performed resident inspection services with Janet Todia and Bryant Kiedrowski providing day-to-day observations and documentation. Elena Goodhall, P.E. of Brown and Caldwell provided project management and Richard A. Isaac, P.E. of Brown and Caldwell served as the certifying engineer. Daily field logs and construction/installation photographs are included in Appendices A and B, respectively. Qualifications for Ms. Todia, Mr. Kiedrowski, Ms. Goodhall, and Mr. Isaac are included in Appendix C.

For the purposes of this Certification Report, construction quality assurance (CQA) is used to refer to activities performed by Brown and Caldwell, where quality control (QC) refers to observation and testing activities performed by the GCCS component's installer (AEG) and manufacturer (ISCO).

1.1 Field Alterations/Deviations

During the course of the construction/installation activities, minor alterations/deviations from the construction drawings were implemented in the field. These minor alterations/deviations are listed below, and are also reflected in the Project Record Drawings included in Appendix D:

- Moved the location of EW-39R due to drainage issues from a side slope drainage culvert
- Utilize 6-inch electro-fusion coupler for repair of a knicked pipeline near EW-47R
- Tied in EW-40R2 to the EW-138 lateral instead of utilizing additional 12-inch road crossing
- The following additional redrills were added: EW-120R2, EW-145R2, EW-155R, EW-62R2, TEW-8R
- Tied in the airline and force main from EW-57R2 to EW-58R and TEW-1R to EW-124R
- Moved EW-155R 20 feet west due to benching and access issues
- Tied in 6-inch laterals directly into 12-inch header on north side for wells EW-156, EW-157, EW-49R, EW-50R, and EW-51R (drawing depicted 6-inch, but tie in and laterals actually 4-inch)
- Moved well EW-91AR ten feet west of original location due to refusal and sludge issues
- EW-141R set at a depth of 96 feet due to sludge
- EW-122R set at a depth of 92 feet due to sludge
- EW-143R set at a depth of 80 feet due to sludge
- EW-62R2 set at a depth of 82 feet due to sludge
- EW-145R2 set at a depth of 95 feet due to sludge
- TEW-8R set at a depth of 113 feet due to sludge
- EW-107R set at a depth of 42 feet due to sludge; casing changed to 15 feet of solid pipe due to the short depth
- No airline and force main were installed at EW-49R due to well casing being dry
- No pump was installed at well EW-50R due to well casing being dry
- Moved the location of EW-107R five feet east due to benching and access issues
- Set pump in EW-158 due to high liquid level and ran airline and force main from EW-154

Section 2

Landfill Gas Extraction Wells

A total of four new and twenty-two replacement extraction wells were installed at the Landfill. The new extraction wells are listed in the following Table 1:

Table 1. New Extraction Wells	
EW-156	EW-158
EW-157	EW-159

Existing extraction wells that were abandoned and replaced are listed in the following Table 2:

Table 2. Existing Landfill Gas Extraction Wells	
Replacement	Abandoned
EW-1AR	EW-1A
TEW-3R	TEW-3
TEW-8R	TEW-8
EW-22R	EW-22
EW-39R	EW-39
EW-40R2	EW-40R
EW-49R	EW-49
EW-50R	EW-50
EW-54R	EW-54
EW-62R2	EW-62R
EW-78R	EW-78
EW-81R	EW-81
EW-85R	EW-85
EW-91AR	EW-91A
EW-107R	EW-107
EW-110R	EW-110
EW-120R2	EW-120R
EW-122R	EW-122
EW-141R	EW-141
EW-143R	EW-143
EW-145R2	EW-145R
EW-155R	EW-155

Existing extraction wells were abandoned by excavating around the existing well casing to an approximate four-foot depth below the existing ground surface and cutting off the exposed casing. A polyvinyl chloride (PVC) slip cap, with a bead of silicone gel inside the cap, was lag-bolted on top of the cut-off well casing and the excavation was backfilled with the excavated materials and clean on-site soil, as needed.

Existing extraction wells within the final cover area were abandoned by excavating around the existing well casing to either the approximate four-foot depth or until the geosynthetic components of the final cover system were encountered; whichever occurred first. The exposed casing was cut off at either the four-foot depth or just above the geosynthetic components and a PVC slip cap, with a bead of silicone gel inside the cap, was lag-bolted on top of the cut-off well casing. The excavation was backfilled with the excavated materials and clean on-site soil, as needed.

The new extraction wells, listed in Table 1, were connected to the Landfill GCCS using 6-inch HDPE lateral pipelines, tees, and well risers. The 22 re-drilled (replacement) extraction wells are connected to the Landfill GCCS with a 6-inch lateral that ties into the 6-inch lateral that served the associated abandoned extraction well.

Tie in to the Landfill GCCS for new wells EW-156, EW-157, EW-158, and EW-159 was as follows:

- Wells EW-156 and EW-157 are tied into the existing 6-inch lateral that originates from EW-49R and the 12-inch header on the north slope.
- EW-158 is tied-in to the existing 6-inch lateral that also serves EW-154 that obtains vacuum from the 12-inch header on the north slope.
- EW-159 is tied-in to the existing 24-inch header with a 24-inch by 6-inch branch saddle and a 6-inch riser.

Tie in to the Landfill GCCS for the 22 redrilled (replacement) extraction wells was as follows:

- EW-39R is tied-in to the new 12-inch header with a 6-inch branch saddle and 6-inch lateral that sits directly on top of the 12-inch header.
- LR-7 is tied-in to the 24-inch header on the northeast slope with a 24-inch to 6-inch reducer and a 6-inch to 4-inch reducer that leads to the 4-inch vacuum riser.
- LR-6 is tied-into the existing 6-inch lateral upslope that also serves well EW-155R. The lateral line for LR-6 is reduced with a 6-inch by 4-inch tee below grade. The laterals for each of these wells ties into the 24-header on the northeast slope.
- EW-40R2 is tied-into the existing 6-inch lateral that obtains vacuum from the new 12-inch header on the north slope.
- Well EW-54R is now tied-in to the existing 12-inch header on the north slope with a 12-inch by 6-inch branch saddle and a 6-inch riser. While excavating the lateral tie in for wells EW-156 and EW-157, it was discovered that wells EW-54R, EW-49R, and EW-50R were reduced to 4-inch laterals below grade. During this construction event, all lateral lines for these wells were increased to 6 inches.
- Each of the remaining redrills are connected to the Landfill GCCS with a 6-inch lateral that ties into the 6-inch lateral that served the associated abandoned extraction well.

Fifteen of the extraction wells installed for the 2011 GCCS – Phase I program were installed within the area of the Landfill with final cover present (location of these extraction wells is shown on the Project Record Drawings in Appendix D). The geosynthetic components of the final cover system were compromised as the auger advanced through the final cover system. Following installation of the casing for the above-mentioned replacement extraction wells, repair of the geosynthetic components was performed by AEGL (see Section 2.2 for a discussion of how the repairs were performed). The repairs provided a continuous and intact barrier at the replacement extraction well locations. It should be noted that the original borehole for well EW-91AR was abandoned at a depth of 20 feet due to refusal and redrilled ten

feet west of the original location. Therefore, an additional geomembrane repair was performed on the original borehole location of EW-91AR.

Periodic air monitoring was performed during the installation of the new and replacement extraction wells (see Subsection 2.4).

2.1 Materials

The materials used for the construction/installation of the new and replacement extraction wells included the following:

- 6-inch diameter solid and perforated SDR 11 HDPE pipe with HDPE butt caps and 6-inch Schedule 40 PVC end caps
- No. 4 stone (1-inch to 3-inch washed non-carbonate) backfill material
- Geonet with geofabric, which was heat-bonded to one side
- 8-mesh granulated bentonite
- Nominal 60-mil thick HDPE flexible membrane liner (FML)
- Geocomposite
- HDPE extrusion welding rod

2.2 Construction/Installation Methods

Equipment used to construct/install the extraction wells included a Caterpillar IMT AF-130 track-mounted drill rig, Caterpillar 953D track-mounted loader, Caterpillar 320D excavator, JCB 718 articulated dump truck, ISCO Hotline HDPE butt-fusion pipe welding equipment, DemTech Pro-X extrusion welder and Pro-Tester, hot air machine, DemTech vacuum box, and various hand tools. The general construction/installation methods were as follows:

- A field survey was conducted by the Wellert Corporation of Medina, Ohio to stake the design location for each extraction well and the final well schedule was updated accordingly.
- Boreholes for the extraction wells were drilled into the waste in advance of installing the extraction well materials and equipment. Drilling was performed using a Caterpillar IMT AF-130 track-mounted drill rig with a 36-inch diameter auger to the depth for each individual extraction well indicated in the final extraction well schedule on the Project Record Drawings (see Appendix D).
- Depth of the borehole was controlled and verified using a weighted tape measure. As the auger advanced, the cuttings were visually inspected to ensure no geosynthetics were encountered. Waste temperatures and waste composition were also recorded (see boring logs in Appendix E).
- Final borehole depth was confirmed using a weighted tape measure prior to extraction well casing placement.
- Solid wall and perforated sections of HDPE pipe were butt-fusion welded to the lengths provided in the final extraction well schedule for placement into the borehole. A typical detail for the extraction well construction is provided on the Project Record Drawings in Appendix D.
- Using the Caterpillar 953D track-mounted loader, the welded HDPE casing was raised and slipped into the borehole. A metal grate was placed around the casing to position the casing as close as possible to the middle of the borehole. The casing was secured to the metal grate to prevent the casing from sagging.
- No. 4, washed, non-carbonate stone was placed in the borehole annulus from the bottom up to a minimum of two feet above the top of the perforated section of the 6-inch HDPE casing. The geotechnical test results for the No. 4 stone are provided in Appendix F.

- Geonet with geofabric, which was heat-bonded to one side of the Geonet, was placed over the stone with the geonet in contact with the stone. A one-foot clean soil plug was placed on top of the Geonet.
- A two-foot thick (minimum) granular bentonite seal was placed on top of the clean soil plug. The granular bentonite was hydrated with water and on-site clean soil material was placed on top of the granular bentonite seal. The clean soil material varied in thickness. The two-foot thick (minimum) granular bentonite seal was placed on top of the clean soil material so that the top of the upper granular bentonite seal extended a minimum of six inches into the cover soil.
- Repairs to the geosynthetic components of the final cover system consisted of installing and extrusion welding a “boot sleeve” around the new and replacement well casing and extrusion welding the boot sleeve to the FML component of the final cover system. The repair procedures included the following:
 - The excavator and hand tools were used to expose an area around the new or replacement well casing.
 - Surface of the existing FML was cleaned of debris.
 - A section of the 60-mil HDPE FML was cut to overlay the damaged area of the existing FML by a minimum of six inches.
 - The 60-mil HDPE FML boot sleeve was placed over the casing leaving enough material to secure the boot sleeve to the casing.
 - The 60-mil HDPE FML boot sleeve was heat bonded to the existing FML component of the final cover system and the new or replacement well casing.
 - A hand grinder (60-grit sand paper) was used to prepare the area of the existing FML component where the extrusion welding would be performed prior to initiating welding.
 - Trial welds were performed for the extrusion welders prior to performing the extrusion welding of the 60-mil HDPE FML boot sleeve to the existing FML component of the final cover system.
 - The 60-mil HDPE FML boot sleeve was extrusion welded to the existing FML component of the existing final cover system and the new well casing.
 - The geocomposite was repaired by placing a section of geocomposite material cut to overlay the damaged area by a minimum of one-foot.
- Schedule 40 PVC temporary caps were installed using set screws and silicone sealant on top of the new well casings. Upon completion of the Landfill GCCS piping, Landtec wellheads were installed as permanent replacements for the temporary caps. In most cases, each newly drilled extraction well was connected the same day to either temporary or permanent vacuum laterals to proactively mitigate potential odor issues. All wells and associated risers were marked with reflective tape to increase visibility.
- Landtec wellheads were installed using flexible couplers secured with hose clamps.
- Waste material encountered within the borehole was placed in the articulated dump truck for transportation and disposal at the active working face of the Landfill.

2.3 Inspections/Tests

The following inspections and tests were performed during the construction/installation of the new and replacement extraction wells:

- Materials used in the construction/installation of the new and replacement extraction wells were visually inspected for conformance with the construction drawings, as well as to verify there were no

signs of damage. The extraction well casing materials were determined to be in conformance with the construction drawings and no visual damage to the materials was observed.

- Perforation size (diameter) and pattern (spacing around the circumference and along the length) for the perforated portion of the extraction well casings were observed for general conformance with the construction drawings.
- Boreholes were observed during the drilling to document that the boreholes were completed to the appropriate depth as provided in the final extraction well schedule provided on the Project Record Drawings included in Appendix D.
- No. 4 washed non-carbonate stone was used to backfill the annular space between the perforated extraction well casing and the borehole. The geotechnical test results for the gradation and carbonate content of the No. 4 stone are provided in Appendix F.
- Brown and Caldwell inspectors observed the butt-fusion welding process used to connect the HDPE pipe casing sections together to verify appropriate welding procedure guidelines were followed. The butt-fusion welding was performed according to acceptable standards.
- Brown and Caldwell inspectors obtained and recorded measurements to verify the extraction wells were constructed according to the construction drawings as well as to create the Project Record Drawings.
- Brown and Caldwell inspectors recorded refuse temperature, composition, and degree of moisture at approximately five-foot intervals during drilling activities. The AEGL well logs are provided in Appendix E.

The following inspections and tests were performed during the installation of the 60-mil HDPE FML repairs:

- Brown and Caldwell inspector performed visual observation and documentation of the repairs and vacuum box testing.
- Prior to welding of the 60-mil HDPE FML to the existing FML and new well casing, trial welds were performed using the extrusion welder. Test sections of the welds were cut and a tensiometer was used to perform three peel and three shear tests on the test weld sections. The results of the peel and shear tests are presented in Appendix G.
- Vacuum box testing was performed to verify that the 60-mil HDPE FML welds to the existing FML were free of leaks. The vacuum box testing was performed as follows:
 - Soapy solution was applied to the surface of the weld.
 - Vacuum box was placed over approximately 12 to 18 inches of the extrusion weld.
 - Negative pressure was applied to the vacuum box.
 - Welds passed the vacuum box test when no bubbles were observed along the length of the weld under the vacuum box. The test duration was ten seconds.
 - The 60-mil HDPE FML welds passed the vacuum box testing. The results of the vacuum box tests are presented in Appendix G.

2.4 Air Monitoring

Air monitoring was performed during the drilling of the new and replacement extraction wells. A multi-gas VRAE monitoring device, manufactured by RAE Systems, was used to conduct the air monitoring. The atmospheric concentrations within the breathing zone were monitored for methane (lower explosive limit [LEL]), oxygen, carbon monoxide, and hydrogen sulfide. The air monitoring results, which were recorded by the Brown and Caldwell inspector, are provided in Appendix H.

Section 3

Landfill Gas Collection System

AEGL installed the GCCS components required to incorporate the new extraction wells, the replacement extraction wells, and horizontal collectors into the existing GCCS. Approximately 2,189 linear feet of HDPE pipe was installed to connect the new extraction wells and the replacement extraction wells on line with the existing Landfill GCCS. Approximately 613 linear feet of HDPE pipe was used to construct new headers. The approximate linear footage of pipeline installed is included in the daily field logs for AEGL (see Appendix A).

3.1 Materials

The components used to connect the new and replacement extraction wells into the existing Landfill GCCS included the following:

- 6-inch, diameter solid SDR 17 HDPE lateral pipe
- 2-inch, diameter solid SDR 9 HDPE airline pipe
- 2-inch, diameter solid SDR 11 force main pipe
- 12-inch diameter solid SDR 17 HDPE header pipe
- 6-inch diameter perforated SDR 11 HDPE horizontal collector pipe
- 6-inch diameter solid SDR 17 HDPE horizontal collector riser pipe
- 12-inch diameter butterfly valves
- Landtec well heads and combination well heads.
- Various sizes of HDPE tie-in couplings, reducers, tees, and other fittings and appurtenances
- Nominal 60-mil thick HDPE FML
- Geocomposite

3.2 Construction/Installation Methods

Equipment used to connect the new and replacement extraction wells into the existing Landfill GCCS and to construct the horizontal collectors included Caterpillar 320D track-mounted excavators, Caterpillar 725 articulated dump trucks, Caterpillar D4K and D6K track-mounted dozers, ISCO Hotline HDPE butt-fusion pipe welding equipment, and various hand tools.

3.2.1 Lateral Construction/Installation Methods

The general construction/installation methods used to connect the new and replacement extraction wells into the existing Landfill GCCS were as follows:

- HDPE pipe of various diameters was delivered to the site and stored in a clean area.
- The 6-inch and 12-inch HDPE pipe was butt-fusion welded on-site by AEGL prior to being connected to the existing Landfill GCCS.
- HDPE pipe was placed in the trenches following completion of the excavation.

- HDPE pipe was installed to achieve the minimum design slopes of three percent within the limits of waste.
 - Pipe bedding consisted of clean cover soil material removed from the trench excavation.
 - Survey markers were placed at 50-foot intervals along the pipelines, at road crossings, and at fitting locations. The survey markers were removed following completion of the field survey activities.
- Installed pipelines, fittings, components, and road crossings were field surveyed after installation from a third order benchmark using global positioning system (GPS) technology.
 - Locations of the pipelines, components, and appurtenances are provided on the Project Record Drawings in Appendix D.
 - 5-mil x 3-inch underground detectable tape with the words "CAUTION BURIED GAS LINE BELOW" was placed approximately 1-foot above the HDPE pipe during backfilling activities.
- Waste material encountered within the excavated soil was separated from the soil as the trenches were backfilled. The waste material was placed in an articulated dump truck for transportation and disposal at the active working face of the Landfill.
 - Additional soil was obtained from the onsite stockpile to augment the backfill soil, if needed.

3.3 Inspections/Tests

The following inspections and tests were performed during the connection of the new and replacement extraction wells to the existing Landfill GCCS:

- Pipe was visually inspected for conformance with the construction drawings, as well as to verify there were no signs of damage. The pipe was determined to be in conformance with the construction drawings and no visual damage to the pipe was observed.
- Butt-fusion welds were visually inspected prior to back-filling the trenches. Brown and Caldwell inspectors observed hot plate temperature, holding times, and welding techniques. The welds were determined to be in conformance with the specifications.
- Pipelines were pressure tested prior to being connected to the existing Landfill GCCS, and while in place. Pressure tests consisted of applying 100 pounds per square inch (psi) of pressure for SDR-9 airline, 50 psi of pressure for SDR-11 force main, and 25 psi for SDR-17 six-inch and 12-inch HDPE. All tests were conducted over a four-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were inspected for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.
- The geotechnical results for the No. 4 stone was reviewed and determined to be in compliance with the gradation and carbonate residue requirements.

Section 4

Airline and Force Main System

AEGL installed the airline and force main system components required to incorporate the new extraction well leachate pumps into the existing Landfill GCCS. A total of 20 pneumatic pumps were installed at the Landfill as listed in Table 3. An estimated 8,172 linear feet of HDPE pipe was installed to connect the new extraction well pumps with the leachate collection and compressed air system. Of that linear footage of pipeline installed, 4,086 linear feet was 2-inch diameter HDPE airline, 1,411 linear feet was 2-inch diameter HDPE leachate force main, 1,261 linear feet was 4-inch by 2-inch diameter HDPE dual-contained leachate force main, and 1,414 linear feet was 4-inch diameter HDPE leachate force main. The approximate linear footage of pipeline installed is included in the daily field logs for AEGL (see Appendix A).

Table 3. Extraction Well Pumps and Depths

Well	Pump Depth (ft)
TEW-1AR	102
TEW-R2	96
TEW-3R	100
TEW-9R	90
EW-47R	100
EW-51R	90
EW-56R	99
EW-57R2	98
EW-120R	97
EW-144R	93
EW-145R2	95
EW-148	77
EW-149	113
EW-150	102
EW-151	98
EW-153	84
EW-154	98
EW-155R	38
EW-158	95
EW-164R	90
EW-165R	88
EW-224	100

Two-inch airline and force main was installed to operate newly installed pumps and to accommodate future installation of additional pumps. The airline and force main was connected to the existing airline and force main by pinching the pre-existing lines and butt fusing new lines to extend the runs. The locations of the new extended airlines and force main is shown on the Project Record Drawings in Appendix D.

New 4-inch by 2-inch dual-contained HDPE leachate force main was installed to serve new dual extraction wells and existing wells fitted with combination well heads on the west side of the Landfill. This dual-contained leachate force main was installed only where the force main was installed on top of the final cover area.

4.1 Materials

The airline and force main components include the following materials:

- 2-inch diameter HDPE SDR 9 pipe (airline and force main)
- 4-inch diameter HDPE SDR 9 pipe (force main)
- 4-inch diameter HDPE SDR 11 pipe (force main outer containment)
- 8-inch diameter HDPE SDR 17 pipe (road crossing encasement)
- 12-inch diameter corrugated metal pipe (road crossing encasement)
- 36-inch diameter double-wall corrugated HDPE pipe (valve encasement)
- QED Pneumatic pumps and associated hardware
- Various sizes of HDPE tees, fittings, and appurtenances
- 4-inch diameter PVC ball valves
- 2-inch diameter stainless steel ball valves

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4.2 Construction/Installation Methods

Equipment used to install the airline and force main system included Caterpillar 320D track-mounted excavators and CAT 725 articulated dump trucks, electro-fusion couplers and welding equipment, ISCO Hotline butt-fusion welding equipment and various hand tools. The general construction/installation methods used to install the airline and force main system were as follows:

- The HDPE pipe was butt-fusion welded on-site by AEGL.
- A trench was excavated at the specified location to a depth of approximately 36 inches below the existing ground surface.
- The leachate force main and airline piping was placed in a trench on a bed of compacted soil and backfilled with clean on-site soil.
- Waste encountered was separated from the fill as the trench was backfilled. Excavated waste was placed in an articulated dump truck for disposal at the active working face of the Landfill.
- Riser pipes at each extraction well were connected to the pumps installed in the extraction wells listed in Table 3.
- At specified locations, isolation valve assemblies were installed in line with the leachate force main and airline. Encasements for each valve were constructed from 36-inch, double-wall, corrugated HDPE pipe placed upright around the valves and bedded in clean onsite soil material. Each encasement was equipped with a fiberglass cover and metal rod for security measures. The isolation valve assemblies are shown on the Project Record Drawings in Appendix D.

4.3 Inspections/Tests

The following inspections and tests were performed during the installation of the leachate force main and airline:

- The HDPE pipe was visually inspected for conformance with the construction drawings, as well as to verify there were no signs of damage. The pipe was determined to be in conformance with the construction drawings and no visual damage to the pipe was observed.

- Butt-fusion welds were visually inspected and observed to be completed according to the butt-fusion welding specifications.
- Visual inspection of the isolation valve assembly was performed to assure that the equipment was installed correctly and was in working order.
- Backfilling operations were monitored to assure that there were no negative impacts on the isolation valve assemblies and no waste material was included in the backfill soil.
- Installed force main and airlines were pressure tested prior to being connected to the existing Landfill GCCS. The pressure test for the airline consisted of applying 100 psi of pressure over a 4-hour period. The pressure test for the leachate force main consisted of applying 50 psi of pressure over a 4-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were inspected for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.

Section 5

System Repairs and Maintenance

Gas header line repairs/maintenance were performed by AEGL. The following repairs/maintenance activities were performed:

- Installation of new 4-inch diameter SDR-17 HDPE vacuum line to existing sideslope risers LR6 and LR7.
- Enhancements (new 48-inch diameter HDPE sump top and encasement to LR6 4-inch diameter HDPE vacuum pipeline) to LR6.

5.1 Materials

The materials used to install the LR6 enhancements included the following:

- Shop-fabricated, 48-inch diameter, SDR 32.5, HDPE manhole riser (vault top)
- HDPE anchor flange
- 48-inch water tight flange set with neoprene gasket and ½-inch anchor bolts
- Silicone
- 4-inch diameter, SDR 17, HDPE pipe
- 4-inch diameter gate valves
- 6-inch x 3-inch to 4-inch x 2-inch HDPE reducer
- 4-inch diameter, SDR 17, HDPE tees and elbows, flanges, backup rings, and gaskets
- Small 4-inch bolt kits
- Caution tape

The materials used to install the new 4-inch vacuum line to LR7 included the following:

- 4-inch diameter, SDR 17, HDPE pipe
- 4-inch diameter gate valves
- 4-inch diameter, SDR 17, HDPE tees and elbows, flanges, backup rings, and gaskets
- Small 4-inch bolt kits
- Caution tape
- 24-inch x 4-inch diameter branch saddle
- 18-inch x 4-inch diameter branch saddles
- 12-inch x 4-inch diameter branch saddles

5.2 Construction/Installation Methods

Equipment used to perform the GCCS maintenance construction/installation included a Caterpillar 320D track-mounted excavator; Caterpillar 725 articulated dump truck, butt-fusion welding equipment and various hand tools. The general construction/installation methods used to install the valve were as follows:

LR6 Enhancements

- Butchko Electric disconnected the power for the pump and probe at the control box and pulled the wires.
- AEGL disconnected the leachate discharge line and pulled the pump and probe from the sump. The existing 4-inch valve, pipeline, and elbow were cut and removed and a 4-inch butt cap was placed on the exposed vacuum pipeline. The existing sump cover was removed and placed to the side for disposal.
- The new pre-fabricated 48-inch diameter HDPE manhole riser (vault top) was set into place on top of the existing concrete manhole. The new vault cover was anchored into place using a 48-inch water tight flange set and neoprene gasket. Eight evenly placed ½-inch anchor bolts and silicone were used to seal the vault cover to the top of the concrete manhole.
- The leachate discharge line was connected to the new vault top via a new 6-inch x 3-inch to 4-inch x 2-inch reducer connected to the 4-inch x 2-inch pre-fabricated stub of the new vault cover.
 - The pump and probe were set back in the sump at 53 feet.
 - The new vault cover lid was bolted into place.
- The new 4-inch diameter gate valve was installed on the 4-inch pre-fabricated stub of the new vault cover.
- The 4-inch diameter HDPE vacuum pipeline was butt-fusion welded on-site by AEGL.
- The hydraulic excavators were used to excavate a trench between the north and south leachate sumps for installation of the pipe.
- The pipe was placed in the trench following completion of the excavation.
- The new 4-inch diameter gate valve was connected to the existing vacuum line and a 4-inch tee was installed in the existing vacuum line to connect the new 4-inch vacuum line from the south leachate sump.
- A hole was cut in the vault cover of the existing south leachate sump, the new 4-inch diameter vacuum line/4-inch diameter gate valve assembly was inserted, and the assembly was extrusion welded to the HDPE vault cover.
- The new 4-inch gate valve assembly was connected to the new 4-inch vacuum line.
- The trench was backfilled using soil material obtained from the excavation and the area was re-graded.
 - Survey markers were placed at 50-foot intervals along the pipeline and at fitting locations. The survey markers were removed following completion of the field survey activities.
 - The installed pipeline, fittings, and connections were field surveyed after installation from a third order benchmark using global positioning system (GPS) technology.
 - Locations of the new vacuum line between the leachate sumps, fittings, and appurtenances are provided on Drawing RD-1 in Appendix D.
 - 5-mil x 3-inch underground detectable tape with the words "CAUTION BURIED GAS LINE BELOW" was placed approximately one-foot above the pipeline during backfilling activities.
- Butchko Electric reconnected the power for the pump and probe at the control box.

LR7 Vacuum Line

- The 4-inch diameter HDPE pipe was delivered to the site and stored in a clean area designated by the Landfill north of the new disposal cell.
- The 4-inch diameter HDPE pipe was butt-fusion welded on-site by AEGL.

- Butt-fusion welding was performed inside and outside of the excavated trenches depending on available working area and access to the existing system connections.
- The 4-inch diameter HDPE pipe vacuum line manifold assemblies were fabricated in the field to connect the 6-inch vacuum line to the sideslope risers and the cleanout.
 - The vacuum line manifold consisted of 4-inch diameter HDPE pipe, 6-inch diameter HDPE pipe, 4-inch diameter perforated pipe, and 4-inch diameter HDPE tees and 90 degree elbows, and 4-inch diameter gate valves.
 - A 4-inch diameter saddle was welded to each of the 18-inch diameter riser pipes and the 6-inch diameter cleanout pipe.
 - The vacuum line manifold was welded to the saddles to provide the vacuum line connection to the sideslope risers.
 - The 4-inch diameter vacuum line was butt fusion welded to the vacuum line manifold upgradient of the 4-inch gate valve and to shop-fabricated 4-inch x 12-inch branch saddles in the 12-inch header line.
- The hydraulic excavators were used to excavate trenches between the sideslope risers and the 12-inch header.
- The HDPE pipe was placed in the trenches following completion of the excavation.
 - The HDPE pipe was installed to achieve the minimum design slope of three percent.
 - Pipe bedding consisted of clean cover soil material removed from the trench excavation.
 - Survey markers were placed at 50-foot intervals along the 4-inch vacuum lines and at fitting locations. The survey markers were removed following completion of the field survey activities.
 - Installed vacuum lines, fittings, and connections were field surveyed after installation from a third order benchmark using global positioning system (GPS) technology.
 - Locations of the vacuum lines, fittings, and appurtenances are provided on Drawing RD-1 in Appendix D.
 - 5-mil x 3-inch underground detectable tape with the words "CAUTION BURIED GAS LINE BELOW" was placed approximately one-foot above the HDPE pipe during backfilling activities.
- Disturbed areas along the vacuum line alignment were graded after backfilling was complete.
- AEGL placed onsite clay-material around the 18-inch sideslope risers and vacuum line manifold assemblies.

5.3 Inspections/Tests

The following inspections and tests were performed during the above detailed construction activities:

- Pipe, shop-fabricated tees and branch saddles, electro-couplings, manhole riser (vault top), gate valves, tees, elbows, flanges and appurtenances were visually inspected to verify there was no sign of damage. No visual damage to the materials installed for the GCCS maintenance activities was observed.
- Visual inspections and written and photographic documentation of the enhancements to LR6 and sideslope riser vacuum line installation for LR7 were performed to assure that all parts were installed correctly.
- Backfilling operations were monitored to assure that there were no negative impacts on the header, lateral, and vacuum pipelines.
- Butt-fusion welds for the various pipe sizes were visually inspected prior to back-filling the trenches. Brown and Caldwell inspectors observed hot plate temperature, fusion pressure, holding times, and

welding techniques. The welds were determined to be in conformance with the butt-fusion welding specifications.

- Electro-fusion welds were visually inspected and observed to be completed according to the electro-fusion welding specifications.
- Installed force main and airlines were pressure tested prior to being connected to the existing Landfill GCCS. The pressure test for the airline consisted of applying 100 psi of pressure over a 4-hour period. The pressure test for the leachate force main consisted of applying 50 psi of pressure over a 4-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were inspected for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.

Appendix A: Daily Field Logs

Brown and Caldwell

American Environmental Group, Ltd.

Brown and Caldwell

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todia

Date: *4/20/11*

Construction Day No.: *3*

Time In: *0710*

moved to site on

Time Out: *1430*

4/18/11

Weather: *Rain > 30mph wind*
60°F; T storms

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

*AES on site using pipe; bad weather:
T storms > 30mph wind; no drilling or trenching
today*

Summary of Work:

*met w/ Billy Brown on site after speaking
w/ Burgi on phone - no drilling. Billy will
start at 24" x 12" tie in on north side - needs
welder to stake it out including 12" x 6" T's.
Also need welder to stake 39R in new position.
Called Isaac to track down welder. Joaquin
says 24" electrofusion couplers OK for tie in -
take 2 from Honeyard if possible.
Complete site safety checklist & practice
calibration of VLab.*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 4/20/11
Signature of CQA Monitor

Date

Truck
855

today
more
dirt +
monday
spread
it

Winds: Southeast & winds
11am-11pm

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Forrest Todia

Date: 4/21/11 Construction Day No.: 4

Time In: 0650

Time Out: 1800

Weather: 48°F Sunny; wet + sloppy
field conditions

Items Worked On:

- | | | | | |
|-------------------------------------|---------------------------|----------------|--------------------------|----------------------|
| ☒ | Gas Extraction Wells | Drilling | ☐ | Combo Wells |
| ☒ | Flare/piping Installation | | ☐ | Liner Installation |
| ☒ | LFG Piping | for 24"x12"x6" | ☐ | Liner Repair |
| ☒ | Pressure Testing | laterals for | ☐ | Excavation/Trenching |
| ☒ | Earthwork | rock slope | ☐ | Other |

Contractor/Subcontractors/Visitors:

AEG construction + drilling, Wellert
Corporation (surveying)

Summary of Work:

0650 arrive on site + speak w/ AEG construction
+ drilling; sloppy + wet site conditions due
to heavy rains; Billy Brown will continue
hauling 12x24" pieces for trenching + installation
Monday/Tuesday; Tim Bury senior will
attempt BW 158; BW 158 completed drilling at
1239; completed well installation at 2:50 pm
1500 met w/ Wellert for survey of 12" x 24" tie
in + 6" Ts; well BW 158 surveyed
AEG filed flagging/moved dirt; had lunch for
BW 159; turned over past 2 days:
1400' (4") 780' (12") 1600' (6")

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Forrest Todia 4/21/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Wind: SE 12pm - end of day
dull in morning

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todia

Date: 4/22/11

Construction Day No.: 5

Time In: 0645

Time Out: 1430

Weather: 48°F; Sizzle
overcast; muddy

Items Worked On:

- | | | | |
|-------------------------------------|---------------------------|--------------------------|----------------------|
| ☐ | Gas Extraction Wells | ☐ | Combo Wells |
| ☐ | Flare/piping installation | ☐ | Liner Installation |
| ☒ | LFG Piping | ☐ | Liner Repair |
| ☐ | Pressure Testing | ☐ | Excavation/Trenching |
| ☒ | Earthwork | ☐ | Other |

Contractor/Subcontractors/Visitors:

AES construction, AES drilling

Summary of Work:

0645 arrive on site; met w/ Brown + Buggy;
will look at weather before attempting BW159
0800 decide to attempt BW159; get shot
control by well BW159
0805 begin drilling after deodorizer set up;
winds SE; ask for extra chemical
1100 finish drilling BW149
1300 finish completion of well casing; very
muddy; earthwork
1430 complete earthwork; check in w/
Rich + have site after earthwork OK'd by
Republic

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Janet Todia

4/22/11

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Jonat Todia

Date: 4/25/11 Construction Day No.: 8

Time In: 0653

Time Out: 0850

Weather: Rain; T-storms
very muddy

Items Worked On:

None due to mud + rain

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARG construction; ARG drilling

Summary of Work:

0653 arrive on site + met w/ Berrig + Brown;
can't work today due to mud, rain + T-storms
0730 Maurer calls + suggests to shut down
until Thurs morning due to mud, rain +
T-storms
0830 met w/ Kozelovich; OK to stop work
until Thurs AM

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other: _____

[Signature]
Signature of CQA Monitor

4/25/11
Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todia

Date: 4/27/11 Construction Day No.:

Time In: 0650

Time Out: 1430

Weather: cloudy, fair 60°F
heavy wind > 30mph

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABC construction; no drilling

Summary of Work:

- tie in RW159 & RW158 for temporary vacuum odor control
- no drilling today winds > 30 mph
- check ESCO inventory for pump parts

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 4/27/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140880

Location: Lorain County II Landfill

SC Personnel: Janet Todia

Date: 4/29/11

Construction Day No.: 9

Time In: 0655

Time Out: 1930

Weather: cold/rain 49°F-58°F

Items Worked On:



Gas Extraction Wells
Flare/piping installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☐ Liner Repair
☒ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

REG construction, REG drilling

Summary of Work:

- 0655 arrive on site; receive call from Kostelnick James
couple EW159 came apart
- permanent tie in EW158 + temporary tie in EW159
- drill EW40R2 + temporary tie in
- Road Xing EW154 + 41R; attempt to go thru 12"
culvert w/ additional air = force main (6" already in
CMP); need to do additional road Xing + CMP
tomorrow; can't get air = force main thru
- ran air = force main EW158 (not in scope)
- identify 3" well heads for combo pump
installation w/ SCG

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Janet Todia 4/29/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todia

Date: 4/30/11

Construction Day No.: 10

Time In: 0650

Time Out: 1715

Weather: Sunny + 66F

Items Worked On:



Gas Extraction Wells
Flare/piping Installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☐ Liner Repair
☒ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

AKG construction, AKG drilling

Summary of Work:

0650 arrive on site check gas quality BW40R2, BW159, BW158
0710 begin drill BW39R
10462 finish drill set BW39R (set it)
- construction work on additional culvert/road
ring BW154 + 47R to install 2" air - force main
under road; additional CMP culvert
- BW39R temporary tie in + brought
on line @ 1505; SCS brought well
on line
- finish road ring 60' comp air - force main +
air - force main to 47R

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Janet Todia 4/30/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GOCs Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Tyler Todig

Date: *5/12/11*

Construction Day No.:

Time In:

0700

Time Out:

0910

Weather:

*lightning & sun
68°F*

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

NEB construction

Summary of Work:

*- safety meeting
- called off for rain day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Spide/Pholey 5/12/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todia

Date: 5/5/11

Construction Day No.: 11

Time In: 0655

Time Out: 1715

Weather: sunny; 50°F
very muddy.

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG construction, AEG drilling, Wallert
Engineering (survey)

Summary of Work:

0655 arrive on site & meet w/ AEG construction & drilling; too muddy to run heavy equipment
0800-0900 meeting w/ Republic, AEG, SES; drilling to come back next week; construction back Monday possibly work at Lorain I
1500 set pump in 144R
1600 meet w/ Jesse of Wallert to survey road xing R2154 to R2147R; notify construction to remove witness wires & mark them for that
1715 leave site

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 5/5/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Iman Todia

Date: 5/9/11

Construction Day No.:

Time In: 0650

Time Out: 1900

Weather: sunny + 62°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

off site Thu Wed due to fuel inspection
ABG drilling, ABG construction

Summary of Work:

0650 arrival on site; ABG to install pump EW158,
French + install air force main EW224 (purchase
tie pipe)

- tie in (2) 3" leachate lines; tie in (2) 24" leachate lines to man for odor control + inspection

- tie 40K2 into EW138 instead of relining another road crossing; talked to Rick Isaac; OK'd by Rick as long as we have the correct fall

- tomorrow I upgrade leachate manholes 67 + 69

*Attended but was not there
talked to Rick Isaac*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Iman Todia
Signature of CQA Monitor

5/9/11
Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Tadin

Date: 5/10/11

Construction Day No.:

Time In: 0650

Time Out: 1715

Weather: Sunny 70°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABG construction, Republic Corporation on tour
w/ Agency + AG

Summary of Work:

- drop pump BW224, BW148, BW145R, BW120R - ^{pinched} ^{remote} ^{city}
- dummy test BW224, BW148, BW145R, BW120R
- got approval Vladimir Kostelnick Jaquet redill 145R, 120R, 155
- got approval to move air-fuel main tie in BW153 to BW154 to avoid road crossing
- finish storm I; will call Walbert to get survey + get redill well locations survey
- Agency inspection w/ AG went well

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

[Signature] 5/10/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Ernest A. Tadia

Date: *5/12/11*

Construction Day No.:

Time In: *0650*

Time Out: *1015*

Weather: *Rain, Tstorms*
60°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

NEG Drilling, NEG construction

Summary of Work:

0800 NEG drilling leave site for the day due to rain, mud, Tstorms
0830 NEG construction drop pump RW149 to 113' BGL; meet w/ Jacques; discuss weather + what work is feasible
0845 T storms; called guys off of hill for lightning
NEG construction called off for the day
0930 meet w/ Kornalnick to update him on plan for the week
1015 leave site

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Ernest A. Tadia 5/12/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todia

Date: 5/13/11

Construction Day No.:

Time In: 0650

Time Out: 1730

Weather: Sunny 68°F

Items Worked On:



Contractor/Subcontractors/Visitors:

ABG drilling, ABG construction
Welleit Engineering (survey)

Summary of Work:

- drill EWL41R to 96'; should be 105'; sludge
- air/force main EWL50 + pump installation
- made bench EWL5R
- survey w/ Welleit + remove all survey risers
- survey Lorain I + remove all survey risers

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Janet Todia 5/13/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase I
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel: Sanjay Todiya

Date: 5/14/11 Construction Day No.:

Time In: 0700

Time Out: 1900

Weather: lightning rain
58°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ATC construction, ATC drilling

Summary of Work:

- RAIN DAY
- agree to not return until 5/25/11 due to water on landfill (saturated) + don't want to destroy cap & cover

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Sanjay Todiya 5/14/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Tamir Tadia

Date: 5/23/11

Construction Day No.:

Time In:

0650

Time Out:

1800

Weather:

79°F overcast

Items Worked On:



Gas Extraction Wells



Flare/piping Installation



LFG Piping



Pressure Testing



Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

NEG construction. No drilling this week

Summary of Work:

- 0650 crane on site; will tie in WR7 for odor control; will trench BW153 to BW154 for air force main
- cycle counter not working BW150 - will order warranty one
- need to drill new wells BW156 + BW157 next according to SCS SEM hits
- leachate outbreak repair area east side near electrical + 24" header valve

Attachments:



Contractor Report



Field Notes



Other:

[Signature]

Signature of CQA Monitor

5/23/11

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Laramie County II Landfill

BC Personnel: Tim Todia

Date: 5/24/11

Construction Day No.:

Time In: 0545

Time Out: 1900

Weather: Sunny 70F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

REG construction

Summary of Work:

0545 arrive on site
0800 site meeting w/ Regent
0945 obtain sample from leachate vault
+ give to Rich of Republic
0945-1600 meeting w/ Republic; walk thru
for 24" header tie in
1800 finish tie in HR7
1830 finish tie in air force main tie in
57R2 to 58R

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

[Signature]

5/24/11

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel: Jamar Todia

Date: 5/25/11

Construction Day No.:

Time In: 0645

Time Out: 1745

Weather: Sunny 72°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AREC construction

Summary of Work:

- 0645 arrive on site
- tie in air + fuel main BWIR → TW2R → TW3R → BW145R
- repair leachate vault w/ intrusion welding
- finish HRT manifold + replace (2) 18" packets

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Jamar Todia
Signature of CQA Monitor

5/25/11
Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Vince Todra

Date: *5/26/11*

Construction Day No.:

Time In: *0700*

Time Out: *0800*

Weather: *rain, wet*

lightning

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

APG construction

Summary of Work:

- *RAIN DAY*
- *Republic not allowing work 5/28, 5/29, 5/30*
- *will attempt to return 5/31/11*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

[Signature] *5/26/11*

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Imet Todia

Date: *5/31/11*

Construction Day No.:

Time In: *0645*

Time Out: *1845*

Weather: *sunny, hot
humid 94°F*

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABG construction, wellnet survey

Summary of Work:

- 1045 trenching air force main (4" fm) from TEW3R to RW 65R*
- 1100 located 4" line (no gas on line); call SCS & B+C engineers - line is old lateral for TEW65R - permission to cap & cover & not repair*
- 1403 Jesse of wellnet on site for survey; survey all risers including TEW03 to 65R*
- discussed vacuum tie in for LFG manhole*
- notify Peoples that Rich K needs pipe sizing on air for*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Imet Todia *5/31/11*
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel:

Janet Todia

Date: 6/1/11

Construction Day No.:

Time In: 0650

Time Out: 1800

Weather: 70°F sunny

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

NEG construction

Summary of Work:

0650 arrive on site & discuss plan for the week
0800 weekly meeting to determine progress; rig
will come back this week; permission to
work full day Saturday & Sunday if needed
1004 go to recycle center to find 8" back up
rings; still no success
- continue trenching 50R to TEW 30M
- arrive phase open Saturday until 445
- trench air & force main TEW 9R to
TEW 24R - will be back tomorrow

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 6/1/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel:

Ismael Tadia

Date: 6/2/11

Construction Day No.:

Time In: 0650

Time Out: 1830

Weather: 70°F sunny

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG construction, AEG drilling on site
but did not drill - made trenches

Summary of Work:

- 0650 arrive on site - safety meeting
- finish all dual contained force main runs
- discuss tie in of CR6 to mainline
- agree to move 155 R 20' west - approved by
usage
- trench north 12" header installation
- attempted to complete road xing after
close, but permission to tarp & store trash
overnight denied

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Ismael Tadia 6/2/11
Signature of CQA Monitor 6/3/11 97
Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel:

Just Todia

Date: 6/3/11 Construction Day No.:

Time In: 0630

Time Out: 1830

Weather: 70°F. sunny

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG construction, AEG drilling

Summary of Work:

- 0630 arrive on site safety meeting
- 0905 begin drilling 155R
- 1015 contact Jaquet, Kostelnick, Elena & Isaac because drawings list laterals as 6", but they are 4"; stopped construction and told drilling not to drill on north slope & move to another location
- 1349 rec'd approval from Jaquet to tie in all 4" laterals as 6" w/ survey from Wellert
- drill wells 155R & AIR & bring on line with temporary vacuum

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Just Todia 6/3/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Tina Todia

Date: 6/14/11

Construction Day No.:

Time In: 0630

Time Out: 2030

Weather: 66°F Sunny

Items Worked On:



Gas Extraction Wells
Flare/piping Installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☐ Liner Repair
☒ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

ALG construction, ALG drilling

Summary of Work:

0630 arrive on site; safety meeting
0805 begin drilling 91AR
0930 meet w/ Michael Boos to determine wells
in cap area they are working in for
geomembrane repair
1100 move well 91AR 10' west of original location
due to refusal
2030 finish bring plant back on line

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

[Signature] 6/14/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County (I Landfill)

BC Personnel:

Frank Todia

Date: *6/6/11*

Construction Day No.:

Time In: *0630*

Time Out: *1930*

Weather: *Sunny 78°F*

Items Worked On:



Gas Extraction Wells



Flare/piping Installation



LFG Piping



Pressure Testing



Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

NEC construction, NEC drilling

Summary of Work:

*0630 arrive on site - safety meeting
0806 begin drilling 120R2
1100 change out PVC air + fuel main shut off's
to stainless steel
- set pumps in 51R, TEL09
- team broke 6" line 146R; repair immediately +
brought plant back on line
- dummy pump RW157 - 95 ft. to
modern
- bring plant back on line w/ fire ins
@ 1930*

Attachments:



Contractor Report



Field Notes



Other:

Frank Todia 6/6/11

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todia

Date: *6/7/11*

Construction Day No.:

Time In: *0650*

Time Out: *1830*

Weather: *humid & severe
hail storm*

Items Worked On:



Gas Extraction Wells



Flare/piping Installation



LFG Piping



Pressure Testing



Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

AEG construction, AEG drilling

Summary of Work:

- 0650 arrive on site - safety meeting
- 0800 weekly meeting
- 0915 severe hail storm; work shut down for the day; drilling @ 30' depth @ BW85R
- drilling will come back @ 1400 to attempt to finish well; Janet requested to stop well even though it would not be brought on line tonight; validate in Kottelrich
- finish drill BW85R but not tied to vacuum

Attachments:



Contractor Report



Field Notes



Other:

Janet Todia 6/7/11

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *4/8/11* Construction Day No.:

Time In: *0630*

Time Out: *1550*

Weather: *sunny 94°F*

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG drilling, AEG construction

Summary of Work:

- 0630 arrive on site - safety meeting*
- drill RW122R*
- tie in RW88R to permanent vacuum*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other: _____

[Signature] *4/8/11*
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: BRYANT KIEDROWSKI

Date: 6/9/11

Construction Day No.:

Time In: 0645

Time Out: 0600

Weather: 1700

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG CONSTRUCTION, AEG DRILLING, JESSE DELARCA
(WELLERT), BRIK McPECK (BO)

Summary of Work:

- DUG 12" HEADER TRENCH BACKUP. FUSED AND CONNECTED PIPE TO 12"x24" HEADER. 12" VALVE AND EW-38R LATERAL PIPE TEST BEGUN AT 1635. PLACED WITNESS PIPE OVER VALVE AND BURIED PIPE FULLY.
- EW-78R AND EW-81R DRILLED TO DEPTH. TEMPORARILY CONNECTED INTO SYSTEM. UNKNOWN PIPES STICKING OUT OF GROUND AT BOTH LOCATIONS.
- EW-122R PERMANENTLY CONNECTED INTO SYSTEM.
- NEW SITE FOR TEW-8R SURVEYED. SURVEY RISERS AROUND 12" HEADER PULLED.

Attachments:

- ☒ Contractor Report
- ☒ Field Notes
- ☒ Other: AIR MONITORING
DAILY TAILGATE

Bryant Kiedrowski 6/9/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: KIEDROWSKI

Date: 6/10/11 Construction Day No.:

Time In: 0640

Time Out: 1600

Weather: 80° RAIN, SUN

Items Worked On:

- | | |
|--|---|
| ☒ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping Installation | ☐ Liner Installation |
| ☒ LFG Piping | ☐ Liner Repair |
| ☒ Pressure Testing | ☐ Excavation/Trenching |
| ☐ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

AEB CONSTRUCTION, AEB DRILLING

Summary of Work:

- INSTALLED EW-143R AT DEPTH OF 80 FT DUE TO STORMS. APPROVED BY CHRIS JAQUET. TEMPORARILY CONNECTED. TO BE PERMANENTLY CONNECTED ON 6/13/11
- EW-78R AND EW-81R PERMANENTLY CONNECTED
- ELECTRICIAN BILL BUTCHLEY WILL BE HERE ON 6/13/11 TO SERVE ELECTRICAL FOR LRG GAS CONNECTION.
- CONSTRUCTION CREW OFFSITE AT 11:15 DUE TO STORM. DRILLING CREW OFFSITE AT 1525.
- PRESSURE TEST OF 700LF-12" HEADER AND TWO 200LF-6" LATERALS, STARTED 6/9/11. ALL PASSED.

Attachments:

- ☐ Contractor Report
☒ Field Notes
☐ Other: AIR MONITORING
DAILY TAILGATE

Bryan Kiedrowski 6/10/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County (L Landfill)

BC Personnel: KIEDROWSKI

Date: 6/11/11 Construction Day No.:

Time In: 0640

Time Out: 1315

Weather: 75° CLOUDY, RAIN

Items Worked On:

- | | |
|--|---|
| ☐ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping installation | ☐ Liner Installation |
| ☐ LFG Piping | ☐ Liner Repair |
| ☐ Pressure Testing | ☐ Excavation/Trenching |
| ☐ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

AEG CONSTRUCTION, AEG DRILLING

Summary of Work:

- DRILL RIG IS BEING SERVICED. NO DRILLING TODAY
- PLACING PUMPS IN 7 WELLS. CENTERED IN NORTHWEST CORNER OF THE SITE. (TEN-1R, TEN-2R, TEN-3, EW-164R, EW-165R, EW-30R, EW-172R)
- CONNECTION OF AIR AND FORCEMAIN NEAR EW-147R.
- PLACED 36" CORRUGATED PIPE VALVES FOR AIR AND FORCEMAIN ISO VALVES NEAR TEN-3R AND EW-164R
- NICKED AND REPAIRED 4" FM GOING WEST FROM EW-147R. PIPE WAS UNDER 2"-3" COVER BEFORE REGRADING.

Attachments:

- ☐ Contractor Report
☒ Field Notes
☐ Other: AIR MONITORING
DAILY TAILGATE

Bryant Kiedrowski 6/11/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Toner Todia

Date: *6/13/11*

Construction Day No.:

Time In:

0645

Time Out:

1935

Weather:

Sunny + 70°F

Items Worked On:



Gas Extraction Wells

Flare/piping Installation

LFG Piping

Pressure Testing

Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

NEB construction, NEB drilling

Summary of Work:

- 0645 arrived in site safety meeting
- drill BW54R BW50R + BW49R + temporary tie in
- make permanent tie in 143R
- work on vault for LR6
- work on lateral trench BW155R (1" with force main?)
- make rock tie ins tomorrow

Attachments:



Contractor Report

Field Notes

Other:

Paul Helms

Signature of CQA Monitor

6/13/11

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140930

Location: Lorain County II Landfill

BC Personnel:

Imet Todia

Date: *6/14/11*

Construction Day No.:

Time In: *0700*

Time Out:

1845

Weather:

sunny 70F

Items Worked On:



Gas Extraction Wells
Flare/piping installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☐ Liner Repair
☒ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

ARG construction, ARG drilling

Summary of Work:

*0700 arrive on site; safety meeting
0800 weekly meeting
-drill BW156 + BW157
-permanent tie in BW156 + BW157, BW49R
-make sure have all parts for new
tie in for CR6
-call Willett to survey 110R, 102R, 22R
due to wear on boat finishing cap on
south slope*

Attachments:

☐ Contractor Report
☐ Field Notes
☐ Other:

Imet Todia *6/14/11*
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel:

Bret Todia

Date: *6/15/11*

Construction Day No.:

Time In: *0630*

Time Out: *1830*

Weather:

US sunny

Items Worked On:



Gas Extraction Wells
Flare/piping Installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☐ Liner Repair
☒ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

ARG Construction, ARG Drilling, Wellnet Engineering (survey)

Summary of Work:

- 0630 arrive on site; safety meeting
- 0730 begin drill RW62R2
- 0745 begin completion of LR6
- 0745 begin permanent fill ins 50R, 54R
- Wellnet take 22R, 110R, & 107R + complete survey of all units

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Bret Todia
Signature of CQA Monitor

6/15/11
Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Jimmy Tedia

Date: *6/16/11* Construction Day No.:

Time In: *0445*

Time Out: *1700*

Weather: *Tstorms + 70°F*

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARB construction, ARB drilling

Summary of Work:

- 0830 arrive on site; safety meeting*
- geomembrane repair ATR + BW155R + 91AR*
- drill TWS08 + BW22R*
- tie in wells to 12" header on the north slope 54R, 50R, 49R*
- earthwork around wells*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Jimmy Tedia *6/16/11*
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Tina A Todia

Date: 6/17/11

Construction Day No.:

Time In: 0630

Time Out: 1750

Weather: sunny 70°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG construction, AEG drilling,
Willert Engineering

Summary of Work:

- 0630 arrive on site; safety meeting
- geomembrane repair 120R2, BW91AR (both abandon), BW122R, 141R, 142BR, 143R, 145R2
- drill BW 145R + BW 110R
- deep pump in BW 153R
- 12 hours geomembrane repair work today

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Tina A Todia 6/17/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140930

Location: Lorain County II Landfill

BC Personnel:

Just Todia

Date: *6/18/11*

Construction Day No.:

Time In: *0630*

Time Out: *1700*

Weather: *sunny 79°F*

Items Worked On:



Gas Extraction Wells



Flare/piping installation



LFG Piping



Pressure Testing



Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

ARF construction, ARB drilling

Summary of Work:

- 0630 arrive on site; construction meeting*
- get membrane repair DW85R, DW71R, DW78R, DW81R, DW22R*
- drill DW110R*

Attachments:



Contractor Report



Field Notes



Other:

Just Todia 6/18/11

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Frank Todia

Date: 6/20/11

Construction Day No.:

Time In: 1630

Time Out: 2000

Weather: rainy 80°F
humid

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG Construction, AEG Building
DEMOS

Summary of Work:

- 0630 arrive on site
- 0802 finish upcoming BWAR for permanent fix in
- request to repair BW14 & BW15 by Weaver Bros due to cap work
- geomembrane repairs 107R, 22R, 110R, & small boot repair on well at BW15 due to cap construction

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Frank Todia 6/20/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Frank Todia

Date: 6/21/11

Construction Day No.:

Time In: 0630

Time Out: 1930

Weather: humid 83°F
rain, overcast

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABC Construction

Summary of Work:

- 0630 arrive on site; safety meeting
- tie in EW54R permanent + EW24R permanent + TW108 permanent
- remove 4" temporary lateral
- small pinhole repair on host vessel at EW14

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Frank Todia 6/21/11
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GOCS Phase 1
Project No.: 140880

Location: Lorain County II Landfill

BC Personnel: KIEDROWSKI

Date: 6/22/11 Construction Day No.:

Time In: 0645

Time Out: 1930

Weather: 85° SUNNY

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG CONSTRUCTION

Summary of Work:

- WORKED ON PUNCHLIST ITEMS:
 - MOVED A+FM STICKUPS CLOSER TO WELLS
 - MOUNDED SOIL AROUND AND ^{BAK REMOVED} ~~RAISED~~ FLAGGING NEAR WELLS
- INSTALLED LFG ISOLATION VALVE TO LRG
- ABANDONED AND REMOVED 4" LATERAL RUNNING FROM EW-39R TO EW-40R
- RAISED LATERAL STICKUPS AT EW-153 AND EW-154

Attachments:

- ☐ Contractor Report
- ☒ Field Notes
- ☒ Other: DAILY TAILGATE

Bryant Kiedrowski 6/23/11
Signature of CQA Monitor Date

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Kiedrowski

Date: Friday, June 24, 2011

Construction Day No.:

Time In: 0700

Time Out: 1300

Weather: 70 F, Rain

Items Worked On:

- | | |
|--|---|
| ☒ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping Installation | ☐ Liner Installation |
| ☐ LFG Piping | ☐ Liner Repair |
| ☐ Pressure Testing | ☐ Excavation/Trenching |
| ☐ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

AEG Construction, Rick Kostelnick and Chris Jaquet (Republic)

Summary of Work:

0700 - BKK onsite. AEG onsite. Began cleaning up staging area.

0900 - Raised well, lateral, air, and forcemain at EW-152. Site ready for walk through.

0915 - Began trying to contact Rick Kostelnick concerning site walk.

1000 - Rick Kostelnick thought site walk would occur in afternoon. Will try to do it this morning.

1030 - Bob Minor asked for Janet Todla to return to site so Rick Kostelnick could sign certificate of completion for drillers.

1100 - Rick Kostelnick in budget meeting. Site walk will occur after lunch.

1130 - Janet Todla will return to site for certificate of completion signing.

1230 - Rick Kostelnick and Chris Jaquet performed walk through. Soil needed regrading in three locations, but site will fix due to rain and crew moving to Wyandot. No further changes.

1300 - BKK offsite.

Attachments:

- ☐ Contractor Report
- ☒ Field Notes
- ☒ Other: Daily Tailgate

Bryant Kiedrowski

Signature of CQA Monitor

Friday, June 24, 2011

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: James Todia

Date: 6/24/11

Construction Day No.:

Time In: 0945

Time Out: 1300

Weather: Fin. Overcast
83°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping Installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARB construction

Summary of Work:

- obtain sign off sheets from Kostelnick
for construction & drilling after
final review of finish work

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

[Signature] 6/24/11

American Environmental Group, Ltd



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Group Ltd.

DAILY DIARY

DATE: 4-19-11

Tues.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING _____		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT _____		STATION _____	LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION _____		TRENCH DEPTH _____	
PERFORATED PIPE-DIA. _____		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA. _____		STATION _____	LINEAR FT. _____
COMPLETION: (WELL NUMBERS) _____		TRENCH DEPTH _____	
_____		SUBHEADER # _____	PIPE DIA. _____
_____		STATION # _____	LINEAR FT. _____
_____		TRENCH DEPTH _____	
_____		LATERAL: # _____	PIPE DIA. _____
_____		STATION _____	LINEAR FT. _____
_____		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
Rain		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>8:00 A.M.</u>		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>4:00 P.M.</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Today we mobbed in on site and got trailers stationed and unloaded it is raining and we had 1-truck with pipe come in and unloaded it.

We also had safety meeting and went over Health and safety plan for work to be done at this site Janet Todia is QC A for this job.

Janet Todia 4/22/11
CLIENT REPRESENTATIVE DATE
Janet A Todia CDA Brown & Caldwell
NAME & TITLE

Billy Brown 4-19-11
AEGL SITE SUPERVISOR DATE



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Environmental
Group Ltd.

DAILY DIARY

DATE: 4-20-11

Wed.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
			LINEAR FT.
		STATION	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

COMMENTS:

Today we had safety meeting and went over plans for the day, we also had trucks come in with pipe and materials to unload and we also began fusing pipe. We put 780 feet of 12" together and fused 600 feet of 6" up in between rain showers Janet Todia is are QC with Brown and Caldwell.

Janet A Todia 4/22/11
CLIENT REPRESENTATIVE DATE

Billy Brown 4-20-11
AEGL SITE SUPERVISOR DATE

Janet A Todia CQA Brown & Caldwell
NAME & TITLE



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DAILY DIARY

DATE: 4-21-11

Thur.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

COMMENTS:

Today we had safety meeting and began fusing up pipe also after talking with Janot and Rick we had 1 truck haul dirt to be placed in different locations. The site had there dozer pushing dirt we hauled 27- loads from 8:30 till 4:30 site also loaded truck we had 7 Hours time in hauling with 1- truck and driver. Surveyor was also on site and staked out tie in points and for tee's for 12" header going in we also fused up 1,000 feet of 6" pipe and 1,400 feet of 4" pipe. We also had to start moving pipe and materials to top of hill because trucks could not make it from all the rain we have had.

Paul Todis 4/22/11
CLIENT REPRESENTATIVE DATE

Billy Brown 4-21-11
AEGL SITE SUPERVISOR DATE

Paul A Todis CQA Blauy & Caldwell
NAME & TITLE



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DAILY DIARY

DATE: 4-22-11

Fr.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
			LINEAR FT.
		STATION #	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

COMMENTS:

Today we had safety meeting and talked with Janet and with Rick to let them know what plans are and depending on weather what we had planned. We began moving all parts and the rest of pipe from below to the top and inventory was taken. Still raining and more rain coming. Talked with Janet and Rick and decide to make it a early day can not get any thing done with the rain.

David M. Loria 4/22/11
CLIENT REPRESENTATIVE DATE

Billy Brown 4-22-11
AEGL SITE SUPERVISOR DATE

Janet A Todia CQA Brown & Caldwell
NAME & TITLE

DAILY DIARY

DATE: 4-25-11

Mon.

PROJECT NAME	LORAIN COUNTY L/F
PROJECT#	202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		HEADER #	TRENCH DEPTH
PERFORATED PIPE-DIA.		STATION	PIPE DIA.
SOLID PIPE -DIA.		SUBHEADER #	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION #	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

COMMENTS:

Today we held safety meeting and we began fusing up pipe, the rain began again and we had to quit fusing pipe Tim and myself got with Janet with Brown & Caldwell. We decided to talk with Rick on weather and we all decided to come back in on Thursday.

Bill Bode 5/5/11
CLIENT REPRESENTATIVE DATE

NAME & TITLE Shri A. Todia CAA Bangalore Collection 11

Billy Brown	4-25-11
AEGL SITE SUPERVISOR	DATE



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DAILY DIARY

DATE: 4-27-11 Wed.

PROJECT NAME Lorain County Landfill
PROJECT# 202-11-111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION	TRENCH DEPTH
		Temp. lateral EW-158	PIPE DIA. 6"
		STATION	LINEAR FT. 180'
		RISER HEIGHT 3'	TRENCH DEPTH
		Temp. lateral EW-159	PIPE DIA. 6"
		STATION	LINEAR FT. 280'
		RISER HEIGHT 3'	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

GENERAL INFORMATION

WEATHER CONDITIONS
cloudy/rain

START TIME 7:00 A.M.

STOP TIME 2:00 P.M.

COMMENTS:

Today 2 of us had come onsite to run two 6" temporary jumper laterals for wells EW-158 and EW-159 that had been drilled previously. We fabed up the 90 degree elbow riser and fused it to 180' of pipe for lateral EW-158 tying it into the existing vacuum riser at well EW-154 using a 6" tee and 2-6x6 femco's. We also fabed up a 90 degree elbow and attached it to 280' of pipe and ran this lateral from EW-159 to an existing above ground 6" lateral coming from well EW-36R tying it in with a 6" tee and 3-6x6 femco's. Both of the jumper laterals had 2" wellheads installed and were ready to be put on line by 2 pm.

Parts Used: 2-6" 90 elbows, 2-6" tee's, 5-6x6 femco's, 4-6x4 femco's, 4-4x2 donuts, 4-2" kanaflex clamps, 6' of kanaflex hose, 2-2" wellheads

Amelia Todia 5/5/11
CLIENT REPRESENTATIVE DATE

Darren Goodhart 4-27-2011
AEGL SITE FOREMAN DATE

Amelia Todia C&A Brown & Caldwell
NAME & TITLE



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DAILY DIARY

DATE: 4-29-11

Fr.

PROJECT NAME LORAIN COUNTY L/F
PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH	
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
		TRENCH DEPTH	
COMPLETION: (PARTS USED)		SUBHEADER #	PIPE DIA.
1-6" 90	6-6" EFC 2-2" wellheads	STATION #	LINEAR FT.
1-6" tee	2-2" 90	TRENCH DEPTH	
4-6" flanges	2-2" tees	LATERAL: # EW-158 to EW-154	PIPE DIA. 6"
4-6" back up rings	4-2x1 reducers	STATION 0+00 to 1+41	LINEAR FT. 141'
2-6" gaskets	4-1" trans fittings	RISER HEIGHT 5'	TRENCH DEPTH 3'4"
2-6" bolt kits (sm)	4-1" steel caps	2" AIR: # EW-154 to EW-158	PIPE DIA. 2"
GENERAL INFORMATION		STATION 0+00 to 1+41	LINEAR FT. 141'
WEATHER CONDITIONS		RISER HEIGHT 6'	TRENCH DEPTH 3'4"
Rain/ sunny		2" Force main: # EW-154 to EW-158	PIPE DIA. 2"
START TIME 7:00 A.M.		STATION 0+00 to 1+41	LINEAR FT. 141'
STOP TIME 7:30 P.M.		RISER HEIGHT 6'	TRENCH DEPTH 3'4"
		SUMPS	TIE IN 1-6" 2hrs.
			T&M 2 hrs.

COMMENTS:

Today we started off with our safety meeting and then went over the hill and started trenching lateral from EW-158 to EW-154. After trench was dug we installed 6" pipe in trench then tie in 6" to existing 6" with a tee risers for EW-158. We then talked to Janet and Rick about putting 2" air and force main in trench they approved it and we installed 2" in trench line. We then shot in pipe and it all shot in good so we started back filling trench set survey riser every 50 ft. and ran caution tape down trench line. We then dug down to existing 12" CMP to try to feed are 2" pipes thru pipe wouldn't go thru so there for we talked to Janet about running new 12" CMP road crossing Saturday they approved to do that. We spent 2 hours on 6" tie in and half the crew. We then went over to EW- 40R2 and installed a 6" temp. line above ground for vaccum and hooked up well with a 2" wellhead. We spent 1 hour T&M on tie in. We then went to the temp. lateral from EW-159 and installed a 6" tee at tie in point above ground with 3- 6" EFC to well would have vaccum. We spent 1 hour T&M on tie in. We also put a new 2" landtec wellhead on EW-154. 6" lateral for EW-154 was air tested at 25 PSI for 4 hrs and then passed.

Janet Adia 515111
CLIENT REPRESENTATIVE DATE
Janet Adia CDR Brown & Caldwell
NAME & TITLE

Billy Brown 4-29-11
AEGLE SITE SUPERVISOR. DATE



American
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Group Ltd.

DAILY DIARY

DATE: 4/30/2011

Sat

PROJECT NAME LORAIN COUNTY LF

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	TRENCH DEPTH
LINEAR FEET OF WELL COMPLETION		HEADER #	PIPE DIA.
PERFORATED PIPE-DIA.		STATION	TRENCH DEPTH
SOLID PIPE -DIA.		2" AIR # <u>EW-47R to tie in</u>	PIPE DIA. <u>2"</u>
COMPLETION: (PARTS USED)		STATION # <u>0+00 to 0+30</u>	LINEAR FT. <u>30'</u>
2-4" tees	2-1" steel caps	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
2-4x2 reducers	60ft-12" CMP	2" Force main: # <u>EW-47R to tie in</u>	PIPE DIA. <u>2"</u>
2-2" tees	1-2" wellhead	STATION <u>0+00 to 0+30</u>	LINEAR FT. <u>30'</u>
2-2" 90		RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
2-2x1 reducers		2" AIR: # <u>EW-158 to tie in</u>	PIPE DIA. <u>2"</u>
2-1" trans fittings		STATION <u>1+41 to 2+80</u>	LINEAR FT. <u>139'</u>
GENERAL INFORMATION		RISER HEIGHT	TRENCH DEPTH <u>3>4</u>
WEATHER CONDITIONS		2" Force main: # <u>EW-158 to tie in</u>	PIPE DIA. <u>2"</u>
sunny		STATION <u>1+41 to 2+80</u>	LINEAR FT. <u>139'</u>
START TIME <u>7:00 A.M.</u>		RISER HEIGHT	TRENCH DEPTH <u>3>4</u>
STOP TIME <u>5:00 P.M.</u>		12" CMP <u>60ft.</u>	TIE INS <u>2-2" 1hr.</u>
			<u>2-4" 1hr.</u>
			T&M <u>1 hrs.</u>

COMMENTS:

Today we started with our safety meeting and then went down the hill and started trenching from EW-158 to tie in point for 2". We then trenched thru road and then exposed the 2" and 4" existing pipe spent 1hr exposing pipe then we trenched small lateral going to EW-47R. After we finished trenching we then put 60ft of 12" CMP across road and bolted it all together in trench. We then feed both pipes thru CMP and connected it all together and air tested 310 ft of both 2" air and force main. Air was at 100 PSI and force main was at 75 PSI for 4hrs. Air tested passed by Janet and we then tie in both laterals. We spent a total of 2 hrs tie in both laterals. Road crossing started at station mark 2+06 and ended at 2+68. We then started back filling trench and road crossing. We got 75ton of rock material off of truck for road crossing. While we were finishing back filling we went over and ran a 4" temp. line for EW-39R so they could have vacuum on well. We hooked up EW-39R with a new 2" land tec wellhead we spent 1hr T&M on tie in above ground. We then wrapped things up and left for the day.

Janet Rodia 5/5/11
CLIENT REPRESENTATIVE DATE
Janet Rodia CCR Brown & Caldwell
NAME & TITLE

Billy Brown 4-30-11
AEGLE SITE SUPERVISOR DATE



American
Environmental
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DAILY DIARY

DATE: 5-02-11

Mon.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION#	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		RISER HEIGHT	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: Parts used		2" AIR	PIPE DIA.
		STATION #	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		2" FORCE MAIN	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		2" AIR	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		4x2 DUAL CONT.	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
RAIN		RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00 A.M.</u>		TIE IN'S	PUMPS
STOP TIME <u>9:00 P.M.</u>			

COMMENTS:

Today we arrived on site and had safety meeting Tim and I talked and he made the call not to drill because of weather lighting and rain.
We went down with Janet and talked to Rick and Chris about shutting down until Thursday do to the weather they were ok with it so we left and went home and we plan to be back up first thing Thursday morning.

Paul M. Wells 5/23/11
CLIENT REPRESENTATIVE DATE
Janet A. Tucke, Bowman and Caldwell CMAA
NAME & TITLE

Billy Brown 5-02-11
AEGLE SITE SUPERVISOR DATE



American
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Group Ltd.

DAILY DIARY

DATE: 5-05-11

Thurs.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: Parts used		2" AIR	PIPE DIA.
		STATION #	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		4x2 DUAL CONT.	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		2" AIR	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
Clear/Sunny		RISER HEIGHT	TRENCH DEPTH
		4x2 DUAL CONT.	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME 7:00 A.M.		TIE IN'S	PUMPS EW-144
STOP TIME 3:00 P.M.			

COMMENTS:

Today we came back out on site and it was still muddy from all the rain thur the week so me, Tim and Janet went down to talk to Rick about shutting down for the weekend in because of the rain coming this weekend. Rick asked us to haul some dirt for him. We hauled for 6 hours. We also went over to EW-144R and stuck well so we could drop a pump down it we set pump at 93ft S/N# 4-3521. We then went around to every well that calls for a pump for Janet to see if they had a 2" wellhead or a 3" wellhead so she could order the right pump kits for the wells that have 3" wellheads and order the parts so we could drop the pumps down them. We then wrapped things up and left and went home for the weekend. We plan to be back first thing Monday morning.

[Signature] 5/23/11
CLIENT REPRESENTATIVE DATE
[Signature] CQA
NAME & TITLE

Billy Brown 5-05-11
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5-9-11

Mon.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
		STATION	TRENCH DEPTH
COMPLETION: Parts used		2" AIR To EW-120R	PIPE DIA. 2"
2-4x2 dual cont tee's 4-1" trans fittings		STATION # 0+0 to 2+17	LINEAR FT. 217
2-4x2 dual cont 90's		RISER HEIGHT 7'	TRENCH DEPTH 2>3
2-4x2 dual cont endseals		4x2 DUAL CONT. To EW-120R	PIPE DIA. 4x2
2- 2" 90's		STATION 0+0 to 2+17	LINEAR FT. 217
2-2" tee's		RISER HEIGHT 7'	TRENCH DEPTH 2>3
4-2x1 reducers		2" AIR To EW-224	PIPE DIA. 2"
GENERAL INFORMATION		STATION 0+0 to 0+98	LINEAR FT. 98'
WEATHER CONDITIONS		RISER HEIGHT 5'	TRENCH DEPTH 2>3
Clear/Sunny		4x2 DUAL CONT. To EW-224	PIPE DIA. 4x2
START TIME 7:00 A.M.		STATION 0+0 to 0+98	LINEAR FT. 98'
STOP TIME 7:00 P.M.		RISER HEIGHT 5'	TRENCH DEPTH 2>3
		TIE IN'S 1-2" 1-4x2 4-HOURS	PUMPS 1-EW-158

COMMENTS:

We started with our safety meeting then went over on capped area and started trenching line going to EW-120R and also trench lateral going to EW-224. After we finished trenching we then put 2" air and 4x2 dual cont. in trench after we installed all pipe into both trenches we then put air tested on both 2" and 4x2 lines. We put 2" air at 100psi the inner pipe of the force main at 50psi and the out side pie at 25psi for 4hrs. While air test was on we went over and installed a pump at EW-158. Pump was set at 95ft S/N# 4-3509. We then were asked by Rick if we could welled up 280 ft. of 4" pipe with a 6x4 reducer on the end of pipe so we made it up for him. After we finished Janet came over and check the air test and passed it so we tied in the 2" air and the 4x2 dual cont. with tees into existing lines. We spent 4hrs on tie in. We then set survey risers at every 50ft and fittings and finished back filling then left for the day.

John Todia 5723111
CLIENT REPRESENTATIVE DATE

John Todia Brown/Goldman CQA
NAME & TITLE

Billy Brown 5-9-11
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5-10-11 Tues.

PROJECT NAME Lorain County Landfill

PROJECT# 202-11-111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER # <u>8"</u>	PIPE DIA. <u>8"</u>
LINEAR FEET OF DRILLING-ABANDONMENT		STATION <u>0+00 to 4+00</u>	LINEAR FT. <u>400'</u>
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH <u>3' to 7'</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	LINEAR FT. _____
			TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
		STATION # _____	LINEAR FT. _____
			TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
<u>sunny</u>		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>8:00 A.M.</u>		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>7:00 P.M.</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Today we started trenching on the 8" header in Lorain 1 where it was staked out. We had dug up 400 feet of the header and found out that it was off grade. We then started to regrade the pipe at 2% which was the best grade we could get from low point to the start of the trench. During the trenching we had scraped the pipe creating a small hole which was temporarily fixed with an extrusion gun as we had to order 2 new 8" electro couplers to fix the problem area. The header was regraded and backfilled within 100 feet of the end where the pipe needed fixed caution tape and existing dirt was replaced during backfill. Dressup and cleanup of 300 feet of the header finished out the day.

Michael L. Loria 5/23/11
CLIENT REPRESENTATIVE DATE

Darren Goodhart
AEGL SITE FOREMAN

5-10-2011
DATE

Robert A. Polia Groundwater Collection CQA
NAME & TITLE



American
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DAILY DIARY

DATE: 5-10-11

Tues.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING _____		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT _____		STATION _____	LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION _____		STATION _____	TRENCH DEPTH _____
PERFORATED PIPE-DIA. _____		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA. _____		STATION _____	LINEAR FT. _____
		STATION _____	TRENCH DEPTH _____
COMPLETION: Parts used		2" AIR To EW-148	PIPE DIA. 2"
1-4x2 dual cont tee's 2-1" trans fittings		STATION # 0+00 to 0+49	LINEAR FT. 49'
1-4x2 dawl cont 90's		RISER HEIGHT 6'	TRENCH DEPTH 2>3
1-4x2 dawl cont endseals		4x2 DUAL CONT. To EW-148	PIPE DIA. 4x2
1- 2" 90's		STATION 0+00 to 0+49	LINEAR FT. 49'
1-2" tee's		RISER HEIGHT 6'	TRENCH DEPTH 2>3
2-2x1 reducers		2" AIR	PIPE DIA. _____
GENERAL INFORMATION		STATION _____	LINEAR FT. _____
WEATHER CONDITIONS		RISER HEIGHT _____	TRENCH DEPTH _____
Clear/Sunny		4x2 DUAL CONT.	PIPE DIA. _____
START TIME <u>7:00 A.M.</u>		STATION _____	LINEAR FT. _____
STOP TIME <u>5:00 P.M.</u>		RISER HEIGHT _____	TRENCH DEPTH _____
		TIE IN'S 1-2" and 1-4x2	PUMPS EW-224
			Ew-148

COMMENTS:

Today we started off with our safety meeting we then started fusing up 2" pipe and building lateral for EW-148 so we could get air test on pipes because we could trench until after lunch. After we build the 2" and 4x2 dual cont. we put air test on pipe at 2" air at 100psi the inner pipe of force main at 50psi and the outer force main pipe at 25 psi. While air test was on we dropped a pump at EW-224 at 100ft S/N#4-3516. Dean and Janet also went to EW-120R to see if pump would go in but well was slugged out so we didn't put pump in well. They then went over to EW-145R and tried to put dummy pump in well and the well was pinched off so we didn't put pump in well. Then we went over to EW-148 put dummy pump in well dummy pump went down so we set pump at EW-148 at 77ft S/N#4-3523. We then trenched lateral for EW-148 put pipe in trench and tied in pipe we it took 2hrs. We then back filled trench and left for the day.

Bill Morris 5/23/11
CLIENT REPRESENTATIVE DATE

Billy Brown 5-10-11
AEGL SITE SUPERVISOR DATE

Paul A. Tadiq Paul A. Tadiq Paul A. Tadiq
NAME & TITLE



American
Environmental
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DAILY DIARY

DATE: 5-11-11

Weds.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL# <u>To TEW-3R</u>	PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT		STATION <u>0+00 to 0+67</u>	LINEAR FT. <u>67'</u>
LINEAR FEET OF WELL COMPLETION		RISER HEIGHT <u>5'</u>	TRENCH DEPTH <u>3>4</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	LINEAR FT. _____
			TRENCH DEPTH _____
COMPLETION: Parts used		2" AIR <u>To EW-149</u>	PIPE DIA. <u>2"</u>
2-6" flanges		STATION # <u>0+00 to 1+79</u>	LINEAR FT. <u>179'</u>
2-6" 90's		RISER HEIGHT <u>5"</u>	TRENCH DEPTH <u>2>3</u>
2-2x1 reducers		2" FORCEMAIN. <u>To EW-149</u>	PIPE DIA. <u>2"</u>
2- 2" 90's		STATION <u>0+00 to 1+79</u>	LINEAR FT. <u>179'</u>
1-2" tee's		RISER HEIGHT <u>5'</u>	TRENCH DEPTH <u>2>3</u>
2-1" trans fittings		2" AIR _____	PIPE DIA. _____
GENERAL INFORMATION		STATION _____	LINEAR FT. _____
WEATHER CONDITIONS		RISER HEIGHT _____	TRENCH DEPTH _____
Clear/Sunny		4x2 DUAL CONT. _____	PIPE DIA. _____
START TIME <u>7:00 A.M.</u>		STATION _____	LINEAR FT. _____
STOP TIME <u>5:30 P.M.</u>		RISER HEIGHT _____	TRENCH DEPTH _____
		TIE IN'S <u>1-2" and 1-4" and 1-6"</u>	PUMPS _____
		<u>4HOURS</u>	

COMMENTS:

Today we started off with our safety meeting then started trenching on 2" air and force main line going to EW-149. While we were trenching we put air test on both 2" lines they were air tested at 100psi on the air line and 50psi on the force main. We also put a air test on the 6" lateral for TEW-3R at 25psi. We put air test on for 4 hrs. then Julie the QC came over and passed them. So we put the 2" pipes in trench going to EW-149 then tied in the lines with a 2" tee and a 4" tee reduced to 2". We spent 2hrs. on tie in. We then started back filling trench. We then went over to TEW-3R and trenched 6" lateral going to TEW-3R. We then got with the gas plant and tie in the 6" lateral going to TEW-3R. We spent 2hrs on tie in. We hooked up new well with 2" land tec wellhead. We set survey risers at every fitting and 50ft mark. While we were finishing back filling the guys were up fusing laterals for tomorrow. We abandon TEW-3.

Paul M. Loeck 5/23/11
CLIENT REPRESENTATIVE DATE

Billy Brown 5-11-11
AEGL SITE SUPERVISOR DATE

Robert D. Tedia SALES
NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5-11-11 wed.

PROJECT NAME Lorain County Landfill
PROJECT# 202-11-111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER # <u>8"</u>	PIPE DIA. <u>8"</u>
LINEAR FEET OF DRILLING-ABANDONMENT		STATION <u>0+00 to 1+00</u>	LINEAR FT. <u>100'</u>
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH <u>3' to 7'</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH _____
		SUBHEADER # _____	PIPE DIA. _____
		STATION # _____	LINEAR FT. _____
			TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____
GENERAL INFORMATION			
WEATHER CONDITIONS			
<u>sunny</u>			
START TIME <u>7:00 A.M.</u>			
STOP TIME <u>12:00 P.M.</u>			

COMMENTS:

Today we started to finish the regrading of the 8" header on lorain 1. During the regrade the 2 electro couplers had come in and we had started to fix the scrape in the pipe we had cut out a 12 inch section of the header at which we replaced using to 8" electro couplers. We finished the regrade and then started backfilling the pipe and adding in caution tape 1 foot above the pipe. We then dressed up and cleaned up the area of which the work was done and returned to working on lorain 2.

5/23/11
CLIENT REPRESENTATIVE _____ DATE _____
Barry Attolia Sr. Environmental CQA
NAME & TITLE

Darren Goodhart
AEGL SITE FOREMAN

5-11-2011
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5-12-11

Thurs

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION#	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		RISER HEIGHT	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: Parts used		2" AIR	PIPE DIA.
		STATION #	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		2" FORCE MAIN	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		2" AIR	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
RAIN		RISER HEIGHT	TRENCH DEPTH
		4x2 DUAL CONT.	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00 A.M.</u>		TIE IN'S	PUMPS <u>EW-149</u>
STOP TIME <u>9:00 P.M.</u>			

COMMENTS:

Today were started with our safety meeting and do to all the rain over night and the weather we went over to EW-149 and welded a 6" flange on well and dropped a pump down EW-149. Pump was set at 113ft pump S/N#4-3515. While we were doing that we started welding up 4" pipe but do to the weather we shut down for the day and went back to the motel.

Amelia Medina 5/23/11
CLIENT REPRESENTATIVE DATE
James A. Tadia Sr. Environmental CQA
NAME & TITLE

Billy Brown 5-12-11
AEGL SITE SUPERVISOR DATE



American
Environmental
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DAILY DIARY

DATE: 5-13-11

Fri.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL# <u>To EW-141R</u>	PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT		STATION# <u>0+00 to 0+31</u>	LINEAR FT. <u>31'</u>
LINEAR FEET OF WELL COMPLETION		RISER HEIGHT <u>5'</u>	TRENCH DEPTH <u>2>3</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	LINEAR FT. _____
			TRENCH DEPTH _____
COMPLETION: Parts used		2" AIR <u>To EW-150</u>	PIPE DIA. <u>2"</u>
1-4" tee's 2-1" trans fittings		STATION # <u>0+00 to 2+32</u>	LINEAR FT. <u>232'</u>
1-4x2 reducer 1-6" bolt kit (sm)		RISER HEIGHT <u>9'</u>	TRENCH DEPTH <u>2>3</u>
2-6" flanges 1-6" Gasket		2" FORCE MAIN <u>To EW-150</u>	PIPE DIA. <u>4x2</u>
2- 2"90's 2-6"90's		STATION <u>0+00 to 2+32</u>	LINEAR FT. <u>232'</u>
1-2" tee's 1-6" slip cap		RISER HEIGHT <u>9'</u>	TRENCH DEPTH <u>2>3</u>
2-2x1 reducers		2" AIR _____	PIPE DIA. _____
GENERAL INFORMATION		STATION _____	LINEAR FT. _____
WEATHER CONDITIONS		RISER HEIGHT _____	TRENCH DEPTH _____
Clear/Sunny		4x2 DUAL CONT. _____	PIPE DIA. _____
START TIME <u>7:00 A.M.</u>		STATION _____	LINEAR FT. _____
STOP TIME <u>6:00 P.M.</u>		RISER HEIGHT _____	TRENCH DEPTH _____
		TIE IN'S <u>1-2" and 1-4" and 1-6"</u>	PUMPS <u>EW-150</u>
		<u>4hours</u>	

COMMENTS:

Today we started with our safety meeting and then went over to EW-150 and trrenched lateral. After we finished trenching lateral we installed pipe in trench we then put air test on pipes. The 2" air was at 100 psi and the 2" force main was 50 psi. While we were waiting for air test we went over to EW-141 and trrenched lateral to EW-141R. After Janet got the ok from the gas plant we abandon EW-141 and tie in to existing riser with a 6" 90 and the tied in now lateral to EW-141R. We shot in pipe and it all was 3% or more grade. We then hooked up new well with existing 2" wellhead. Then after the air test was on for 4hrs Janet checked and passed air test so we tie in 2" air and 2" force main with 2" air with and the force main with a 4" tee reduced to 2". We spent a total of 2hrs on 2" and 4" tie in and 2hrs on 6" tie in. While we were finishing back filling we set a pump down EW-150 at 102ft S/N#4-3524. We then wrapped things up and left.

5723/11
CLIENT REPRESENTATIVE DATE

Billy Brown 5-13-11
AEGL SITE SUPERVISOR DATE

James A. Tolia Brown
NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5-14-11

SAT.

PROJECT NAME LORAIN COUNTY L/F

PROJECT# 202-111-11

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION#	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		RISER HEIGHT	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: Parts used		2" AIR	TRENCH DEPTH
		STATION #	PIPE DIA.
		RISER HEIGHT	LINEAR FT.
		2" FORCE MAIN	TRENCH DEPTH
		STATION	PIPE DIA.
		RISER HEIGHT	LINEAR FT.
		2" AIR	TRENCH DEPTH
		STATION	PIPE DIA.
		RISER HEIGHT	LINEAR FT.
		4x2 DUAL CONT.	TRENCH DEPTH
		STATION	PIPE DIA.
		RISER HEIGHT	LINEAR FT.
		TIE IN'S	PUMPS
GENERAL INFORMATION			
WEATHER CONDITIONS			
RAIN			
START TIME <u>7:00 A.M.</u>			
STOP TIME <u>9:00 P.M.</u>			

COMMENTS:

Today we arrived on site and had safety meeting Tim and I talked and he made the call not to drill because of weather lighting and ran.

We called and talked to QCA and let her know what was going on and we decided not to work do to weather.

Tim M. Brown 5/23/11
CLIENT REPRESENTATIVE DATE

Billy Brown (AEGL) CAA
NAME & TITLE

Billy Brown 5-14-11
AEGL SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 5/16/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME _____	LATERAL # _____ PIPE DIA. _____
STOP TIME _____	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	FORCEMAIN _____ AIRLINE _____

COMMENTS:

Arrived on site to heavy rain. Not able to work. Client requested that we shut down for the entire week due to the weather forecast. Will return to site on 5/23/2011.

[Signature] 5/16/11
CLIENT REPRESENTATIVE DATE
[Signature] CDA
NAME & TITLE

Bob Minor 5/16/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/23/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

Page 1

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
		STATION	TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION #	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL # LR7	PIPE DIA. 4"
		STATION 0+0 0+75	LINEAR FT. 75ft
		RISER HEIGHT	TRENCH DEPTH <5ft.
START TIME 7:00 A.M.		FORCEMAIN 2" 200ft.	AIRLINE 2" 200ft.
STOP TIME 6:00 P.M.			

COMMENTS:

Attended safety meeting with crew. Excavated for 2" air and forcemain to EW-153 from station 0+0 to 2+00. Installed 200ft of 2" SDR 9 HDPE pipe in trench for airline including one 2" 90° degree elbow at station 0+0 for riser to EW-153 and one 2" tee at station 2+00 which was installed in existing 2" airline recently installed for EW-154. The 2" SDR 11 HDPE forcemain for EW-153 installed exactly the same as airline. Placed survey risers and caution tape while backfilling. Excavated existing 24" header for installment of vacuum riser to LR7. Installed one 24"x8" branch saddle on top of the 24" header including one 8"x6" reducer, one 6"x4" reducer, rising to an above ground 4" pvc ASAHI ball valve and then returning below ground to one 4" 90° degree elbow which is station 0+0 for lateral to LR7. Excavated for 4" lateral to LR7 from station 0+0 to 0+75. Installed 75ft of 4" SDR 17 HDPE pipe in trench. See page 2.

Shelly T. Davis 5/23/11
CLIENT REPRESENTATIVE DATE

Bob Minor
NAME & TITLE

Bob Minor 5/23/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/23/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION	LINEAR FT.
		STATION	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL # LR7	PIPE DIA. 4"
		STATION 0+0 0+75	LINEAR FT. 75ft.
		RISER HEIGHT	TRENCH DEPTH <5ft.
		FORCEMAIN 2" 200ft.	AIRLINE 2" 200ft.
GENERAL INFORMATION			
WEATHER CONDITIONS			
START TIME <u>7:00 A.M.</u>			
STOP TIME <u>6:00 P.M.</u>			

COMMENTS:

Attended safety meeting with crew. Excavated for 2" air and forcemain to EW-153 from station 0+0 to 2+00. Installed 200ft of 2" SDR 9 HDPE pipe in trench for airline including one 2" 90° degree elbow at station 0+0 for riser to EW-153 and one 2" tee at station 2+00 which was installed in existing 2" airline recently installed for EW-154. The 2" SDR 11 HDPE forcemain for EW-153 installed exactly the same as airline. Placed survey risers and caution tape while backfilling. Excavated existing 24" header for installment of vacuume riser to LR7. Installed one 24"x8" branch saddle on top of the 24" header including one 8"x6" reducer, one 6"x4" reducer, rising to an above ground 4" pvc ASAHI ball valve and then returning below ground to one 4" 90° degree elbow which is station 0+0 for lateral to LR7. Excavated for 4" lateral to LR7 from station 0+0 to 0+75. Installed 75ft of 4" SDR 17 HDPE pipe in trench. Backfilled trench.

Amelia Cella 5/23/11
CLIENT REPRESENTATIVE DATE
Stana M. Poda Senior Civil Engineer CEA
NAME & TITLE

Bob Minor 5/23/2011
AEG SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/24/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: # LR7	PIPE DIA. 4"
		STATION 0+75 0+95	LINEAR FT. 20'ft.
		RISER HEIGHT	TRENCH DEPTH <5'ft.
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		FORCEMAIN	AIRLINE
GENERAL INFORMATION			
WEATHER CONDITIONS			
START TIME <u>7:00 A.M.</u>			
STOP TIME <u>7:00 P.M.</u>			

COMMENTS:

Attended safety meeting with crew. Excavated cleanout riser LR7 for tie in. Excavated remainder of 4" lateral to LR7 from station 0+75 to 0+95. Tied into two existing 18" cleanout risers, one 6" riser, one 3" riser and installed one 4" perforated pipe wrapped in fabric to act as a gas collector. Installed a 4" manifold with one 4" pvc ball valve for each pipe tied into. Installed a bentonite plug just upslope of the manifold. Installed 20'ft of 4" SDR 17 HDPE pipe in lateral connecting to the 4" manifold. Backfilled excavation. Excavated on east slope to determine cause of fluid breakout from slope. Found fluid to be coming from HDPE forcemain valve vault. Excavated around vault and found leak at one extrusion weld and two butt fusion welds where a forcemain pipe enters the vault. Fluid being tested. Waiting for test results for directive on how to proceed. Will repair leaks in welds. Work involving forcemain valve vault will be billed at T&M rate.

Bob Minor 5/24/11
CLIENT REPRESENTATIVE DATE

Bob Minor 5/24/2011
AEGL SITE SUPERVISOR DATE

Donna Padia
NAME & TITLE



American
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DAILY DIARY

DATE: 5/25/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

PAGE 1

DRILLING	CONSTRUCTION	
LINEAR FEET OF DRILLING	HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION	STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.	HEADER #	PIPE DIA.
SOLID PIPE -DIA.	STATION	LINEAR FT.
		TRENCH DEPTH
COMPLETION: (WELL NUMBERS)	LATERAL <u>EW-145R</u>	PIPE DIA. <u>2" air & fm</u>
	STATION # <u>0+0</u> <u>0+22</u>	LINEAR FT. <u>22'ft.</u>
		TRENCH DEPTH <u><5'ft.</u>
	LATERAL # <u>TEW-1R</u> <u>EW-147R</u>	PIPE DIA. <u>2" SDR 9</u>
	STATION <u>0+0</u> <u>8+80</u>	LINEAR FT. <u>880'ft.</u>
	RISER HEIGHT	TRENCH DEPTH <u><5'ft.</u>
GENERAL INFORMATION	LATERAL: # <u>TEW-1R</u> <u>TEW-3R</u>	PIPE DIA. <u>4"x2" DC</u>
WEATHER CONDITIONS	STATION <u>0+0</u> <u>4+98</u>	LINEAR FT. <u>498'ft.</u>
	RISER HEIGHT	TRENCH DEPTH <u><5'ft.</u>
	LATERAL # <u>TEW-3R</u> <u>EW-147R</u>	PIPE DIA. <u>4" SDR 17</u>
	STATION <u>4+98</u> <u>8+80</u>	LINEAR FT. <u>382'ft.</u>
	RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00 A.M.</u>	FORCEMAIN <u>EW-57R2</u> <u>2"- 343'ft.</u>	AIRLINE <u>343'ft.</u> <u>EW-57R2</u>
STOP TIME <u>7:00 P.M.</u>		

COMMENTS:

Attended safety meeting with crew. Excavated lateral from EW-58R2 to EW-57R2 for air and forcemain to EW-57R2. Installed 343'ft of 2" SDR 9 for airline and 2" SDR 11 for forcemain including two 2" tees which replaced the existing 2" 90° degree elbows at EW-58R2 and installed two 2" 90° degree elbows for risers at EW-57R2. Placed survey risers and caution tape while backfilling. Repaired leaks in welds on HDPE forcemain valve vault. Repair work to be billed at T&M rate. 5 hours. Tie in time for air and forcemain at EW-58R2 is 2 hours. Excavated for air and forcemain from TEW-1R to EW-147R. Installed 880'ft of 2" airline including one 2" 90° degree elbow at 0+0 for riser to TEW-1R, one 2" tee at TEW-2R for riser to TEW-2R, one 2" tee at 4+42 for riser to TEW-3R, one 2" isolation valve at 4+96, one 2" tee at 5+10 for line to EW-56R, and one 2" tee at 7+52 for line to EW-145R. End page 1, see page 2.

Bob Minor 5/25/11
CLIENT REPRESENTATIVE DATE

Bob Minor 5/25/2011
AEGL SITE SUPERVISOR DATE

Bob Minor
NAME & TITLE



American
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Group Ltd.

DAILY DIARY

DATE: 5/25/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

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DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ TRENCH DEPTH _____
LINEAR FEET OF WELL COMPLETION	HEADER # _____ PIPE DIA. _____
PERFORATED PIPE-DIA.	STATION _____ TRENCH DEPTH _____
SOLID PIPE -DIA.	LATERAL <u>EW-145R</u> PIPE DIA. <u>2" air & fm</u>
COMPLETION: (WELL NUMBERS)	STATION # <u>0+0</u> <u>0+22</u> TRENCH DEPTH <u><5ft.</u>
	LATERAL # <u>TEW-1R</u> <u>EW-147R</u> PIPE DIA. <u>2" SDR 9</u>
	STATION <u>0+0</u> <u>8+80</u> TRENCH DEPTH <u><5ft.</u>
	RISER HEIGHT _____
	LATERAL: # <u>TEW-1R</u> <u>TEW-3R</u> PIPE DIA. <u>4"x2" DC</u>
GENERAL INFORMATION	STATION <u>0+0</u> <u>4+98</u> TRENCH DEPTH <u><5ft.</u>
WEATHER CONDITIONS	LATERAL # <u>TEW-3R</u> <u>EW-147R</u> PIPE DIA. <u>4" SDR 17</u>
	STATION <u>4+98</u> <u>8+80</u> TRENCH DEPTH _____
	RISER HEIGHT _____
	FORCEMAIN <u>EW-57R2</u> <u>2" 343ft.</u> AIRLINE <u>343ft.</u> <u>EW-57R2</u>
START TIME <u>7:00 A.M.</u>	
STOP TIME <u>7:00 P.M.</u>	

COMMENTS:

Continued from page 1. Installed 498'ft of 4"x2" dc fm including one 4"x2" dc 90° degree elbow at 0+0 for riser to TEW-1R, one 4"x2" dc tee for riser to TEW-2R, one 4"x2" dc tee at 4+42 for riser to TEW-3R, and terminating dc at 4+98 with one 4"x2" end seal. Installed 382' of 4" SDR 17 from 4+98 to 8+80 including one isolation valve at 5+00, one 4" tee at 5+12 for line to EW-56R, and one 4" tee at 7+52 for line to EW-145R. Installed 22'ft of 2" airline to EW-145R including one 2" 90° degree elbow at 0+0 for riser. Installed 22'ft of 4" forcemain to EW-145R including one 4" 90° degree elbow at 0+0 for riser. Placed survey risers and caution tape while backfilling.

Paul A. Polio 5/25/11
CLIENT REPRESENTATIVE DATE

Bob Minor 5/25/2011
AEGL SITE SUPERVISOR DATE

Donna A. Polio Brown U OPA
NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/26/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>	LATERAL # _____ PIPE DIA. _____
STOP TIME <u>9:00 A.M.</u>	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	FORCEMAIN _____ AIRLINE _____

COMMENTS:

Raining this morning. Backfilled around HDPE forcemain valve vault. Calling for rain tomorrow. Client not allowing work on 5/28, 5/29, and 5/30. Shut down and will return on 5/31.

Paul Rodia 5/26/11
CLIENT REPRESENTATIVE DATE

Bob Minor 5/26/2011
AEGL SITE SUPERVISOR DATE

Amal Rodia Senior/Holder O&A
NAME & TITLE



American
Environmental
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DAILY DIARY

DATE: 5/31/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
		STATION	TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION #	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL: #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00 A.M.</u>		AIRLINE <u>2"</u>	<u>10+02</u>
STOP TIME <u>6:30 P.M.</u>		FM <u>4"</u>	<u>10+02</u>

COMMENTS:

Attended safety meeting with crew. Excavated for 2" airline and 4" forcemain from just outside cap area near TEW-3R. Installed 248'ft of 2" SDR 9 HDPE pipe for airline and 248'ft of 4" SDR 17 HDPE for forcemain including one 2" & 4" tee at station 1+90 for air & fm to wells EW-165R and EW-164R, and one 2" & 4" tee at station 2+40 for air & fm to tie in point at EW-56R, and one 2" & 4" blind flange at 2+48 for future connection. Installed 754'ft of 2" SDR 9 and 4" SDR 17 to tie in point at EW-56R including one 2" air isolation valve and one 4" forcemain isolation valve at station 9+50. Excavated for lateral to EW-157 and found 4" at tie in point, not 6". Excavated to find source of fluid breakout at southwest corner just above gas plant entrance by request of Landfill Manager. This to be billed at T&M rate.

Bruce A. Tolia 5/31/11
CLIENT REPRESENTATIVE DATE
Bruce A. Tolia, Supervisor/Blower/COA
NAME & TITLE

Bob Minor 5/31/2011
AEGLE SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 6/1/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION	
LINEAR FEET OF DRILLING	HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION	STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.	HEADER #	PIPE DIA.
SOLID PIPE -DIA.	STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)	STATION	TRENCH DEPTH
	SUBHEADER #	PIPE DIA.
	STATION #	LINEAR FT.
	STATION	TRENCH DEPTH
	LATERAL #	PIPE DIA.
	STATION	LINEAR FT.
	RISER HEIGHT	TRENCH DEPTH
	LATERAL: #	PIPE DIA.
	STATION	LINEAR FT.
	RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION	FORCEMAIN 4"x2" DC	PIPE DIA. 4"x2"
WEATHER CONDITIONS	STATION 0+0 3+90	LINEAR FT. 390'ft.
	RISER HEIGHT	TRENCH DEPTH <5'ft.
START TIME <u>7:00 A.M.</u>	AIRLINE 2" 480'ft.	FM 4" 90'ft.
STOP TIME <u>8:00 P.M.</u>		

COMMENTS:

Attended safety meeting with crew. Excavated for air and forcemain to TEW-9R. Tied into existing 2" air and forcemain and installed 90'ft of 2" SDR 9 for airline and SDR 11 for forcemain including two 2" tees at tie in point which is 0+0 and two 2" 90° degree elbows for risers at TEW-9R which is station 0+90. Excavated for air and dual contained forcemain for wells EW-165R and EW-164R. Installed 390'ft of 2" SDR 9 including one 2" 90° degree elbow at 0+0 for riser to EW-165R, one 2" tee for riser to EW-164R at station 1+45 and connecting to newly installed airline tee at station 3+90. Installed 390'ft of 4"x2" dual contained forcemain including one 4"x2" 90° degree elbow at station 0+0 for riser to EW-165R, one 4"x2" tee at station 1+45 for riser to EW-164R and connecting to newly installed single contained forcemain tee at station 3+90 just outside cap area. Placed survey risers and caution tape while backfilling all excavations this day.

Bob Minor 6/1/11
CLIENT REPRESENTATIVE DATE

Bob Minor 6/1/2011
AEGL SITE SUPERVISOR DATE

Amr Atodia Brown-Blum CBA
NAME & TITLE

DAILY DIARY

DATE: 6/2/2011

PROJECT NAME **LORAIN COUNTY**

PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER # <u>12"</u>	PIPE DIA. <u>12"</u>
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT. <u>310'ft.</u>
LINEAR FEET OF WELL COMPLETION		STATION <u>0+0</u> <u>3+10</u>	TRENCH DEPTH <u><5ft.</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH _____
		SUBHEADER _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
			TRENCH DEPTH _____
		LATERAL # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		AIRLINE _____	FM _____
GENERAL INFORMATION			
WEATHER CONDITIONS			
START TIME <u>7:00 A.M.</u>			
STOP TIME <u>6:30 P.M.</u>			

COMMENTS:

Attended safety meeting with crew. Excavated for 12" header from station 0+0 to 3+10. Installed 310'ft of 12" SDR 17 HDPE pipe in trench including one 12" blind flange at 0+0, one 12" access riser at 0+7, one 12"x6" tee at 0+85 for lateral to EW-138 and EW-40R2, and one 12"x6" tee at 1+93 for vacuume riser to down slope well EW-41. Shot pipe to confirm 3% minimum grade. Placed survey risers and caution tape while backfilling. Had more trench open expecting to install road crossing but denied by client.

CLIENT REPRESENTATIVE DATE

NAME & TITLE Scott A. Tolia SAUW/C&W/CW CPA

Bob Minor	6/2/2011
AEGL SITE SUPERVISOR	DATE



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DAILY DIARY

DATE: 6/3/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER # <u>12"</u>	PIPE DIA. <u>12"</u>
LINEAR FEET OF DRILLING-ABANDONMENT		LINEAR FT. <u>160'ft.</u>	
LINEAR FEET OF WELL COMPLETION		STATION <u>3+10</u> <u>4+70</u>	TRENCH DEPTH <u><5'ft.</u>
PERFORATED PIPE-DIA.		HEADER # _____	PIPE DIA. _____
SOLID PIPE -DIA.		STATION _____	TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)		SUBHEADER _____	PIPE DIA. _____
		STATION _____	TRENCH DEPTH _____
		LATERAL # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>		AIRLINE _____	FM _____
STOP TIME <u>10:00 P.M.</u>			

COMMENTS:

Attended safety meeting with crew. Excavated for 12" header from station 3+10 through road crossing to station 4+70. Installed 160'ft. of 12" SDR 17 HDPE pipe in trench including one 12"x6" tee at station 3+47 for riser to EW-39R. The 12" header was installed through 60' feet of 18" CMP culvert from station 3+92 to 4+52 for road crossing. Shot pipe every 10'ft to confirm 3% minimum grade. Placed survey risers and caution tape while backfilling.

Bob Minor 6/3/11
CLIENT REPRESENTATIVE DATE
Bob Minor
NAME & TITLE

Bob Minor 6/3/2011
AEGL SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 6/4/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL # <u>EW-40R2</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>1+89</u> LINEAR FT. <u>189'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL: # <u>EW-138</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>1+15</u> LINEAR FT. <u>115'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
GENERAL INFORMATION	FORCEMAIN _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>	AIRLINE _____ FM _____
STOP TIME <u>4:30 P.M.</u>	

COMMENTS:

Attended safety meeting with crew. Excavated for lateral to EW-40R2. Excavated for lateral to EW-138. Installed 115'ft of 6" SDR 17 pipe in trench for lateral to EW-138 including one 6" 90° degree elbow at station 0+0 for riser to EW-138, one 6" tee at station 0+38 for lateral to EW-40R2, running through 40'ft of 12" CMP culvert through road crossing from station 0+54 to 0+94, and connecting to 12"x6" header tee at station 1+15. Installed 189'ft of 6" SDR 17 pipe in trench for lateral to EW-40R2 including one 6" 90° degree elbow at station 0+0 for riser to EW-40R2 and connecting at station 1+89 to 6" tee installed in lateral to EW-138. Placed survey risers and caution tape while backfilling.

Bob Minor 6/4/11
CLIENT REPRESENTATIVE DATE
Bob A. Tobia
NAME & TITLE

Bob Minor 6/4/2011
AEGL SITE SUPERVISOR DATE



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Group Ltd.

DAILY DIARY

DATE: 6/5/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME _____	LATERAL # _____ PIPE DIA. _____
STOP TIME _____	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	AIRLINE _____ FM _____

COMMENTS:

Sunday. No work.

Bob Minor 6/5/11
CLIENT REPRESENTATIVE DATE
Bob A. Radia Brown, COWI
NAME & TITLE

Bob Minor 6/5/2011
AEGL SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 6/6/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

Page 1

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	AIR & FM <u>EW-151</u> PIPE DIA. <u>2"</u>
	STATION <u>0+0</u> <u>1+34</u> LINEAR FT. <u>134'ft each</u>
	TRENCH DEPTH <u><5'ft.</u>
	LATERAL # <u>EW-91AR</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+33</u> LINEAR FT. <u>33'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
GENERAL INFORMATION	LATERAL: # <u>EW-120R</u> PIPE DIA. <u>6"</u>
WEATHER CONDITIONS	STATION <u>0+0</u> <u>0+15</u> LINEAR FT. <u>15'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>	AIRLINE <u>2" 15'ft</u> <u>EW-120R</u> FM <u>4"x2" 15'</u>
STOP TIME <u>7:00 P.M.</u>	

COMMENTS:

Attended safety meeting with crew. Excavated for 2" air and 2" fm from existing 2" air and 4" fm to EW-151. Tied into existing air & fm with one 2" tee and one 4" tee. Installed 134'ft of 2" SDR 9 HDPE pipe for airline including one 2" 90° degree elbow for riser at station 1+34. Installed 134'ft. of 2" SDR 11 HDPE pipe for forcemain including one 2" 90° degree elbow for riser at station 1+34. Placed survey risers and caution tape while backfilling. Excavated for 6" lateral to EW-91AR. Tied into existing vacume riser with one 6" 90° degree elbow and installed 33'ft of 6" SDR 17 HDPE pipe including one 6" 90° degree elbow for new vacume riser to EW-91AR at station 0+33. Abandoned EW-91A as per detail. Reconnected wellhead to new vacume riser. Backfilled trench. Excavated for lateral to EW-120R. Removed existing 6", 4"x2" dc, and 2" 90° degree elbows. Tied into all three lines and extended 15'ft to EW-120R. See page two.

Bob Minor 6/6/11
CLIENT REPRESENTATIVE DATE
Bob Minor
NAME & TITLE

Bob Minor 6/6/2011
AEGL SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 6/6/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

Page 2

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	AIR & FM <u>EW-151</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>134'ft each</u>
	STATION <u>0+0</u> <u>1+34</u> TRENCH DEPTH <u><5'ft.</u>
	LATERAL # <u>EW-91AR</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+33</u> LINEAR FT. <u>33'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
GENERAL INFORMATION	LATERAL: # <u>EW-120R</u> PIPE DIA. <u>6"</u>
WEATHER CONDITIONS	STATION <u>0+0</u> <u>0+15</u> LINEAR FT. <u>15'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>	AIRLINE <u>2" 15'ft</u> <u>EW-120R</u> FM <u>4"x2" 15'</u>
STOP TIME <u>7:00 P.M.</u>	

COMMENTS:

Continued from page 1. Replaced 6", 4"x2", and 2" 90° degree elbows on the three lines for risers to EW-120R. Reconnected wellhead.

Backfilled trench.

Bob Minor 6/6/11
CLIENT REPRESENTATIVE DATE
Robert A. Tolka, Environmental Group Ltd. CAA
NAME & TITLE

Bob Minor 6/6/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/8/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

Page 1

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # <u>24"x12"</u> Tie-In PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # <u>24"x6"</u> Tie-In PIPE DIA. _____
SOLID PIPE -DIA.	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	VALVE # <u>12"</u> 1 each PIPE DIA. _____
	LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	PUMP 1 each EW-85R PIPE DIA. _____
	DEPTH <u>55 ft.</u> LINEAR FT. _____
	SERIAL # <u>3-215305</u> TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # <u>EW-159</u> PIPE DIA. <u>6"</u>
WEATHER CONDITIONS	STATION <u>0+0</u> <u>0+66</u> LINEAR FT. <u>66ft.</u>
Sunny 90° Degrees	RISER HEIGHT _____ TRENCH DEPTH <u><5ft.</u>
START TIME <u>7:00 A.M.</u>	LATERAL: # <u>EW-85R</u> PIPE DIA. <u>6"</u>
STOP TIME <u>8:00 P.M.</u>	STATION <u>0+0</u> <u>0+25</u> LINEAR FT. <u>25ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5ft.</u>
	AIRLINE <u>2"</u> <u>25ft.</u> FM <u>25ft.</u> <u>4"x2" DC</u>

COMMENTS:

Attended safety meeting with crew. Excavated for tie-in to existing 6" vacume, 2" air, and 4"x2" dc fm at EW-85. Excavated from tie-in point to location of new well EW-85R. Installed 25ft of 6" SDR 17 HDPE in trench including one 6" 90° degree elbow at station 0+25 for riser to EW-85R. Riser has one 6" flange connection with one 6"x2" femco coupling. Installed 25ft of 2" SDR 9 HDPE pipe in trench for airline to EW-85R. Installed 25ft of 4"x2" dual contained hdpe pipe in trench for forcemain to EW-85R. Removed pump from EW-85 and replaced old air, exhaust, and discharge lines with new. Reinstalled pump in EW-85R at a depth of 55ft. Pump serial number is 3-215305. Abandoned EW-85 below grade. Reinstalled 2" wellhead from EW-85 onto EW-85R. Excavated for 6" tie-in to existing 24" for 6" lateral to EW-159. Installed one 24"x6" electrofusion branch saddle on existing 24" header at station 0+0. End page 1. See page 2.

Bob Minor 6/8/11
CLIENT REPRESENTATIVE DATE
Donna Todd Environmental Group Ltd.
NAME & TITLE

Bob Minor 6/8/2011
AEGL SITE SUPERVISOR DATE



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Group Ltd.

DAILY DIARY

DATE: 6/8/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

Page 2

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION #	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		AIRLINE	FM

COMMENTS:

Continued from page 1. Excavated trench for lateral to EW-159. Installed 66'ft of 6" SDR 17 HDPE pipe in trench, including one 6" 90° degree elbow at station 0+66 for vacuum riser to EW-159 and connecting to one 24"x6" electrofusion branch saddle at station 0+0. This 6" lateral was air tested and passed. Excavated for 12" tie-in to existing 24". Excavated for 12" subheader. Installed one 24"x12" branch saddle tee with gussets in existing 24" header with two 24" friatech electrofusion couplers. Installed one 12" ASAHI butterfly valve onto port side of 24"x12" tee. Ordered one 8'ft stem extension for this valve. Ran out of time and had to backfill trench excavated for 12" subheader with soil to avoid noise complaints. Will reexcavate tomorrow and install remainder of 12" subheader.

Donna Padia 6/8/11
CLIENT REPRESENTATIVE DATE
Donna Padia
NAME & TITLE

Bob Minor 6/8/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/12/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	AIRLINE _____ FM _____
GENERAL INFORMATION	
WEATHER CONDITIONS	
START TIME _____	
STOP TIME _____	

COMMENTS:

Sunday. No work.

Bob Minor 6/12/11
CLIENT REPRESENTATIVE DATE
Tom A. Todie Brown CRP
NAME & TITLE

Bob Minor 6/12/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6-13-11 Mon.

PROJECT NAME Lorain County LF
PROJECT# 02-211-111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	LATERAL: # <u>EW-156</u> PIPE DIA. <u>6"</u>
	STATION <u>0+00 to 1+85</u> LINEAR FT. <u>185'</u>
	RISER HEIGHT <u>6'</u> TRENCH DEPTH <u>0-4'</u>
	LATERAL: # <u>EW-157</u> PIPE DIA. <u>6"</u>
	STATION <u>0+00 to 3+70</u> LINEAR FT. <u>370'</u>
	RISER HEIGHT <u>6'</u> TRENCH DEPTH <u>0-4'</u>
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	Butt fusion tie in _____ 4 hours VALVES _____
GENERAL INFORMATION	
WEATHER CONDITIONS	
Cloudy 70	
START TIME <u>7:00 A.M.</u>	
STOP TIME <u>7:00 P.M.</u>	

COMMENTS: Today we trenched and installed 6" lateral for EW-156 from 0+00 (6" riser at EW-156) to 1+85 (6" lateral tie in next to EW-49R) with a 6" tee at station 0+49 for EW-157. We also installed the 6" lateral for EW-157 from 0+00 (6" tee at 0+49 on the 6" lateral for EW-156) to 3+70 (6" riser at EW-157). After installing the pipe we shot the pipe every 10' to ensure good grade then we placed 6" of dirt over the pipe, rolled out the caution tape, then tracked in the backfill material. We placed survey risers on the pipe every 50' for asbufts. We also made the 6" lateral tie in next to EW-49-R, by way of breaking down the 8" fusion machine after locating the 12" header and header tee. We had 4=hours for the tie in.

Bob Minor 6/13/11
CLIENT REPRESENTATIVE DATE

Bob Minor CNA
NAME & TITLE

Bob Minor 6/13/2011
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/15/2011

Weds.

PROJECT NAME Lorain County Landfill

PROJECT# 202-11-111

DRILLING	CONSTRUCTION	
LINEAR FEET OF DRILLING	LATERAL # <u>EW-41</u>	PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	STATION <u>0+00 to 0+70</u>	LINEAR FT. <u>70'</u>
LINEAR FEET OF WELL COMPLETION	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
PERFORATED PIPE-DIA.	LATERAL # <u>EW-50R</u>	PIPE DIA. <u>6"</u>
SOLID PIPE -DIA.	STATION <u>0+00 to 0+22</u>	LINEAR FT. <u>22'</u>
	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
COMPLETION: (WELL NUMBERS)	2" AIR # <u>EW-50R</u>	PIPE DIA. <u>2"</u>
	STATION # <u>0+00 to 0+22</u>	LINEAR FT. <u>22'</u>
	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
	2" FORCEMAIN <u>EW-50R</u>	PIPE DIA. <u>2"</u>
	STATION <u>0+00 to 0+</u>	LINEAR FT. <u>22'</u>
	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
GENERAL INFORMATION	2" AIR # <u>EW-155R</u>	PIPE DIA. <u>2"</u>
WEATHER CONDITIONS	STATION <u>0+00 to 0+45</u>	LINEAR FT. <u>45'</u>
<u>Sunny</u>	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
	4X2 DUAL CONT <u>EW-155R</u>	PIPE DIA. <u>4X2</u>
	STATION <u>0+00 to 0+45</u>	LINEAR FT. <u>45'</u>
	RISER HEIGHT <u>6'</u>	TRENCH DEPTH <u>3>4</u>
START TIME <u>7:00 AM</u>	ROCK SUMP	FM
STOP TIME <u>7:00 PM</u>		

COMMENTS:

We had our safety meeting then went and started trenching on lateral for EW-50R. After trench was dug we extended existing 2" air and forcemain to new well and put new 6" lateral to EW-50R. Janet called plant and give us the ok to tie in so we did with a 6" EFC. Tie in took 2hrs. We then went over and exposed tie in for EW-54R was getting ready to tie in but plant and the site didn't want to shut valves so we could tie in. They wanted us to wait until beginning of next week. So we went over EW-41 and installed 6" lateral to new 12" header. It was a down slope well so we put a tee into well and ran line up the hill. We abandon 4" vacuum line with a 4" butt cap. We spent 2 hours on tie in. We then went over to EW-155R and installed 2" air and 4X2 forcemain to EW-155R. We tie in to 1" existing pipe. We spent 2 hours on tie in. We also abandon EW-50. Dean also went with Janet and dropped water tape down EW-50R it was dry so we didn't drop existing pump down well. They also went over to EW-49R and water taped it the well was dry so they didn't want 2" ran to it or a pump down it. We also finished up around the manhole after air test passed and installed a 6" valve at top of lateral above ground. We also installed a 12" valve stem on the new header system and backfilled the hole. We then wrapped things up and left for the day.

Donna A. Stasia 6/15/11
CLIENT REPRESENTATIVE DATE
Donna A. Stasia CDN 6/15/11
NAME & TITLE

Billy Brown 6-15-11
AEGL SITE SUPERVISOR DATE



DAILY DIARY

DATE: 6-16-11

THURS.

PROJECT NAME Lorain county Lanfill

PROJECT# 202-11-111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH
PERFORATED PIPE-DIA.		LATERAL #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		LATERAL #	PIPE DIA.
		STATION #	LINEAR FT.
			TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL: #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
sunny/rain		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME 7:00 AM		ROCK SUMP	FM
STOP TIME 4:00PM			

COMMENTS:

We started off the day with our safety meeting then started digging up around wells that the drillers did on cap and started repairing liner and booting wells. The wells that we got to was EW-155R,EW-1AR and EW-91R.We spent 6 hours on repairing liner and boots. While we were doing that we got with Janet to see if we could temp cap existing vacuum riser so we could hook up all well to the new 12" header. She said that was fine so we capped all existing pipes and hooked up wellheads to new header. The wells we got were EW-38R EW-39R,EW-138 and EW-40R2 they were 2" landtec wellheads and EW-41 was a 3"landtec wellhead a total of 5 well were hooked up to the new header system. We then hauled dirt to all trench lines and started dressing up laterals. We also was backfilling around wells that we did liner repairs and boots after Janet did all testings on liner. It then started to rain so we called it and left for the day.

Brent A. T. S. dia 12/16/11
 CLIENT REPRESENTATIVE DATE
Brent A. T. S. dia COA Brent A. T. S. dia
 NAME & TITLE

Billy Brown **6/16/11**
AEGL SITE SUPERVISOR **DATE**



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6-17-11

PROJECT NAME Loraln County Landfill
PROJECT# 202-11-111

DRILLING	CONSTRUCTION	
LINEAR FEET OF DRILLING	LATERAL #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH	
PERFORATED PIPE-DIA.	LATERAL #	PIPE DIA.
SOLID PIPE -DIA.	STATION	LINEAR FT.
	TRENCH DEPTH	
COMPLETION: (WELL NUMBERS)	LATERAL #	PIPE DIA.
	STATION #	LINEAR FT.
	TRENCH DEPTH	
	LATERAL: #	PIPE DIA.
	STATION	LINEAR FT.
	RISER HEIGHT	TRENCH DEPTH
	LATERAL: #	PIPE DIA.
	STATION	LINEAR FT.
	RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION	LATERAL: #	PIPE DIA.
WEATHER CONDITIONS	STATION	LINEAR FT.
Sunny	RISER HEIGHT	TRENCH DEPTH
	LATERAL #	PIPE DIA.
	STATION	LINEAR FT.
	RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00AM</u>	PUMPS <u>EW-155R</u>	FM
STOP TIME <u>7:00 PM</u>		

COMMENTS:

We had our safety meeting and went over and started digging around wells and repairing liner and boots for the day. We got EW-120R, EW-122R, EW-143R, EW-145R, TEW-3R, EW-121R and a liner repair for where they had a well abandonment. We spent 12 hours on repairs. While they were doing that we removed and above ground pipe that was on top of ground. Also removed all survey risers that were shot in by the surveyor. After that we installed a pump at EW-155R. Pump was set at 38ft and the pump S/N# 4-3520. Then we started fusing up 2-6" laterals with 90 risers on each end for air test. After we got them built we put on air test at 25 psi for 4hrs test. We got with Janet and started air test at 4 PM and air test was staying on overnight. Then the 36" encasement pipe came in so we went and brought up pipe and installed them around thw 2-2" air valves. We went to set them over the forcemain valves but the wont fit around valves. We also hauled dirt to trench lines and back filled around all liner and boot repairs after all testing was done on them. We then wrapped things up and left for the day.

[Signature] 6/17/11
CLIENT REPRESENTATIVE DATE
Dana A. Tolia COA Brown & Caldwell
NAME & TITLE

Billy Brown 6/17/2011
AEGL SITE SUPERVISOR DATE

DAILY DIARY

DATE: 6-18-11

Sat.

PROJECT NAME Lorain County Landfill

PROJECT# 202-11-111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		LATERAL #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH
PERFORATED PIPE-DIA.		LATERAL #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		LATERAL #	PIPE DIA.
		STATION #	LINEAR FT.
			TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL: #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
Sunny		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME 7:00 AM		ROCK SUMP	FM
STOP TIME 3:00 PM			

COMMENTS:

We had our safety meeting and then we went over to finish the west slope boot and liner repairs. The one we got to are EW-85R, EW-81R and EW-78R. We spent 6 hours on repairs. While they were doing that we built 4-8" pups to put on 6" wells that have 3" wellheads that call for pumps. We then went over to EW-145R and had to extend 2" pipe to well because Drillers didn't put well close enough to our 2" pipe. Janet also checked air test on the 2-6" laterals we built and passed air test so we let air off pipes.

Paul H. Lio 6/18/11
CLIENT REPRESENTATIVE DATE

Boyd Tadiq Sawm Caldwell CD
NAME & TITLE

Bob Minor
AEGL SITE SUPERVISOR

6/18/11
DATE



American
Environmental
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DAILY DIARY

DATE: 6/21/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

Page 1

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
		STATION	TRENCH DEPTH
		LATERAL # EW-54R	PIPE DIA. 6"
		STATION 0+0 0+15	LINEAR FT. 15ft.
		RISER HEIGHT	TRENCH DEPTH <5ft.
		LATERAL: # EW-22R	PIPE DIA. 6"
		STATION 0+0 0+22	LINEAR FT. 22ft.
		RISER HEIGHT	TRENCH DEPTH <5ft.
		LATERAL # TEW-8R	PIPE DIA. 6"
		STATION 0+0 1+72	LINEAR FT. 172ft.
		RISER HEIGHT	TRENCH DEPTH <5ft.
		WELL ABANDON 4 ea.	PUMPS 4 ea.
GENERAL INFORMATION			
WEATHER CONDITIONS			
START TIME 7:00 A.M.			
STOP TIME 6:30 P.M.			

COMMENTS:

Attended safety meeting with crew. Excavated for lateral to EW-22R from station 0+0 to 0+22. Installed 22'ft of 6" SDR 17 HDPE pipe in trench including one 6" 90° degree elbow at station 0+0 for riser to EW-22R and one 6" 90° degree elbow at station 0+22 connecting to existing 6" vacuum riser for EW-22. Abandoned existing well EW-22 as per detail drawing. Shot pipe to confirm 3% minimum grade.

Backfilled trench. Excavated for downslope lateral to TEW-8R from station 0+0 to 1+72. Installed 172'ft. of 6" SDR 17 HDPE pipe in trench including one 6" tee installed in TEW-8R at station 0+0 and one 6" 90° degree elbow at station 1+72 for remote wellhead riser.

Abandoned existing well TEW-8 and existing remote wellhead riser as per detail. Shot pipe every 10'ft to confirm 3% minimum grade.

Backfilled trench. Excavated for lateral to EW-54R from station 0+0 to 0+15. Installed 15'ft of 6" SDR 17 HDPE pipe. See page 2.

Bob Minor 6/21/11
CLIENT REPRESENTATIVE DATE
Robert A. Tabor 6/21/11
NAME & TITLE

Bob Minor 6/21/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/21/2011

PROJECT NAME LORAIN COUNTY

PROJECT# 20211111

Page 2

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	LATERAL # <u>EW-54R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+15</u> LINEAR FT. <u>15'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL: # <u>EW-22R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+22</u> LINEAR FT. <u>22'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL # <u>TEW-8R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>1+72</u> LINEAR FT. <u>172'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	WELL ABANDON <u>4 ea.</u> PUMPS <u>4 ea.</u>
GENERAL INFORMATION	
WEATHER CONDITIONS	
START TIME <u>7:00 A.M.</u>	
STOP TIME <u>6:30 P.M.</u>	

COMMENTS:

Page 2. Including one 12"x6" electrofusion branch saddle installed at station 0+0 on existing 12" header and one 6" 90° degree elbow at station 0+15 for vacuume riser to EW-54R. The 12"x6" electrofusion branch saddle installed per Chris Jaquet. Shot pipe to confirm 3% minimum grade. Abandoned existing well EW-54 as per detail. Backfilled trench. Abandoned existing well EW-40R as per detail. Abandoned 6" lateral to EW-138. Installed pump in well EW-145R2 at 93'ft, in EW-151 at 100'ft, in EW-47R at 97'ft, and in well EW-153 at 81'ft.

Bob Minor 6/21/11
CLIENT REPRESENTATIVE DATE
Emmett Tadie Brown
NAME & TITLE

Bob Minor 6/21/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: Thur 4/21/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
118 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
118 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
97 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
EW-158 TD 118 FEET	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS Sunny Cool	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>6 30 am</u>	SUMPS _____ VALVES _____
STOP TIME <u>5 30 pm</u>	

COMMENTS:

Tim Burgy Sr Tim Dye and Robert Button arrived on site at 6 30 am had a tailgate safety meeting made a bench for Well EW-158
Drilled to 118 feet td set and completed. Cleaned up trash backbladed around well location and hauled dirt for cover and benching.
Made a bench for Well EW-158 set up and ready to drill. Went down and talked to Rick to let him know what I had done and what my plans for tomorrow was. Left site at 5 30 pm.

Tim Burgy sr. 4/22/11
CLIENT REPRESENTATIVE DATE
Janet Tedia CQA Brown & Caldwell
NAME & TITLE

Tim Burgy sr. Thur 4/21/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: Fri 4/22/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING	CONSTRUCTION
68 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ TRENCH DEPTH _____
68 LINEAR FEET OF WELL COMPLETION	HEADER # _____ PIPE DIA. _____
47 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	STATION _____ TRENCH DEPTH _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	SUBHEADER # _____ PIPE DIA. _____
COMPLETION: (WELL NUMBERS)	STATION # _____ TRENCH DEPTH _____
EW-159 TD 68 FEET	LATERAL # _____ PIPE DIA. _____
	STATION _____ TRENCH DEPTH _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ TRENCH DEPTH _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL # _____ PIPE DIA. _____
WEATHER CONDITIONS Cool Rain	STATION _____ TRENCH DEPTH _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ TRENCH DEPTH _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME 6 30 am	SUMPS _____ VALVES _____
STOP TIME 3 00 pm	

COMMENTS:

Tim Burgy Sr Tim Dye and Robert Button arrived on site at 6 30 am had a tailgate safety meeting. Drilled Well EW-159 drilled to 68 feet td set and completed. Cleaned up trash back bladed around well location cleaned off haul road and cleaned drainage ditch out. Raining to hard to drill anything else. Took drill rig and track loader up by gravel pile left site at 3 00 pm.

Janet A Todia 4/25/11
CLIENT REPRESENTATIVE DATE
Janet A Todia CQA Brown & Caldwell
NAME & TITLE

Tim Burgy sr. Fri 4/22/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: Fri 4/29/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
100 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
100 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
79 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
EW-40-R 2 TD 100 FEET	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS Rain Cool Sunny	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
START TIME 6 30 am	STATION _____ LINEAR FT. _____
STOP TIME 4 30 pm	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

Tim Burgy Sr Tim Dye and Robert Button arrived on site at 6 30 am had a tailgate safety meeting. Drilled Well EW-40-R 2 TD 100 feet set and completed. Back bladed around well and road way Hauled dirt and made a bench for Well EW-39 R set up and ready to drill. Left site at 4 30 pm.

Tim Burgy Sr 4/30/11
CLIENT REPRESENTATIVE DATE
Tim A Tedia Burgy Coldwell CQA
NAME & TITLE

Tim Burgy sr. Fri 4/29/2011
AEGL SITE SUPERVISOR DATE



American
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Group Ltd.

DAILY DIARY

DATE: Sat 4/30/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING		CONSTRUCTION	
57 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
57 LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH _____	
38 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		HEADER # _____	PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
		TRENCH DEPTH _____	
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW-39-R TD 57 FEET		STATION # _____	LINEAR FT. _____
		TRENCH DEPTH _____	
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS <u>Cool Sunny</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>6 30 am</u>		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>4 30 pm</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Tim Burgy Sr Tim Dye and Robert Button arrived on site at 6 30 am had a tailgate safety meeting. Drilled Well EW-39-R TD 57 feet set and completed. Cleaned up trash took bench out with backhoe And hauled off. Greased equipment and fueled it up left site.

Tim Burgy sr. 5/5/11
CLIENT REPRESENTATIVE DATE
Tim Burgy sr. COA Tim Burgy sr. COA
NAME & TITLE

Tim Burgy sr. Sat 4/30/2011
AEGLE SITE SUPERVISOR DATE



**American
Environmental
Group Ltd.**

DAILY DIARY

DATE: Wed 5/11/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
102 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
102 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
81 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
TEW-3-R TO 102 FEET	SUBHEADER # _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS <u>Sunny Warm</u>	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>6 30 am</u>	SUMPS _____ VALVES _____
STOP TIME <u>5 00 pm</u>	

COMMENTS:

Tim Burgy Sr Tim Dye and Robert Button arrived on site at 6 30 am had a tailgate safety meeting set up on well TEW-3-R. Went down had a meeting with clients went up drilled TEW-3-R to 102 feet td set and completed. Cleaned up trash. Moved drill rig to EW-141-R set up and ready to drill. Left site at 5 00 pm.

Tim Burgy Sr 5/12/11
CLIENT REPRESENTATIVE DATE
James A. Tolia Brown Coldwater, OH CQA
NAME & TITLE

Tim Burgy sr. Wed 5/11/2011
AEGL SITE SUPERVISOR DATE



DATE: Thur 5/12/2011

DRILLING	
0	LINEAR FEET OF DRILLING
0	LINEAR FEET OF DRILLING-ABANDONMENT
0	LINEAR FEET OF WELL COMPLETION
0	PERFORATED PIPE-DIA. 6 in sdr 11 hdpe
0	SOLID PIPE -DIA. 6 in sdr 11 hdpe
COMPLETION: (WELL NUMBERS)	
GENERAL INFORMATION	
WEATHER CONDITIONS	Rain Thunderstorms
START TIME	6 30 am
STOP TIME	9 00 am

CONSTRUCTION	
HEADER # _____	PIPE DIA. _____
STATION _____	LINEAR FT. _____
STATION _____	TRENCH DEPTH _____
HEADER # _____	PIPE DIA. _____
STATION _____	LINEAR FT. _____
STATION _____	TRENCH DEPTH _____
SUBHEADER # _____	PIPE DIA. _____
STATION # _____	LINEAR FT. _____
STATION # _____	TRENCH DEPTH _____
LATERAL: # _____	PIPE DIA. _____
STATION _____	LINEAR FT. _____
RISER HEIGHT _____	TRENCH DEPTH _____
LATERAL: # _____	PIPE DIA. _____
STATION _____	LINEAR FT. _____
RISER HEIGHT _____	TRENCH DEPTH _____
LATERAL: # _____	PIPE DIA. _____
STATION _____	LINEAR FT. _____
RISER HEIGHT _____	TRENCH DEPTH _____
SUMPS _____	VALVES _____

Tim Burgy Sr Tim Dye and Shaun Bell arrived on site at 6 30 am had a tailgate safety meeting. It was rain thunder and Lightning. Site is to muddy to drill. Talked to Janet and let her know no drilling could be done also told her that we would try again tomorrow. Left site.



 CLIENT REPRESENTATIVE DATE

 NAME & TITLE

Tim Burgy sr. **Thur 5/12/2011**
AEGL SITE SUPERVISOR **DATE**



**American
Environmental
Group Ltd.**

DAILY DIARY

DATE: Fri 5/13/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

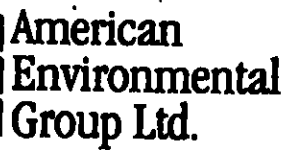
DRILLING	CONSTRUCTION
<u>96</u> LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____ LINEAR FT. _____
<u>0</u> LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ TRENCH DEPTH _____
<u>96</u> LINEAR FEET OF WELL COMPLETION	HEADER # _____ PIPE DIA. _____ LINEAR FT. _____
<u>75</u> PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	STATION _____ TRENCH DEPTH _____
<u>24</u> SOLID PIPE -DIA. 6 in sdr 11 hdpe	SUBHEADER # _____ PIPE DIA. _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS) <u>EW-141-R TO 96 FEET</u>	STATION # _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____ STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____ STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____ STATION _____ LINEAR FT. _____
WEATHER CONDITIONS <u>Warm Cloudy</u>	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____ STATION _____ LINEAR FT. _____
START TIME <u>6 30 am</u>	RISER HEIGHT _____ TRENCH DEPTH _____
STOP TIME <u>5 00 pm</u>	SUMPS _____ VALVES _____

COMMENTS:

Tim Burgy Sr Tim Dye Robert Button and Shawn Bell arrived on site at 6 30 am had a tailgate safety meeting Drilled Well EW-141-R to 80 feet had to stop and change drill line. Drilled from 80 feet to 96 feet and hit sludge tried for 1 hour to get deeper and no progress at all. Set and completed at 96 feet. Cleaned up trash hauled dirt for benching. Made a bench for Well EW-85-R. Cleaned up around job trailer and fueled up equipment. Left site at 5 00 pm.

Tim Burgy Sr 5/16/11
CLIENT REPRESENTATIVE DATE
Shawn R. Padia Brown McCallister C. BA
NAME & TITLE

Tim Burgy sr. Fri 5/13/2011
AEGL SITE SUPERVISOR DATE



DAILY DIARY

DATE: th 6/2/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING		CONSTRUCTION	
0- LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
0 LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
0 LINEAR FEET OF WELL COMPLETION			TRENCH DEPTH
0 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		HEADER #	PIPE DIA.
0 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION	LINEAR FT.
			TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		SUBHEADER #	PIPE DIA.
		STATION #	LINEAR FT.
			TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL: #	PIPE DIA.
WEATHER CONDITIONS Cool Sunny		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
START TIME 730 am		STATION	LINEAR FT.
STOP TIME 700 pm		RISER HEIGHT	TRENCH DEPTH
		SUMPS	VALVES

COMMENTS:

730-830 / to job meet up with jeff

830-1140 / got with qaqc and pipeline to set drilling pattern / did check list & grease equipment.

1140-645 / haul dirt to locations for benches

645-700 / police area and secure for night

u truck jcb 718 21745421 vin 1318.9 hrs

b loader cat 953d c8e01794 ser. 3273.4


 CLIENT REPRESENTATIVE

4/6/11
 DATE

Ronnie Rowe **thur** **6/2/2011**
AEGL SITE SUPERVISOR **DATE**

James A. Bodie CDR Brown Colwell
NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: th 6/3/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
96 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
0 LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
96 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
54 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
48 SOLID PIPE -DIA. 6 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
ew-155r	SUBHEADER # _____ PIPE DIA. _____
ew-1ar	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS <u>Cool Sunny</u>	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>630am</u>	SUMPS _____ VALVES _____
STOP TIME <u>730pm</u>	

COMMENTS:

630-800/ mob rig to location/check equ.

900-1005/ set up rig/ start drilling

1005-1135/ drill to 36 ft

1135/1200/ set well

200-415/ mob to ar1/set up drill to 58 ft

415-730/ set well / clean up //complete wells clean up

Ronnie Rowe 4/6/11
CLIENT REPRESENTATIVE DATE

Benet A Todia CMAA
NAME & TITLE

Ronnie Rowe fri 6/3/2011
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: th 6/4/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING		CONSTRUCTION	
98.5 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
17.5 LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
81 LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH _____	
60 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		HEADER # _____	PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)		TRENCH DEPTH _____	
91ar		SUBHEADER # _____	PIPE DIA. _____
		STATION # _____	LINEAR FT. _____
		TRENCH DEPTH _____	
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS <u>Cool Sunny</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>630am</u>		SUMPS _____	VALVES _____
STOP TIME <u>700pm</u>			

COMMENTS:

630-745/ safety meeting/build bench/load material/service rig

745-810/ mob and set up rig on 91ar

810-1030/ start drilling hit obstruction at 17.5 /did not get through /abandon well

1030-330/ move bench/set up on new location drill to 81 ft obstruction at 39.5 drill through

330-700/ set well/clean up/ complete well clean up

[Signature] 6/6/11
CLIENT REPRESENTATIVE DATE
[Signature] COA Sum + Old Well
NAME & TITLE

Ronnie Rowe sat 6/4/2011
AEGLE SITE SUPERVISOR DATE

DAILY DIARY

DATE: MON 6/8/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING		CONSTRUCTION	
98 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
98 LINEAR FEET OF WELL COMPLETION		HEADER # _____	PIPE DIA. _____
77 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION _____	TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW 120R2		STATION # _____	LINEAR FT. _____
			TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
WEATHER CONDITIONS	Cool Sunny	RISER HEIGHT _____	TRENCH DEPTH _____
START TIME	630AM	LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
STOP TIME	700PM	RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

630-730 / TO SITE ,SAFETY MEETING, GREASE RIG MOB TO EW 120R2

730-830 / FUEL RIG, SET UP ON WELL

830-100 / DRILL WELL TD @98 FT

100-200 / SET WELL MOVE RIG OFF HOLE

200-500 / SET RIG UP ON EW 85R. COMPLETE WELL EW 120R2

500-700 / BUILD BENCH FOR EW81R.SERCURE AREA FOR NIGHT

Phil Morris 4/16/11
CLIENT REPRESENTATIVE DATE

Forrest B. Brown, Chairman CBA
NAME & TITLE

Ronnie Rowe mon 8/8/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: TUES 6/7/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING		CONSTRUCTION	
48 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
48 LINEAR FEET OF WELL COMPLETION		STATION _____	TRENCH DEPTH _____
27 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		HEADER # _____	PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)		STATION _____	TRENCH DEPTH _____
gw 85r		SUBHEADER # _____	PIPE DIA. _____
		STATION # _____	LINEAR FT. _____
		STATION # _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
down for 4HRS DUE TO WEATHER		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>630AM</u>		SUMPS _____	VALVES _____
STOP TIME <u>600pm</u>			

COMMENTS:

630-745 / TO SITE , SAFETY MEETING , GOT RIG READY TO DRILL

745-830 / START DRILLING EW 85R

830-1030 / DOWN FOR WEATHER LEFT SITE AT 1030

1030-230 / OFF WEATHER

230-330 / FINISH DRILLING EW85R TD 48FT

330-800 / FINISH AND COMPLETE WELL EW85R / SECURE AREA

[Signature]
CLIENT REPRESENTATIVE 6/7/2011
DATE
[Signature]
NAME & TITLE COO

Ronnie Rowe TUES 6/7/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: WED 8/8/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING	CONSTRUCTION
92 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ TRENCH DEPTH _____
92 LINEAR FEET OF WELL COMPLETION	HEADER # _____ PIPE DIA. _____
71 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	STATION _____ TRENCH DEPTH _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	SUBHEADER # _____ PIPE DIA. _____
COMPLETION: (WELL NUMBERS)	STATION # _____ TRENCH DEPTH _____
EW 122R	LATERAL: # _____ PIPE DIA. _____
_____	STATION _____ TRENCH DEPTH _____
_____	RISER HEIGHT _____ TRENCH DEPTH _____
_____	LATERAL: # _____ PIPE DIA. _____
GENERAL INFORMATION	STATION _____ TRENCH DEPTH _____
WEATHER CONDITIONS	RISER HEIGHT _____ TRENCH DEPTH _____
SUNNY / HOT	LATERAL: # _____ PIPE DIA. _____
START TIME <u>630AM</u>	STATION _____ TRENCH DEPTH _____
STOP TIME <u>700PM</u>	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

630-800 / TO SITE , SAFETY MEETING , TRY TO MOB ON EW 81R SLOP TO WET

800-830 / MOVE TO EW 122R SET UP

830-230 / START DRILLING 65-68 FT VERY WET SPENT ABOUT 45 MIN

BETWEEN 90-92 VERY WET / GETTING RECOVERY NO FT 1.5HRS/ SET WELL @92 PER QC.

230-600 / complete well / SECURE AREA

600-700 / MOVE RIG TO NEXT LACATION HELP HOOK UP WELL

Paul M. [Signature] 4/8/11
CLIENT REPRESENTATIVE DATE

Ronnie Rowe
NAME & TITLE

Ronnie Rowe WED 8/8/2011
AEGLE SITE SUPERVISOR DATE



DAILY DIARY

DATE: THUR 6/9/2011

PROJECT NAME **Lorain County Landfill**

PROJECT# 101.11105

DRILLING		CONSTRUCTION	
87 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
87 LINEAR FEET OF WELL COMPLETION		HEADER # _____	PIPE DIA. _____
45 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
48 SOLID PIPE -DIA. 6 in sdr 11 hdpe		STATION _____	TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW81R		STATION # _____	LINEAR FT. _____
EW78R		STATION # _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
SUNNY / HOT		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME _____ 630AM		SUMPS _____	VALVES _____
STOP TIME _____ 600PM			

COMMENTS:

630-745 / TO SITE SAFETY MEETING , SET UP ON EW81R , SERVICE EQU

745-915 / DRILL WELL TD 43FT

915-1015 / MOB TO EW78R, START WELL COMPLETION

1015-115 / COMPLETE WELL 81R, DRILL EW78R TO 44FT , FROM 17 TO 35 FEET VERY WET DRILL 1.5 HRS(SLUG)

115-600 / COMPLETE WELL EW78R , MOB TO EW143R , 1 HRS BENCHING, SECURE AREA

CLIENT REPRESENTATIVE _____ DATE _____

Ronnie Rowe **THUF** **6/8/2011**
AEGL SITE SUPERVISOR **DATE**

NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/9/2011

PROJECT NAME LORAIN COUNTY.
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # <u>12"</u> PIPE DIA. <u>12"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>123'ft.</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>4+70</u> <u>5+93</u> TRENCH DEPTH <u><5'ft.</u>
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	LATERAL # <u>EW-38R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+20</u> LINEAR FT. <u>20'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
GENERAL INFORMATION	LATERAL: # <u>EW-122R</u> PIPE DIA. <u>6"</u>
WEATHER CONDITIONS	STATION <u>0+0</u> <u>0+50</u> LINEAR FT. <u>50'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>7:00 A.M.</u>	AIRLINE _____ FM _____
STOP TIME <u>6:00 P.M.</u>	

COMMENTS:

Attended safety meeting. Excavated for 12" header from station 4+70 to 5+93. Installed 123'ft of 12" SDR 17 HDPE pipe including one 12"x6" tee at station 4+74 for lateral to EW-38R and one 12" flange connecting to the 12" valve installed on the 24"x12" tee at the tie in point. Excavated for 6" lateral to EW-38R and installed 20'ft of 6" SDR 17 HDPE pipe including one 6" 90° degree elbow at station 0+0 for vacuume riser to EW-38R and connecting to 12"x6" header tee at station 0+20. Excavated for lateral to EW-122R. Installed 6" 90° degree elbow on existing vacuume riser with 6" electrocoupler and installed 50'ft of 6" SDR 17 HDPE pipe with one 6" 90° degree elbow at 0+50 for vacuume riser. Abandoned EW-122 per detail. Shot all pipe installed this day to confirm 3% minimum grade. Placed survey risers and caution tape while backfilling. Temporarily hooked up EW-81R and EW-78R.

CLIENT REPRESENTATIVE _____ DATE _____

Bob Minor 6/9/2011
AEGL SITE SUPERVISOR DATE

NAME & TITLE _____



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/10/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
PERFORATED PIPE-DIA.	HEADER # _____ PIPE DIA. _____
SOLID PIPE -DIA.	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	SUBHEADER _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	LATERAL # <u>EW-81R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+20</u> LINEAR FT. <u>20'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL: # <u>EW-78R</u> PIPE DIA. <u>6"</u>
	STATION <u>0+0</u> <u>0+25</u> LINEAR FT. <u>25'ft.</u>
	RISER HEIGHT _____ TRENCH DEPTH <u><5'ft.</u>
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	AIRLINE _____ FM _____
GENERAL INFORMATION	
WEATHER CONDITIONS	
START TIME <u>7:00 A.M.</u>	
STOP TIME <u>11:30 A.M.</u>	

COMMENTS:

Attended safety meeting with crew. Excavated for lateral to EW-81R. Installed 6" 90° degree elbow on existing vacuume riser. Installed 20'ft of 6" SDR 17 HDPE pipe including one 6" 90° degree elbow at station 0+20 for new vacuume riser. Reconnected wellhead to new riser. Abandoned EW-81 per detail. Excavated for lateral to EW-78R. Installed 6" 90° degree elbow on existing vacuume riser. Installed 25'ft of 6" SDR 17 HDPE pipe including one 6" 90° degree elbow at station 0+25 for new vacuume riser. Reconnected wellhead to new riser. Abandoned EW-78 per detail. Shot all pipe installed to confirm 3% minimum grade. Placed survey risers and caution tape while backfilling. Left site early due to rain.

CLIENT REPRESENTATIVE _____ DATE _____

Bob Minor 6/10/2011
AEGL SITE SUPERVISOR DATE

NAME & TITLE _____



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 6/11/2011

PROJECT NAME LORAIN COUNTY
PROJECT# 20211111

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		HEADER #	PIPE DIA.
SOLID PIPE -DIA.		STATION	LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		SUBHEADER	PIPE DIA.
		STATION	LINEAR FT.
		STATION	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL: #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
GENERAL INFORMATION		LATERAL #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
		STATION	LINEAR FT.
		RISER HEIGHT	TRENCH DEPTH
START TIME <u>7:00 A.M.</u>		TIE IN <u>2" & 4"</u> <u>2 each</u> PUMP SET <u>7 each</u>	
STOP TIME <u>1:00 P.M.</u>			

COMMENTS:

Attended safety meeting with crew. Installed pumps for TEW-1R at 102'ft, TEW-2R at 96'ft, TEW-3R at 100'ft, EW-164R at 90'ft, EW-56R at 99'ft, EW-120R at 97'ft, and EW-165R at 88'ft. Set four 36" ADS encasements on isolation valves. Tied 2" air and 4" forcemain into existing air and forcemain at two locations near EW-56R and near EW-147R.

CLIENT REPRESENTATIVE _____ DATE _____

Bob Minor 6/11/2011
AEGL SITE SUPERVISOR DATE

NAME & TITLE _____

DAILY DIARY

DATE: mon 6/13/2011

PROJECT NAME	<u>Lorain County Landfill</u>
PROJECT#	10111105

DRILLING		CONSTRUCTION	
136 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
136 LINEAR FEET OF WELL COMPLETION		HEADER # _____	PIPE DIA. _____
73 PERFORATED PIPE-DIA. 8 in sdr 11 hdpe		STATION _____	LINEAR FT. _____
72 SOLID PIPE -DIA. 8 in sdr 11 hdpe		STATION _____	TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW50R		STATION # _____	LINEAR FT. _____
EW49R		STATION # _____	TRENCH DEPTH _____
EW54R		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
SUNNY		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME _____ 630AM		LATERAL: # _____	PIPE DIA. _____
STOP TIME _____ 630PM		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

830AM-730AM / TO SITE, SAFETY MEETING, PUT BUCKET ON RIG

730AM-845AM / BUILD BENCH FOR VEW 50R 1.5 HR , SET UP ON LOCATION

845AM-1000AM / DRILL EW50R TD @ 42 FT.

1000AM-100PM / COMPLETE WELL EW50R , MOVE SET UP AND DRILL EW49R TO TD @ 48 FT

100PM-200PM / SET WELL, MOVE AND SET UP ON EW54R

200PM-315PM / DRILLED EW54R TD @ 48 FT

315PM-630PM / COMPLETE ALL THREE WELLS , CLEAN AND SECURE AREA

Ronnie Rowe mon 6/13/2011
AEGL SITE SUPERVISOR DATE

Ronnie Rowe

mon 6/13/2011

AEGL SITE SUPERVISOR

DATE _____

CLIENT REPRESENTATIVE

DATE _____

NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: TUES 6/14/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
164 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
164 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
122 PERFORATED PIPE-DIA. 8 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
48 SOLID PIPE -DIA. 8 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
EW156	SUBHEADER # _____ PIPE DIA. _____
EW157	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
SUNNY	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>630AM</u>	SUMPS _____ VALVES _____
STOP TIME <u>600PM</u>	

COMMENTS:

630AM-730AM / TO SITE, SAFETY MEETING

730AM-1000AM / START DRILLING EW156 TD @ 77 FT

1000AM-1130AM / SET WELL MOVE TO NEXT LOCATION

1130AM-300PM / START DRILLING EW157 TD @ 87 FT

300PM-600PM / COMPLETE WELLS, SECURE AREA

Ronnie Rowe 6/15/11
CLIENT REPRESENTATIVE DATE
James A. Tola Senior Geotechnical COA
NAME & TITLE

Ronnie Rowe TUES 6/14/2011
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: WED 6/15/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING	CONSTRUCTION
87 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
87 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
66 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
EW62R2	SUBHEADER # _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
SUNNY	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ co,plate R FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>830AM</u>	SUMPS _____ VALVES _____
STOP TIME <u>600PM</u>	

COMMENTS: 1.5 HRS DRILLING 79-87 FT

630AM-730AM / TO SITE , SAFETY MEETING , CHECK EQU

730AM-145PM / DRLL EW62R2 TO 87FT

145PM-600PM / SET WELL , COMPLETE WELL , HOOK WELL UP , WORK ON LOCATION FOR TEW8R

MOVE EQU TO LOCATION , SECURE AREA

Ronnie Rowe 6/16/11
CLIENT REPRESENTATIVE DATE

Ronnie Rowe
NAME & TITLE

Ronnie Rowe WED 6/15/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: THUR 8/18/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
114 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	_____ LINEAR FT. _____
114 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
77 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
48 SOLID PIPE -DIA. 6 in sdr 11 hdpe	_____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
TEW8R	SUBHEADER # _____ PIPE DIA. _____
EW22R	_____ LINEAR FT. _____
_____	STATION _____ TRENCH DEPTH _____
_____	LATERAL: # _____ PIPE DIA. _____
_____	STATION _____ LINEAR FT. _____
_____	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
COOL/LATE RAIN	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>630AM</u>	LATERAL: # _____ PIPE DIA. _____
STOP TIME <u>430PM</u>	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

630AM-700AM / TO SITE , SAFETY MEETING

700AM-1115AM / SET UP , DRILL TEW8 GOT REAL WET AT 74 FEET AND TO SET WELL AT 77FT

1115AM-1215PM / SETTING WELL , MORE TO EW22R SET UP

1215PM-1115PM / DRILLWELL TO 37 FT

115PM-430PM / SET WELL , COMPLETE WELLS AND SECURE AREA LATE RAIN

Michelle 8/18/11
CLIENT REPRESENTATIVE DATE

Ronnie Rowe
NAME & TITLE

Ronnie Rowe THUR 8/18/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: FRI 6/17/2011

PROJECT NAME Lorain County Landfill
PROJECT# 10111105

DRILLING	CONSTRUCTION
137 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
137 LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
100 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
43 SOLID PIPE -DIA. 6 in sdr 11 hdpe	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
EW145R2	SUBHEADER # _____ PIPE DIA. _____
EW107R	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
COOL/LATE RAIN	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
START TIME <u>630AM</u>	STATION _____ co,plete R FT. _____
STOP TIME <u>630PM</u>	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

630AM-730AM / TO SITE ,SAFETY MEETING, SET UP TO DRILL EW145R2

730AM-1130AM / DRILL WELL TO 95FT, QC CALLED WELL BECAUSE IT WAS VERY WET NO RETURN

1130AM-130PM / SET WELL MOVE SET UP ON EW107R

130PM-345PM / DRILL WELL TO 42 FT CALLED BECAUSE IT WAS WET

345PM-630PM / MAKE WELL SET WELL ,COMPLETE WELLS,CLEAN TRASH,SECURE AREA,MOVE RIG TO EW110R

Paul H. Davis 6/18/11
CLIENT REPRESENTATIVE DATE

David A. Davis Senior Geotechnical Engineer CPA
NAME & TITLE

Ronnie Rowe FRI 6/17/2011
AEG SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: SAT 6/18/2011

PROJECT NAME Lorain County Landfill

PROJECT# 10111105

DRILLING	CONSTRUCTION
74 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	_____ LINEAR FT. _____
74 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
53 PERFORATED PIPE-DIA. 6 in sdr 11 hdpe	HEADER # _____ PIPE DIA. _____
24 SOLID PIPE -DIA. 6 in sdr 11 hdpe	_____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
EW110R	SUBHEADER # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
_____	STATION # _____ TRENCH DEPTH _____
_____	LATERAL: # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
_____	STATION _____ TRENCH DEPTH _____
_____	RISER HEIGHT _____ TRENCH DEPTH _____
GENERAL INFORMATION	LATERAL: # _____ PIPE DIA. _____
WEATHER CONDITIONS	_____ LINEAR FT. _____
NICE	STATION _____ TRENCH DEPTH _____
_____	RISER HEIGHT _____ TRENCH DEPTH _____
START TIME <u>630AM</u>	LATERAL: # _____ PIPE DIA. _____
STOP TIME <u>200PM</u>	_____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

630AM-730AM / TO SITE, SAFETY MEETING, CHECK EQU,

730AM-1030AM / DRILL WELL TO 74 FT

1030AM-200PM / SET WELL COMPLETE WELL, MOVE RIG START BREAKEN DOWN RIG CLEAN AND SECURE AREA

Amelia Todio 6/18/11
CLIENT REPRESENTATIVE DATE

Amelia Todio Brown 6/18/11 CQA
NAME & TITLE

Ronnie Rowe SAT 6/18/2011
AEGL SITE SUPERVISOR DATE

Appendix B: Construction Photographs and Description Logs

(CD Enclosed)

2011 GCCS - Phase 1 Construction Certification Report - Photograph Log

Photo ID	Description
1	Landfill Gas Extraction Well EW-158 installation
2	Setting EW-158 with PVC end cap
3	Hydrating bentonite at EW-158
4	Tie-In EW-158 to EW-154
5	CMP road crossing for EW- 154 to EW-47R
6	Tie-In road crossing for EW-47R
7	Completed EW-120R
8	Sludge material encountered at EW-141R; stopped drilling after two hours at 96 feet
9	Completed branch saddle
10	Hydrating bentonite to seal LR7 manifold pipes
11	Completed LR7 manifold
12	Installation of airline and force main to EW-147R
13	Pipelines for airline and force main to EW-147R
14	Caution marking tape from EW-147R to TEW-1R
15	Fusing lateral for EW-39R
16	Six-inch lateral from 12-Inch header for EW-39R
17	Benching road crossing - June 7, 2011
18	Stainless steel airline and PVC force main shut off valves
19	Measuring depth of EW-85R with weighted tape
20	Installing 24-Inch x 12-inch header spur
21	Six-inch branch saddle in 24 inch header
22	Caterpillar IMT AF-130 drill rig
23	Force main isolation valve in corrugated plastic enclosure
24	Geomembrane repair at EW-145R2
25	Completion of LR6
26	12-Inch x 6-Inch branch saddle tie-in for EW-54R
27	Excavating to install the 4-Inch valve in the vacuum line at LR6

Appendix C: Resumes for CQA Certifying Engineer and Inspectors

Richard A. Isaac, P.E.

Experience Summary

Rick Isaac has 32 years of extensive experience managing, performing, and certifying engineering design, permitting, and construction quality assurance (CQA) programs for new land disposal and other solid and hazardous waste management facilities. Mr. Isaac's CQA experience includes landfills in Ohio, Virginia, West Virginia, Pennsylvania, and Maryland for new cell construction, final cover system construction and final landfill closure, and landfill gas collection and control system (GCCS) installations. Mr. Isaac has prepared and certified construction quality assurance plans (CQAPs) for landfills used as the basis for performing field oversight and CQA services. Mr. Isaac has managed and certified the CQA activities on recent projects for Republic in Ohio at the Lorain County II Landfill, County Environmental of Wyandot Landfill, County Land Development (CLD) Landfill, and Lewis Landfill (Closed). He has successfully completed and received approval of Construction Certification Reports from the Ohio Environmental Protection Agency (Ohio EPA) for various types of construction at each of these landfills.

In addition, Mr. Isaac brings to his work extensive experience in managing feasibility studies (FS) and remedial design/remedial action (RD/RA) for Superfund sites under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and state-led remedial sites, as well as managing corrective measures studies (CMS) and implementation of remediation systems for operating facilities under Resource Conservation and Recovery Act (RCRA). He also possesses extensive experience with bid procurement services including preparation of contract documents, technical specifications, and construction drawings for a wide variety of projects including solid and hazardous waste facilities, remediation, and the cleaning and demolition of buildings, both municipal and industrial. He participates in and/or conducts pre-bid and pre-construction meetings, bid review, evaluation, recommendation, and contract award.

Assignment

Certifying Engineer

Education

B.S. Civil Engineering, West Virginia University, Morgantown, 1978

Registration

Professional Engineer in Ohio, Pennsylvania, Michigan, Mississippi, and Louisiana; West Virginia (retired status); Virginia (retired status); Colorado (retired status); Wyoming (retired status); and Montana (retired status)

Experience

33 years

Joined Firm

2007

Training

OSHA 29 CFR 1910.120, Health and Safety Training

Relevant Expertise

- Solid and Hazardous Waste Management
- CERCLA, RCRA, and Remediation
- Site Assessments and Investigations
- Regulatory Compliance
- Storm Water/Surface Water Management
- Abandoned Mine Lands and Mining

Solid and Hazardous Waste Management

County Land Development Landfill Closure CQA Services, Republic Services, Inc., Salem, Ohio

Managed the CQA for the implementation of final closure activities at a sanitary/construction demolition debris (C&DD) landfill in Salem, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the final closure implementation including final cover construction, landfill gas management system expansion, and storm water controls. Managed and assisted in the preparation, performed quality assurance (QA) review, and served as the "Engineer of Record" for the Final Closure Certification Report submitted to the Ohio EPA to document the implementation of the final landfill closure construction.

County Environmental of Wyandot Landfill Gas Design and CQA Services, Republic Services, Inc., Carey, Ohio

Managed the CQA for the expansion of the landfill gas management system at a landfill in Carey, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of an enclosed flare station, condensate sumps, 24-inch diameter high-density polyethylene (HDPE) header pipeline, laterals to new and re-drilled gas extraction wells, condensate and airlines, and road crossings. Managed the preparation and provided QA review of the construction drawings for the landfill gas management system expansion. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

Lorain County II Landfill Gas Design and CQA Services, Republic Services, Inc., Oberlin, Ohio
Managed the CQA for the expansion of the landfill gas management system at a landfill in Oberlin, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of an enclosed flare station, condensate sumps, 24-inch and 18-inch diameter HDPE header pipelines, laterals to new and re-drilled gas extraction wells, condensate and airlines, and road crossings. Managed the preparation and provided QA review of the construction drawings for the landfill gas management system expansion. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

Lorain County I Landfill Gas CQA Services, Allied Waste Industries, Inc., Oberlin, Ohio
Managed the CQA for the expansion of the landfill gas management system at a closed landfill in Oberlin, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of 8-inch diameter HDPE header pipelines, laterals to new and re-drilled gas extraction wells, installation of Landtec combination wellheads, leachate system force main, condensate and airlines, and road crossings. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

Cherokee Run Landfill Gas Design Services, Republic Services, Inc., Bellefontaine, Ohio
Managed the design of the expansion of the landfill gas management system at a landfill in Bellefontaine, Ohio. Provided direction to the design engineers who prepared the construction drawings and details for use by the installer to construct the landfill gas management system expansion. The expansion activities included installation of a condensate sump, 18-inch diameter HDPE header pipeline, laterals to new and re-drilled gas extraction wells, and condensate and airlines. Provided QA review of the construction drawings for the landfill gas management system expansion.

Noble Road Landfill Vertical Expansion Perimeter Berm Design, Republic Services, Inc., Shiloh, Ohio
Managed the design of a perimeter berm used to expand the available air space at a landfill in Shiloh, Ohio. Provided direction and assisted staff engineers in the preparation of "construction-ready" design drawings for use by contractors in preparation of bids. The drawings included grading plans, construction sequence plans, leachate management system plans, storm water management plans, and details. Prepared the contract documents and technical specifications for use by contractors in preparing bids. Participated in the bid procurement, bid review, and contractor selection for construction of the perimeter berm. Performed QA review, and served as the "Engineer of Record" for the berm design.

Hazardous Waste Landfill Remediation, Laufen International, Inc., East Sparta, Ohio
As part of a RCRA Corrective Action through a Consent Decree with the U.S. EPA Region 5, prepared an Interim Measures Work Plan for the remediation of a hazardous waste landfill at a facility in eastern Ohio. The Interim Measures included landfill cap enhancements, leachate management system modifications, construction of a flood protection levee, modification of the perimeter surface drainage system, and modification of the settlement monitoring program. Managed and prepared the contract documents, technical specifications, and drawings to procure a geosynthetics installer for the synthetic components of the new final cover system. Managed the implementation and CQA for the construction of the Interim Measures including construction of a new final cover system to encapsulate the existing landfill and the geotechnical program and construction of the flood protection levee. Prepared the construction certification report for submittal to the U.S. EPA following completion of the remediation activities.

Design, Permitting, and Construction of a Solid Waste Transfer Station, Rumpke Waste, Inc., Ironton, Ohio

Managed the design, permitting, and construction of a solid waste transfer station for a major solid waste company in southeast Ohio. The facility permit was through the Ohio EPA Southeast District Office in accordance with the Ohio Administrative Code rules and regulations pertaining to transfer stations. Coordinated and managed the transfer facility design by assembling a team of design professionals including site work, geotechnical and structural, environmental management systems, architectural, and mechanical,

electrical, and plumbing including both wet and dry fire suppression systems. Prepared and obtained the required building permits through the Ohio Department of Commerce, Bureau of Building Code Compliance office. Managed the preparation of the contract documents, technical specifications, and construction drawings including QA/QC of the final bid documents and was responsible for the bid procurement including pre-bid meeting, bid evaluation, recommendation, and contract award. Performed limited CQA during the facility construction including project progress meetings, contractor requests for information, pay application review and approval, and change order requests.

Design and Permitting for a Type I Restricted Waste Landfill, Mittal Steel USA, Burns Harbor, Indiana

Managed the design and permit preparation for a Type I Restricted Waste Landfill for disposal of secondary wastewater treatment plant sludge at a major steel manufacturing facility in Indiana. Performed the leachate management system evaluation including landfill floor configuration, HELP Model to determine leachate volumes, and design calculations for pipe sizes, perforation openings, sumps, and pumps. Assisted with the preparation of the Special Exception to the Zoning Application required for the facility.

C&DD Landfill Closure Certification, Stambaugh Properties Ravenna, Ohio

Managed the closure and closure certification of a C&DD landfill in Ravenna, Ohio. Performed field oversight services including soil sample collection for geotechnical analysis. Prepared the Closure Certification Report and served as the Engineer-of-Record. Submitted the Closure Certification Report to the Portage County Health Department.

Hazardous Waste Facility Post – Closure Plan, ESAB Welding & Cutting Ashtabula, Ohio

Prepared and submitted to the Ohio EPA a hazardous waste facility post-closure plan for former lime ponds and associated impoundments at a welding wire manufacturer in Northeast Ohio. Post-closure plan included discussions on site security, inspection plan, monitoring plan, maintenance plan, and financial assurance.

Design and Permitting of a Solid Waste Transfer Station, Waste Management, Inc., Wooster, Ohio
Managed the design and permitting of a solid waste transfer station for a major solid waste company in central Ohio. The design included grading and storm water control plans, vehicle sequencing and staging plans, and detailed design of the transfer building structure and operating pad.

Design and Permitting for the Vertical Expansion of a Sanitary Landfill, Mid-American Waste Systems, Gary, Indiana

Managed the design and permitting for the vertical expansion of an existing sanitary landfill. Project included the design of leachate management, gas management, grading, closure and post-closure, and erosion and sediment control plans. Coordinated site remediation activities, including a toe drain collection and conveyance system and a groundwater cut-off slurry wall.

Design and Permitting for the Upgrade and Compliance of a Large Sanitary Landfill, City of Virginia Beach, Virginia

Managed the design and permitting for upgrade and compliance of a large existing sanitary landfill located in the Tidewater region of Virginia with new Subtitle D regulations. The design included plans for grading, leachate collection system and groundwater underdrain, closure and post-closure, and storm water management. Wetlands associated with expansion were permitted through the US Army Corps of Engineers Nationwide 26 Permit process.

Design and Closure of an On-Site Waste Disposal Site at an Aluminum-Processing Facility, Alcoa Cleveland Works, Cleveland, Ohio

Managed the design and closure of an on-site waste disposal site at an aluminum processing facility. Closure plan included grading, storm water management, gas management, post-closure care, and land-use plans.

Design and Permitting for Closure of Three Disposal Units at a Coke Facility, Wheeling-Pittsburgh Steel, Follansbee, West Virginia

Managed the design and permitting for the closure of three disposal units located at a coke facility along the Ohio River. Closure plans included grading, storm water management, gas management, and post-closure care

and land use plans. Designed the closure plans and prepared permit applications as "fast track" projects in order to meet imposed regulatory deadlines.

Closure of a Hazardous Ash Disposal Impoundment at a Paint Pigment Facility, Cytec Industries, Inc., Washington, West Virginia

Managed the closure of a hazardous ash disposal impoundment at a paint pigment facility located along the Ohio River in West Virginia. The closure included final grading plan; final cover system configuration, including geogrids to allow construction equipment access to the ash material during the construction phase; and surface water management.

Design and Preparation of Permit Application Drawings for the Vertical Expansion of a Landfill, City of Barnstable, Massachusetts

Managed the design and preparation of permit application drawings for the vertical expansion of an existing landfill in Massachusetts. The project included the design of grading plans, disposal cell phase and sequence plans, storm water management, leachate collection and treatment systems, landfill gas management system, liner and fill cap system configurations, and closure and post-closure care plans. The existing site is located on Cape Cod within a Zone II Aquifer system, which required specialized engineering designs to ensure zone environmental protection of the groundwater systems at the site.

Preparation of a Waste Alternatives Study for a Large Paper Mill Facility, WESTVACO, Luke, Maryland

Managed the preparation of a Waste Alternatives Study for a large paper mill facility located in western Maryland. The study compared the development, design, permit preparation, and construction of two potential landfill sites: one located in West Virginia and the second located in Maryland. The study evaluated operations, design, permitting, material hauling to each site, and construction of each potential site for a study period of 20 years, with present worth analysis performed to determine capital required to finance the project. Each potential site was also compared to contract waste collection, transportation, and disposal by an independent waste contractor.

Design and Permitting for a Construction and Demolition Debris Landfill, Warren Recycling, Inc., Warren, Ohio

Managed the design and permitting for a C&DD landfill located in Warren, Ohio. The project included License Application forms, grading plans, leachate management plans, storm water management plans, and fill sequence plans. Applied for and received a variance from groundwater monitoring from the City Health Department.

Design and Permitting for a Construction and Demolition Debris Landfill, Iron Valley, Chesapeake, Lawrence County, Ohio

Managed the design and permitting for a C&DD landfill located in Lawrence County, Ohio. The project included License Application forms, grading plans, leachate management plans, storm water management plans, and fill sequence plans.

Design and Permitting of the Closure for a Residual Carbon Waste Disposal Facility, The Stackpole Corporation, St. Marys, Pennsylvania

Managed the design and permitting of the closure for a residual carbon waste disposal facility in Pennsylvania. Design included a combination RCRA-style final cover system and standard State of Pennsylvania cover system.

CERCLA, RCRA, and Remediation

Bid Documents, Technical Specifications and Construction Drawings for a Hydraulic Barrier Wall and Groundwater Extraction and Treatment System for a Site in Holland, Michigan

Prepared the bid documents, technical specifications, and construction drawings for the installation of a hydraulic barrier wall and groundwater extraction and treatment system at a former manufacturing site. The hydraulic barrier wall consists of a soil-bentonite (SB) slurry wall and blast furnace slag- cement-bentonite (BFSCB) slurry wall. Groundwater extraction and treatment system consists of five extraction wells, water

filtration treatment, and deep well injection under high pressure. Bid documents and technical specification were prepared to following the CSI 2004 format. Participated in pre-bid meetings, bid evaluation, and contractor recommendation and contract award. Served as the Engineer-of Record for the design and assisted with the field CQA program including contractor oversight, project progress meetings, and contractor requests for information.

Preparation of RD/RA for Former Tar and Chemical Facility, Reilly Industries, Inc., Dover, Ohio
Managed the preparation of the RD/RA for a former tar and chemical facility located in Dover, Ohio. The remedial design included excavation of on-site soils and sediments contaminated with polycyclic aromatic hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, and xylene (BTEX) for either off-site treatment by thermal destruction and disposal or placement within an on-site building foundation closed by the construction of an Ohio EPA- compliant solid waste final cover system; construction of a groundwater recovery trench with recovered groundwater discharged to the local publically owned treatment works (POTW); and placement of soil cover.

Hydrogeologic Site Investigation and Preparation of a Focused FS for a Lagoon at a Major Coke-Producing Facility, US Steel, Clairton, Pennsylvania
Managed the performance of a hydrogeologic site investigation and preparation of a "focused" FS for a lagoon contaminated with polynuclear aromatic hydrocarbons, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) at a major coke- producing facility. Performed the FS to adhere to the requirements of the Pennsylvania Department of Environmental Protection (PADEP). Alternatives evaluated included augmenting the existing groundwater pump and treat with lagoon sediment solidification/stabilization and construction of a PADEP-compliant final cover system.

Site Investigation, Permitting, Remedial Design, and Remediation Implementation at a Creosote Wood Treating Facility, Southern Wood Piedmont, Benson, North Carolina
Managed the site investigation, permitting, remedial design, and remediation implementation at a creosote wood treating facility in North Carolina. Surface impoundments used for disposal of creosote and surface water were remediated by stabilization/solidification of the resulting sludge and covering with a solid-waste-style final cover system.

Preparation of a Feasibility Study for a Large Primary Aluminum Facility, Ormet, Hannibal, Ohio
Managed the preparation of a FS for a large primary aluminum facility located along the Ohio River in the State of Ohio. Five impoundments, a former potash disposal area, a former spent carbon disposal area, a former construction material and demolition debris area, and the backwash area required remediation for fluoride, cyanide, and VOCs. The final proposed remedy included construction of RCRA-style final cover systems; soil washing/soil flushing aided by a Ranney well, which influenced the flow of groundwater; and river sediment dredging.

Preparation of a "Focused" Corrective Measures Study for a Hazardous Measures Recycling Facility, Safety-Kleen, Hebron, Ohio
Managed the preparation of a "focused" CMS for a hazardous materials recycling facility in the State of Ohio. Implemented interim corrective measures including groundwater recovery wells and low-profile air stripper with a groundwater cut-off wall. The CMS evaluated alternatives for remediating VOCs that had entered the soils and groundwater as a result of a fire at the facility.

Design of an Ultraviolet Peroxidation Groundwater Treatment System, Honeywell, Annapolis, Maryland
Managed the design of an ultraviolet (UV) peroxidation groundwater treatment system. The design included the UV system and associated groundwater recovery system for the remediation of VOCs, and SVOCs. Prepared contract documents, technical specifications, and construction drawings for use in the contractor bid procurement process.

Paint Sludge and Sediment Remediation in Lake Michigan, Flanders Industries, Inc., Menominee, Michigan

Managed the design and preparation of contract documents, technical specifications, and construction drawings for paint sludge and sediment remediation in Lake Michigan. Project included the design and construction of an impermeable dike built in Lake Michigan to isolate the contaminated sediments, sediment removal plans, sediment staging and sequencing plans, sediment testing plans, and site restoration plans.

Design and Construction of a Recovery and Treatment System at a Carbon Graphitizing Facility, The Stackpole Corporation, St. Marys, Pennsylvania

Provided QA/QC and senior oversight for the design and construction of a recovery and treatment system at a carbon graphitizing facility in Pennsylvania. The system included 14 groundwater recovery wells and soil vapor extraction for chlorinated organics.

General Engineering

Implementation of Design/Build Services for Building Demolition, TRW, Inc., Cleveland, Ohio

Lead Engineer responsible for providing direction and oversight to the onsite CQA inspector throughout the performance of the building demolition for a former automobile parts manufacturing facility. Site activities included asbestos abatement, multi-story building complex demolition consisting of steel and wood frame, concrete, block and brick buildings including removal, cleaning, and off-site disposal of tanks and pipelines containing residual materials, removal, cleaning, and off-site disposal of PCB-containing transformers, and segregation and recycling of steel, concrete, and brick materials. Provided interpretation of project specifications and conducted bi-monthly project progress meetings.

Design, Technical Specifications and Construction Drawings for Filter Press Installation, Whirlpool Corporation, Marion, Ohio

Project Manager for the design and preparation of technical specifications and construction drawings for the installation of a filter press in an existing water treatment building. Prepared the civil component of the specifications and drawings and managed the preparation of the structural, mechanical, electric, and plumbing (MEP) components of the project. Installed the filter press in the existing filter press building by retrofitting the inside of the building and the existing structural components and MEP. Installation of the filter press allowed the client to realize a two-fold increase in filtering the effluent from the onsite wastewater treatment plant (WWTP).

Technical Specifications and Construction Drawings for Building Demolition, City of Dayton, Office of Economic Development, Dayton, Ohio

Prepared the contract documents, bidding documents, technical specifications, and construction drawings for the demolition of a 845,000 square foot, multi-story building complex consisting of steel frame, concrete, block and brick buildings including removal and off-site disposal of tanks and pipelines containing residual materials. Contract and bidding documents were prepared to adhere to client's (municipal) preferred formats. Participated in pre-bid and pre-demolition meetings, bid evaluation, and contractor recommendation and contract award. Managed the CQA program including contractor oversight, project progress meetings, and contractor requests for information.

Technical Specifications and Construction Drawings for Building Demolition, Columbus Recreation and Parks, Columbus, Ohio

Prepared the contract documents, bidding documents, technical specifications, and construction drawings for the demolition of a 25,500 square foot, three-story, steel frame, concrete, block and brick building including removal and off-site disposal of an underground storage tank (UST). Contract and bidding documents were prepared to adhere to client's (municipal) preferred formats. Participated in pre-bid and pre-demolition meetings, bid evaluation, and contractor recommendation and contract award. Project included field survey and verification of existing utilities associated with the building and preparation of a site grading plan following removal of the building debris from the site.

Cleaning, Asbestos Abatement, and Demolition of Aboveground Storage Tanks, Buildings, Process Equipment, and Pipelines at a Large Coal Tar Refining Facility, Reilly Industries, Inc., Cleveland, Ohio

Managed the cleaning, asbestos abatement, and demolition of aboveground storage tanks (500 to 1,000,000 gallons) and pipelines and demolition of facility buildings and process equipment at a large coal tar refining facility under the Ohio EPA Cessation of Regulated Operations (CRO) Program. Products produced at the site included coal tar and coal tar distillates, creosote, naphthalene, and oils. Directly prepared technical specifications and construction drawings for use in bid procurement, conducted pre-bid and pre-demolition meetings, bid review and evaluation and assisted client with contract award. Managed the field oversight services throughout performance of the field activities.

Site Assessments and Investigations

Preparation of Phase I Environmental Site Assessment, City of Steubenville, City Engineer, Steubenville, Ohio

Project Manager. Performed the Phase I Environmental Site Assessment (ESA) in accordance with ASTM E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The Phase I ESA included environmental database searches, interviews with past property owners, limited title searches, site reconnaissance, agency information reviews, and report preparation.

Preliminary Phase II Site Screening, Whittier Peninsula Properties, Columbus Recreation and Parks, Columbus, Ohio

Project Manager. The purpose of the site screening was to review historical information and data related to environmental issues and concerns associated with the Peninsula properties, develop a site ranking system, and develop preliminary recommendations and costs for performing Phase II site investigation activities to identify potential impacts to the soils and groundwater at the Whittier Peninsula.

Phase II Environmental Site Investigation, Whittier Peninsula Properties, Columbus Recreation and Parks, Columbus, Ohio

Project Manager. The Phase II ESI included field work, laboratory analysis, and reporting writing in accordance with the Ohio EPA Voluntary Action Program (VAP) rules and regulations. Field work included collection of soil samples using the Geoprobe® Direct-Push Technology and installation and sampling of groundwater monitoring wells. Prepared the report narrative text, tables, and drawings.

Preparation of Phase I Environmental Site Assessment, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a Phase I ESA of Short Street in Columbus, Ohio. Performed the Phase I ESA for the City of Columbus Street Design Department as part of the street-widening program. Used ASTM E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process in the performance and preparation of the Phase I ESA report.

Preparation of Phase II Environmental Site Investigation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a site investigation performed at Reynolds Avenue in the City of Columbus, Ohio. Performed work for the City of Columbus Street Design Department as part of the street-widening program. The site investigation included the performance of Geoprobe holes to collect soil samples for laboratory analysis prior to initiation of construction activities. Prepared a Phase II Environmental Site Investigation Report presenting the results of the investigation and conclusions that no subsurface contamination was present within the construction limits.

Preparation of Phase II Environmental Site Investigation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a site investigation at an intersection along Hudson Street in the City of Columbus, Ohio. The intersection was being modified to include turning lanes and Geoprobe holes were performed to collect subsurface soil samples. Performed work for the City of Columbus Street Design Department as part of the street-widening program.

Phase II Environmental Site Investigation and Remediation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and performed QA/QC for a site investigation and remediation of a former dry-ice manufacturing facility along McKinley Avenue in Columbus, Ohio. The City of Columbus Street Design Department was widening McKinley Avenue. Used Geoprobe technology to collect subsurface soil samples for purposes of determining the presence of contamination within the construction limits. A former dry ice manufacturing facility, located along the revised road centerline, required remediation of an existing concrete vault prior to demolition to allow construction to proceed. Cleaned the vault by power washing and vacuuming with off-site disposal of the resulting sludge and rinse waters.

Compliance

Spill Prevention, Control, and Countermeasure Plan, The Ohio State University, Columbus, Ohio
Performed the "five-year" review and evaluation of existing Spill Prevention, Control, and Countermeasure (SPCC) Plans for re-certification in accordance with the requirements of 40 CFR 112 as amended in December 2006 for The Ohio State University (OSU) in Columbus, Ohio. Reviewed, revised, and re-certified the Master SPCC Plan for the OSU main campus. Reviewed facility specific SPCC Plans, performed facility inspections, and revised the SPCC Plans using the "poster-format" with cross-references and supporting documents for four facilities within the OSU main campus: Center for Automotive Research, McCracken Power Plant, Transportation and Parking Services, and the Scarlet and Gray Golf Course. Also reviewed the SPCC Plan for the Wooster Campus of OSU in Wooster, Ohio, performed a site inspection, and prepared and certified the "poster-format" with cross-references and supporting documents.

Integrated Contingency Plan (ICP), The Ohio State University, Don Scott Field, Columbus, Ohio
Prepared an ICP for The Ohio State University Airport, Don Scott Field. Combined the existing Storm Water Pollution Prevention Plan (SWP3) and the existing SPCC Plan into one document that also included a new emergency response plan for the airport. The ICP addressed the onsite Avgas and Jet A aviation fuel storage facility, mobile aircraft refuelers, and two maintenance facilities resident on the airport property. Prepared the ICP in accordance with the National Interagency Incident Management System (NIIMS) Incident Command System (ICS) that is a nationally recognized system that provides a commonly understood framework that allows for effective interaction among response personnel, thus facilitating its ease of use during an emergency situation.

Spill Prevention, Control, and Countermeasure Plan, Denison Hydraulics, Marysville, Ohio
Prepared SPCC Plan to bring the Denison Hydraulics facility in compliance with the requirements of 40 CFR 112 for a specialty hydraulic equipment manufacturing facility in Marysville, Ohio. Prepared the SPCC Plan text, drawings, and appendices based on review of historic records, conversations with facility personnel, and site inspections. Served as the "Engineer-of-Record" for certification of the SPCC Plan.

Spill Prevention, Control, and Countermeasure Plan, Koneta Rubber, Wapakoneta, Ohio
Prepared SPCC Plans to bring two facilities in compliance with the requirements of 40 CFR 112 for a specialty rubber manufacturing facility in Wapakoneta, Ohio. Prepared the SPCC Plan text, drawings, and appendices based on review of historic records, conversations with facility personnel, and site inspections. Served as the "Engineer-of-Record" for certification of the SPCC Plans.

Notice of Intent and Storm Water Pollution Prevention Plan, United Precast, Mount Vernon, Ohio
Prepared and submitted the Notice of Intent (NOI) for a concrete manufacturing facility in central Ohio to provide coverage of the facility under the General Permit Authorization to discharge Storm Water Associated with Industrial Activity (General Permit No. OHR000003) Under the National Pollutant Discharge Elimination System (NPDES) as administered by the Ohio EPA. As a condition of the General Permit, prepared the SWP3 for the facility including a site walk over, material inventory, preliminary development of "Best Management Practices (BMPs)", certification of non-storm water discharges, and recommendations for implementing BMPs to minimize contact with storm water.

Spill Prevention, Control, and Countermeasure Plan, Campbell Soup Company, Napoleon, Ohio
Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a food manufacturing facility in Napoleon, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Spill Prevention, Control, and Countermeasure Plan, Lumi-Lite Candle Factory, Norwich, Ohio
Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a candle manufacturing facility in Norwich, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Spill Prevention, Control, and Countermeasure Plan, Confidential Client, Bucyrus, Ohio
Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a rubber and plastic hose manufacturing facility in Bucyrus, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Conditional No Exposure Exclusion for Industrial Activity, Delphi Automotive Systems, Warren, Ohio
Performed site inspections and developed inspection forms for five automotive parts manufacturing facilities to determine compliance with the NPDES, Storm Water Phase II Final Rule – Conditional No Exposure Exclusion for Industrial Activity as administered by the Ohio EPA. Used the initial facility inspections to develop forms that the client could use to perform subsequent annual compliance inspections. Provided a summary of issues to be addressed prior to submitting Conditional No Exposure Exclusion requests to the Ohio EPA.

Spill Prevention, Control, and Countermeasures Plan Re-Certification, Delphi Automotive Systems, Warren, Ohio
Perform review, prepared revisions, and re-certified SPCC Plans in accordance with the requirements of 40 CFR 112 for a major automotive parts manufacturer in Northeast Ohio. Performed site inspections for two facilities, updated the SPCC Plans, and signed as the "Engineer of Record".

Storm Water Pollution Prevention Plans, Delphi Automotive Systems, Warren, Ohio
Performed site inspections, review of existing plans, and prepared required revisions of SWP3s for a major automotive parts manufacturer in Northeast Ohio. Reviewed and revised the SWP3s in accordance with the facilities General Permit Authorization to Discharge Storm Water Associated with Industrial Activity under the NPDES.

Aboveground Tank Compatibility Certification, Yenkin-Majestic Paint Corporation, Columbus, Ohio
Certified the compatibility of an aboveground storage tank (AST) for use in storing waste solvents in accordance with Ohio Administrative Code (OAC) Rules and Regulations, Chapter 3745-66-92. Certification included inspection of the AST including overflow and automatic shut-off controls, preparation of the certification report and submittal to the Ohio EPA.

Storm Water/Surface Water Management

Design and Implementation of a "Class A" Trout Stream, Cerro Metal Products, Company, Bellefonte, Pennsylvania
Managed the design and implementation of a "Class A" trout stream in central Pennsylvania. Lead, copper, zinc, and PCBs contaminated the stream banks and sediment. Modeled 20+ square mile drainage area utilizing SEDCAD 4 software for the design of riprap/gabion baskets to stabilize the stream banks, following excavation and off-site removal of the contaminated soils and sediments. Prepared contract documents, technical specifications, and construction drawings. Completed the project on a "fast track" schedule due to strict regulatory deadlines.

Evaluation of Sedimentation Basin at a Sanitary Landfill, Private Landfill in Minnesota

Prepared the evaluation of an existing sedimentation basin at a sanitary landfill utilizing SEDCAD+ computer software. Modeled the watershed for the basin and added 1000 GPM of inflow from a groundwater recovery/treatment system. Treated the basin as an infiltration structure, which saved the client \$200,000 by not having to construct a second basin to handle water from the groundwater recovery/treatment system.

Abandoned Mine Lands and Mining

Acid Mine Drainage, Investigation and Remedial Design, Meigs County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the investigation and remedial design for acid mine drainage (AMD) from old underground mine openings in Meigs County, Ohio. Basements of houses located within 30- to 50-feet of the toe of the slope were flooding during rainfall events due to saturation of the soils caused by AMD from the mine openings. Resealed the openings and employed an underdrain system to drain the back yards of the houses and former mine openings. Designed the underdrain system and constructed taking into account the proximity of the toe of the slope and the need to protect the integrity of the slope by preventing slope failure. Technical specifications and drawings were prepared in accordance with the Ohio Department of Natural Resources (ODNR) protocols.

Reclamation and Surface Erosion Remediation, Gallia County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the reclamation and surface erosion remediation at an abandoned mine land site in Gallia County, Ohio. The reclamation design involved the regrading of the site, including highwall and slope reduction to minimize future potential surface erosion problems. Developed technical specifications, prepared in accordance with the ODNR protocols, grading plans, and surface water control plans, in a format suitable for contractors to perform the reclamation work.

Mine Reclamation and Surface Erosion Remediation, Gallia County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the reclamation and surface erosion remediation at an abandoned mine land site in Gallia County, Ohio. The reclamation design involved the regrading of the site, including highwall and slope reduction to minimize future potential surface erosion problems. The grading plans were required to incorporate access to an active natural gas well located on the site. Developed topsoil borrow area plans (from adjacent undisturbed properties), including sampling plans, volume estimates, grading plans, and surface water control plans. Developed technical specifications, prepared in accordance with the ODNR protocols, grading plans, and surface water control plans, in a format suitable for contractors to perform the reclamation work.

Reclamation Design for Control of Acid Mine Drainage, Peabody Coal Company, St. Louis, Missouri

Prepared the reclamation design for control of AMD from an old abandoned auger mining pit in Missouri. AMD from the auger pit was flowing into the Clairton River and causing discoloration problems. The reclamation design included the construction of a sedimentation basin at the mouth of the valley leading from the old auger pit and prior to entering the river. Sedimentation basin outfall was a corrugated pipe down the slope to the river to minimize potential surface erosion attributed to the outfall.

Mine Plans and Reclamation Plans for Two Large Coal Mines, Powder River Coal Company, Bill, Wyoming

Prepared mine plans and reclamation plans for two large coal mines in Wyoming (6,000,000 tons/year and 8,000,000 tons/year). Plans included sequencing of strip pits, overburden handling, backfill, and grading plans. Storm water management included design of sedimentation basins, diversion ditches, containment berms, and ditches.

Permit Revisions to an Existing Mine Plan, Powder River Coal Company, Bill, Wyoming

Managed the preparation of permit revisions to an existing mine plan to include the construction of a concentric loop track, silo, slot storage, and conveyor system for increased coal handling, storage, and loading capacity. Following approval of the permit revision, managed the preparation of technical specifications and

construction drawings for the required facility upgrades, the bidding and contractor procurement activities, and construction oversight activities throughout the construction of the project.

Underdrain System to Control Groundwater Flow at a Mine in the Rocky Mountains, Peabody Coal Company, Denver, Colorado

Designed an underdrain system to control groundwater flow beneath backfilled overburden at a mine in the Rocky Mountains. The underdrain allowed mining of the coal seam from the bottom of the mountain to the top, instead of contour mining, which increased the amount of recoverable coal. Used the slope stability program REAME developed by the University of Kentucky to aid in the design and backfill placement of underdrain materials and overburden to create a stable backfill as part of the reclamation.

Major Channel Relocation/Remediation, Powder River Coal Company, Bill, Wyoming

Participated in the design, material handling, stockpiling, and backfilling of a major channel relocation/remediation. During the early stages of opening a new mine, relocated a major creek to allow for maximum recovery of the coal seam. As the creek was being stripped, selectively handled and stockpiled the material comprising the creek, i.e., sands, gravels, etc., for reconstruction during the reclamation process for this area. Following coal removal, reconstructed the stream in its former location, with each lithologic unit replaced to recreate the stream before mining events took place.

Publications

"Construction and Demolition Debris Rules in Ohio," Concrete Connection, Ohio Ready Mixed Concrete Association (ORMCA), November 1998

"Simplifying Environmental Planning Requirements," FOUNDRY Management & Technology, pp. 20-23, April 1999.

Elena Goodhall, P.E.

Experience Summary

Elena Goodhall is an Associate and Project Manager with 16 years of experience in landfill environmental management and environmental remediation. For the five years prior to coming to Brown and Caldwell, she was the Ohio Environmental Manager and Regional Environmental Manager for Republic Services Inc. (Republic, formerly Allied Waste Services, Inc.). Ms. Goodhall began with Allied Waste as an Environmental Manager in Ohio and has successfully developed an excellent relationship with all levels of Ohio EPA personnel. As Regional Manager, Ms. Goodhall addressed compliance, engineering, and construction issues for the region and developed and implemented leachate tracking logs; soil tracking, soil usage and tonnage policy; and aerial calculation review procedures for the region. Ms. Goodhall has successfully handled environmental permitting, including solid waste and air permits-to-install and zoning and wetland permitting. She also obtained the first and second Director's Exemptions granted in Ohio for siting landfills over 100-gpm aquifers. Ms. Goodhall has served in an engineering and management role on landfill construction and development projects, including waste relocation, cell construction and expansion, landfill gas and leachate management systems, and hazardous waste landfill management. Ms. Goodhall also served as lead Compliance and Quality Assurance manager and lead Liner Manager on several construction and development projects. Her landfill management experience includes groundwater monitoring programs, stormwater management programs, and the development of emergency action plans. Prior to her solid waste work for Republic, Ms. Goodhall had 10 years of experience investigating hazardous waste and brownfield sites, developing corrective actions, and overseeing the implementation of corrective measures at numerous sites in California, Michigan, and Ohio.

Assignment

Project Manager

Education

M.S., Hazardous Waste Management, Wayne State University, 2003

B.S. Civil Engineering, University of Michigan, 1994

Registration

Professional Engineer, Michigan

Certifications

40-hour HAZWOPER with current 8-hour Refresher

First Aid and CPR Training

Nuclear Densometer Gauge Certification

Experience

16 years

Joined Firm

2009

Relevant Expertise

- *Solid Waste Facility Design and Construction*
- *Hazardous Waste Management*
- *Brownfield Redevelopment*

Relevant Project Experience

Countywide Recycling & Disposal Facility Isolation Break, Gas System, and Leachate Construction Quality Assurance (CQA) Services, Republic Services, Inc., East Sparta, Ohio

Project Manager. Managed the oversight and documentation for this United States Environmental Protection Agency (USEPA) required project to create complete separation between the 88-acre remediation area and the remainder of the cells at the Facility. This project was necessary due to a chemical reaction that is believed to be attributed to aluminum dross waste that the facility historically received. The project involved the installation of 52 landfill gas wells and associated headers and laterals, relocation of the site flares, installation of 24 acres of high-density polyethylene (HDPE) geomembrane, construction of 2 pump stations and complete isolation of the remediation leachate system. To document this work 4 separate certification reports were required due to various regulatory drivers. The facility's Division Manager commended Ms. Goodhall on how she took care of the client at this facility and dealt with the ever-changing staffing needs during the course of this 9-month long project

Imperial Landfill, LFG, Cell Construction, CQA Services, Republic Services, Inc., Republic Services, Findlay Township, Allegheny County, Pennsylvania

Project Manager and Construction Manager. Managed \$8 million project to address odors resulting from hydrogen sulfide generation at a landfill located adjacent to an elementary school. Major project elements included installation of 42 acres of 40 mil HDPE green geomembrane and 16 oz geotextile, construction of two new sedimentation ponds and expansion of one by 11,780 feet, landfill gas well and horizontal collector installation, and new cell construction. The project involved assistance in developing the design,

facilitating the permitting process, overseeing the construction and providing the construction quality assurance services for this time critical and substantial corrective action.

Lorain County Landfill Gas Construction Drawings and CQA Services, Republic Services, Inc., Oberlin, Ohio

Project Manager for the development of landfill gas construction drawings for this facility and the related construction quality assurance for the project. This project involved the installation of additional gas wells, header and lateral piping, isolation valves and the second enclosed flare for the facility.

County Environmental of Wyandot Landfill, Gas Construction Drawings and CQA Services, Republic Services, Inc., Carey, Ohio

Project Manager for the development of landfill gas construction drawings for this facility and the related construction quality assurance for the project. This project involved the installation of additional gas wells, header and lateral piping, air and force main piping and the 2nd utility flare for the facility.

Cherokee Run Landfill, Gas Construction Drawings and CQA Services, Republic Services, Inc., Bellefontaine, Ohio

Project Manager for the development of landfill gas construction drawings for this facility and the related construction quality assurance for the project. This project involved the installation of additional gas wells and additional header and lateral piping. In addition, BC provided oversight of repair work to the site's utility flare condensate sump and associated piping.

Conestoga Landfill, Allied Waste, Inc., Pennsylvania

Environmental Manager and Construction Manager. Managed a 22-acre time-critical cell construction project, initiated in 2008. Numerous challenges were encountered and successfully overcome during construction in early spring, and the cell was certified in time to prevent waste diversion to another facility. Ground water seeps encountered in the cell floor required redesign in the field. Responsible for pursuing and obtaining permit modifications, saving the facility approximately \$4,000,000. After the merger between Allied Waste and Republic Services, she continued to provide construction management services to the facility on their 2009 17-acre time critical cell construction involving 500,000 CY of structural fill placement.

Gas System Assessments, Republic Services, Inc., Nationwide

Project Manager and Assessor. Conducted landfill gas system assessments at 14 Republic landfills to determine compliance Republic's national Standard Operating Procedures for Landfill Gas Operations and Maintenance. These assessments involve a thorough review of landfill gas monitoring data, reporting, and maintenance followed by recommendations to the facility on how to improve the implementation of the SOP and the operations of the gas system.

Allied Waste Services, Inc., Erie, Michigan

As a Regional Environmental Manager for Allied Waste Services, responsible for the regional management of landfill capital, closure and post-closure budgets, landfill development and construction, environmental compliance, and facility expansions for the 27 active landfills, 36 closed landfills, two closed hazardous waste landfills, 44 transfer stations/recycling stations and 62 hauling companies located in the Northeast and Eastern regions of the United States. Also developed and implemented regional initiatives to conduct training sessions for environmental managers, operations personnel, and consultants.

In this role, accomplished several key activities including:

- Developing and implementing leachate tracking log spreadsheets for 35 active landfills,
- Drafting and enforcing regional soil tracking, soil usage, and non-deplete tonnage policies,
- Developing, implementing and reviewing aerial calculation review spreadsheets for 35 landfills.

Lorain II and Lorain I Landfills, Allied Waste Services, Inc., Oberlin, Ohio

Engineer. Completed a 20-acre closure project and substantial gas system improvements to address odor complaints at the Lorain County II Landfill. At Lorain I, completed engineering oversight on a cap improvement project to minimize infiltration and leachate generation from this landfill. Also, completed installation of

combination gas wells and publically owned treatment works (POTW) projects involving leachate collection and disposal systems.

County Environmental of Wyandot Landfill, Inc., Allied Waste, Inc., Carey, Ohio

Engineer. Managed the relocation of approximately 1.4 million cubic yards of waste from an unlined portion of the facility to the lined portion of the facility. This waste relocation was successful in reducing the groundwater impacts identified at the facility.

Celina Sanitary Landfill, Allied Waste, Inc., Celina, Ohio

Engineer. Efforts resulted in successful expansion of the Celina Sanitary Landfill, adding nine years of site life to the facility. This work included obtaining a host agreement, a zoning permit, solid waste and air permits-to-install, and the first Director's exemption for siting a landfill over a 100-gpm aquifer granted in Ohio.

Cherokee Run Landfill, Allied Waste, Inc., Bellefontaine, Ohio

Engineer. Responsible for the successful expansion of Cherokee Run Landfill, adding 10 years of site life to the facility. This work included obtaining solid waste and air permits-to-install, and the second Director's exemption for siting a landfill over a 100-gpm aquifer granted in Ohio.

Noble Road Landfill, Allied Waste, Inc., Shiloh, Ohio

Engineer. Responsible for the continued pursuit of a vertical expansion, including design completion, hydrogeologic investigations, and wetland and air permitting. Permit to install (PTI) approval is expected in March 2009. Managed the permitting, design, construction, and startup of the gas system at Noble Road Landfill, which recently triggered regulatory requirements for an active gas system.

Celina and Cherokee Landfills, Allied Waste, Inc., Ohio

Engineer. Responsible for the continued pursuit of two lateral expansions, including design completion, hydrogeologic investigations, and wetland, air, and zoning permitting.

Landfill Construction, Allied Waste, Inc.

Engineer. Managed landfill construction projects, including eight cells, three caps, ten landfill gas systems, two flare installations, and three leachate system improvements. Three of these were time-critical off-season cell construction projects. As Ohio District Engineer, responsible for the permitting, construction, and compliance for six active landfills, three closed landfills, seven transfer stations, and two recycling facilities. In this role, she completed landfill expansions and construction projects, and delivered cost savings and improvements to several landfill sites.

Type III Landfill Cell Redesign, Construction, and Interim Cover Staking Plan, CEMEX, Inc., Charlevoix, Michigan

Technical Lead and Certifying Engineer. Served as Technical Lead for this 8-acre cell construction for a cement kiln dust landfill that is located just north of CEMEX's limestone quarry on Lake Michigan. Responsible for a fast-track redesign of the Phase II cell due required by verification surveying revealing that the quarry wall had been mined 150 feet into the Phase II cell area. The redesign was accomplished while the contractor continued onsite work, with no resulting downtime. Also served as the Lead Liner during installation of the geosynthetic clay liner and 60-mil HDPE geomembrane.

Fort Gratiot Type II Landfill Remedial Design, Michigan Department of Environmental Quality, Port Huron, Michigan

Technical Lead, Engineer of Record. Served as Project Manager for remedial activities at this 18-acre Part 201 Landfill. These activities included installation of a passive landfill gas venting control system, geosynthetic cover system, storm water controls, and leachate control system. Also served as Lead Liner during installation of the 40-mil linear low-density polyethylene (LLDPE) geomembrane and geocomposite layer.

Gratiot County Landfill Cap Repair and Emergency Methane Corrective Action, Michigan Department of Environmental Quality, Gratiot County, Michigan

Project Manager for remedial activities at this 42-acre landfill containing municipal and industrial waste including polybrominated biphenyl wastes. Identified methane concentrations in the explosive range at the property boundaries, developed design of an emergency corrective action, and coordinated monitoring of the

corrective action. Also responsible for the coordination of quarterly groundwater sampling associated with the operating groundwater extraction treatment system, and supervising cap repairs that were necessary due to differential settlement.

Tobico Marsh State Game Area Landfill Characterization Survey and Decommissioning Plan, Michigan Department of Natural Resources, Kawkawlin Township, Michigan

Responsible for the completion of the radiological characterization survey and decommissioning plan in pursuit of the termination of the client's Nuclear Regulatory Commission license at a three-acre low-level radioactive waste landfill. Served as Field Operations Leader during the six-month site characterization field work, that was completed in Level B PPE with radiological controls.

Citizens Disposal Landfill Peat and Marl Removal, Cell Excavation, and Berm Construction, Allied Waste, Inc., Grand Blanc, Michigan

Project Manager and Certifying Engineer for the removal of a non-regulated wetland within the footprint of the landfill, as well as cell excavation and berm construction.

Former Eaton Transmission Facility Brownfield Redevelopment, Michigan Department of Environmental Quality, Kalamazoo, Michigan

Technical Lead. This demolition project involved a 645,000-sq. ft. former transmission facility. Served as the Field Operations Leader during the pre-demolition sampling event, which involved coordinating activities for two sampling crews and two Geoprobe® rigs across the 50-acre site. Also coordinated the preparation of the demolition bid specifications and assisted the client during the procurement process for the demolition Trade Contractor. Acted as a liaison between the client and the contractor, monitoring compliance with contract specifications, reviewing and negotiating change orders, and reviewing and approving payment requests and associated documentation.

Welcome Center for Ambassador Properties Brownfield Redevelopment, Michigan Department of Environmental Quality, Detroit, Michigan

Technical Lead. This Brownfield project encompassed nearly 200 residential and commercial lots that were proposed for development as a Michigan Department of Transportation (MDOT) Welcome Center. Developed the Focused Feasibility Study for the parcels identified as Michigan Part 201 facilities, coordinated additional sampling at the site to determine the boundaries of the area to be excavated, and prepared of bid specifications for the contaminated soil removal. Provided construction oversight services during the soil removal.

Toledo Tie Treatment Site, Kerr-McGee Corporation, Toledo, Ohio

Project Engineer. Supervised construction quality control and documentation of all field activities for a \$7 million Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) directed, time-critical removal action. Negotiated with regulators during the implementation of the time critical removal action, and designed appropriate engineering controls to mitigate remaining contamination.

Miscellaneous Solid Waste Landfills in Michigan and Ohio

Design Engineer for several landfill sites throughout Michigan and Ohio. Responsibilities included:

- Performing landfill construction quality assurance during geosynthetic liner installation,
- Designing landfill staking plans and landfill stormwater improvement projects,
- Preparing landfill construction documentation reports, and
- Performing engineering calculations required for landfill permit applications.

U.S. Army Forces Command Installation Restoration

Program Support Manager. Developed and analyzed Forces Command's Cost to Complete Budget totaling \$550 million. Developed 26 Installation Action Plans to address 5,000 former hazardous waste disposal sites. Provided technical and program support to 28 Installation Restoration Project Managers.

Fort Irwin Installation Restoration, California

Program Manager. Investigated former hazardous waste disposal sites at Fort Irwin, a 1,000 square mile installation. Managed over \$14.5 million of Defense Environmental Restoration Program funds. Negotiated with various California regulatory agencies on behalf of Fort Irwin and the U.S. Army. Developed and implemented the Installation Action Plan. Implemented the Community Relations Plan for the Installation Restoration Program. Coordinated the field work for site inspections, remedial investigations, and remedial actions.

Bridge Scour Analyses, Michigan Department of Transportation, Various Michigan Sites

Performed 160 Level I and 37 Level II Bridge Scour Analyses. These included developing cross sections of the river upstream and downstream of the bridge, calculating the depth of scour, comparing to bridge foundation depth, and determining if corrective actions are required.

Vandevenne Drain Improvements, City of New Baltimore, Michigan

Modeled the existing conditions using HEC-2 program and designed improvements to the drain cross section to facilitate additional development in the area.

Rouge River Valley Combined Sewer Overflow (CSO) Study, Southeast Michigan

Evaluated proposed surface water monitoring locations, installed sampling equipment, and conducted sampling events during rain events. Also conducted CSO studies for Michigan municipalities.

Janet Todia

Experience Summary

Janet Todia recently joined Brown and Caldwell. Ms. Todia brings 12 years of experience in landfill operation and maintenance.

Assignment

Field CQA Inspector

Experience

12 years

Joined Firm

2010

Relevant Expertise

- Solid Waste Management
- Landfill Gas Systems
- Air Compliance

Landfill Operation and Maintenance Experience

Cuyahoga Regional Sanitary Landfill, Solon, Ohio

Project Manager for landfill gas services to supply a 3.8 megawatt power plant on site and a 72 mmbtu boiler system to Nestle USA. Managed coordination of field operations with pipeline and compression skid construction activities for the start up of the Nestle Gas to Energy Project.

Epperson Waste Disposal, Republic Services, Williamstown, Kentucky

Supervisor for well field technicians. Aided in the installation of pneumatic pumps for well dewatering purposes. Responsible for environmental compliance reporting.

Hazel Road Landfill, Akron, Ohio

Project Manager for landfill gas field services. Assisted field technicians in trouble shooting potential landfill gas migration issues and pneumatic pump installation.

Hoffman Road Landfill, City of Toledo, Toledo, Ohio

Project Manager for landfill gas field services. Managed environmental compliance and reporting, assisted site technicians in small-scale construction repairs, installation of pneumatic pumps, potential site migration issues, and routine well field tuning. Responsible for routine and non-routine construction budgets.

Lake County RDF, Waste Management, Chesterland, Ohio

Project Manager for landfill gas field services. Managed small-scale construction repairs, submitted proposals for small-scale construction projects, and coordinated well field compliance with Environmental Specialists, Inc.

Oakland Heights Development, Allied Waste Industries, Inc., Auburn Hills, Michigan

Project Manager for landfill gas project that provides methane to the GM Lake Orion boiler system. Managed budget and non-routine activities. Worked with Air Quality Specialists, Inc. to maintain environmental compliance.

Pine Tree Acres Landfill, Inc., Waste Management, Lenox Township, Michigan

Project Manager for well field technicians and aided in routine well field tuning to increase flow to the gas energy plant on site. Worked with Air Quality Specialists, Inc. to maintain environmental compliance.

Statewide Landfill, Waste Management, Canton, Ohio

Project Manager for well field technicians and aided in routine well field tuning, installation of pneumatic pumps, small scale construction repairs, and troubleshooting potential landfill gas migration issues.

Valley View Landfill, Republic Services, Sulpher, Kentucky

Supervisor for well field technicians. Managed routine and non-routine budgets. Responsible for environmental compliance reporting.

Landfill Air Compliance Reporting Experience

Deercroft Recycling and Disposal Facility, Waste Management, Michigan City, Indiana

Prepared semiannual Title V reports, semiannual new source performance standards (NSPS) reports, and semiannual startup, shutdown, and malfunction (SSM) reports. Submitted variance requests/alternative timeline requests, Title V annual compliance certification, and well decommissioning requests and Deviation Occurrence Reports.

Douglas County Recycling and Disposal Facility, Waste Management, Bennington, Nebraska

Prepared semiannual Title V reports, semiannual NSPS reports, semiannual SSM reports, and Title V annual compliance certifications.

ELDA Recycling and Disposal Facility, Waste Management, Cincinnati, Ohio

Prepared quarterly/semiannual Title V reports, semiannual EG reports, and semiannual SSM reports. Submitted variance requests/alternative timeline requests and well decommissioning requests.

Epperson Waste Disposal, Republic Services, Williamstown, Kentucky

Prepared semiannual NSPS reports and semiannual SSM reports. Submitted alternative variance requests/alternative timeline requests and well decommissioning requests.

Greene Valley Recycling and Disposal Facility, Waste Management, Naperville, Illinois

Prepared semiannual EG reports, semiannual SSM reports, semiannual Clean Air Act Permit Program (CAAPP) reports, and annual CAAPP compliance certifications. Submitted CAAPP Form 405s on an as need basis.

Hardy Road Sanitary Landfill, Waste Management, Akron, Ohio

Prepared semiannual NSPS reports, semiannual SSM reports, quarterly/semiannual Title V reports, annual Title V compliance certifications, and annual solid waste report. Maintained operating records.

Hoffman Road Landfill, City of Toledo, Toledo, Ohio

Prepared semiannual NSPS reports, semiannual SSM reports, and quarterly/semiannual Title V reports.

Lake County RDF, Waste Management, Chesterland, Ohio

Prepared semiannual EG reports, semiannual SSM reports, quarterly/semiannual Title V reports, annual Title V compliance certifications, and annual solid waste report.

Lake Landfill, Waste Management, Northbrook, Illinois

Prepared semiannual EG reports, semiannual SSM reports, semiannual CAAPP reports, and annual CAAPP compliance certifications. Submitted CAAPP Form 405s on an as need basis.

Metro Park East Landfill, Waste Management, Mitchellville, Iowa

Prepared semiannual NSPS reports, semiannual SSM reports, semiannual Title V reports, and annual Title V compliance certifications.

Valley View Landfill, Republic Services, Sulpher, Kentucky

Prepared semiannual NSPS reports, semiannual SSM reports, semiannual Title V reports, and annual compliance certifications. Submitted variance requests/alternative timeline requests, and well decommissioning requests.

Wheeler Recycling and Disposal Facility, Waste Management, Wheeler, Indiana

Prepared semiannual EG reports, semiannual SSM reports, quarterly/semiannual Part 70 compliance certifications, and annual Part 70 compliance certifications. Submitted variance requests/alternative timeline requests, well decommissioning requests, and Deviation Occurrence Reports.

Woodland Recycling and Disposal Facility, Waste Management, South Elgin, Illinois

Prepared semiannual EG reports, semiannual SSM reports, semiannual Title V reports, and annual compliance certifications. Submitted variance requests/alternative timeline requests, and well decommissioning requests.

Bryant Kiedrowski

Experience Summary

Mr. Kiedrowski has eight years of civil and environmental engineering experience. His experience includes developing municipal local limits, National Pollutant Discharge Elimination System (NPDES) permitting, evaluating landfill leachate generation and handling practices, landfill gas system design, and landfill gas construction quality assurance monitoring.

Assignment

Field CQA Inspector

Education

M.S. Civil Engineering, Case Western Reserve University, 2003

B.S. Civil Engineering, Case Western Reserve University, 2003

Registration

Professional Engineer, Ohio (2007)

Experience

8 years

Joined Firm 2008

Training

- HAZWOPER Eight-hour Refresher
- Bloodborne Pathogens Exposure Control
- First Aid
- Hazard Communications
- 40-Hour Hazardous Waste Operations Safety Training

Relevant Expertise

- Wastewater Collection Systems
- Industrial Water Quality
- Landfill Gas Design

Albion Local Industrial User Limits, City of Albion, Michigan

Engineer. Reviewed and developed new local industrial user limits for the City. Worked with the City's wastewater treatment plant (WWTP) superintendent in developing the local industrial user limits with an emphasis on new industries, problematic industries, and public concerns.

American Landfill Underdrain Treatment System, Waste Management, Inc., Waynesburg, Ohio

Project Engineer. Worked with Ohio Environmental Protection Agency (Ohio EPA) throughout the NPDES permitting process to meet both the client's needs and the agency's needs. Performed field tests and analyses to determine ammonia content and iron settling capabilities of underdrain water. Assisted in design layout and selection of treatment system. Designed pipe runs leading from the underdrain water pumps to the treatment system and from the treatment system to the receiving stream.

Bobmeyer Landfill POTW Connection, Republic Services, Inc., Fairfield, Ohio

Project Engineer. Worked with the City of Fairfield and the City of Hamilton to meet both the client's needs and each municipality's needs. Designed discharge pipe connecting landfill's leachate tanks to the public sewer system. Experience working with Norfolk Southern Railway and abiding by their specifications for carrier pipelines crossing their right of way. Worked along with contractors to adapt design to unforeseen circumstances during construction.

Cherokee Run Landfill Gas System Design, Republic Services, Inc., Bellefontaine, Ohio

Project Engineer. Designed five-year gas collection and control system phasing plan for future expansion plans and budgetary purposes. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity. Provided assistance to field staff in moving locations of gas wells and verifying drilling depth as conditions require.

CLD Landfill Gas System Design, Republic Services, Inc., Salem, Ohio
Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

CLD Landfill Gas Collection and Control System Construction Quality Assurance Monitor, Republic Services, Inc., Salem, Ohio

Project Engineer. Observed the drilling and installation of landfill gas monitoring wells at construction and demolition landfill. Provided written and photographic documentation of installation methods, as well as equipment and materials onsite. Prepared daily work summary reports for client.

Coca-Cola Columbus Syrup Plant Wastewater Management Plan Update, Coca-Cola North America, Columbus, Ohio

Project Engineer. Collected information regarding the facility's production, clean-in-place (CIP) processes, products, and membrane bioreactor (MBR) treatment system influent. Collected CIP Wastewater and pure syrup product samples and analyzed for chemical oxidation demand (COD) and Brix. Estimated COD load in wastewater to the MBR system from each process. Made recommendations to stabilize and decrease COD Loads to MBR system.

Coffin Butte Landfill Leachate Generation Evaluation, Republic Services, Inc., Corvallis, Oregon

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 30-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and made recommendation on future leachate handling practices.

Conestoga Landfill Leachate Generation Evaluation, Republic Services, Inc., Morgantown, Pennsylvania

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 20-year period while incorporating landfill filling and cell capping plans. Used projected peak leachate generation volumes to meet state required leachate storage capacity at the landfill.

Holland Barrier Wall Design, Pfizer, Inc., Holland, Michigan

Project Engineer. Assisted in the design and the development of the alignment of the hydraulic barrier wall. Designed the fill of a sedimentation pond and of an inlet along the Macatawa River. Worked with Michigan Department of Environmental Quality (MDEQ) and United States Army Corps of Engineers (USACE) to obtain the necessary permits for the fill activities within the 100-year floodplain. Performed quantity takeoffs for the construction bid package.

Honeywell South Bend Water Balance and Sewer Mapping, Honeywell International, Inc., South Bend, Indiana

Engineer. Collected information regarding water use and created a water balance to satisfy a portion of the facility's energy audit. Determined cross connections in the facility. Inspected the facility's backflow preventers and determined whether each protected the potable water system from cross contamination. Made recommendations concerning the location and installation of backflow preventers.

Heath Industrial Pretreatment Program Assistance, City of Heath, Ohio

Project Engineer. Assisted in the direction of the Industrial Pretreatment Program for City of Heath. Performed industrial user inspections, created pretreatment program reports for Ohio EPA, evaluated the City's methods of fats, oils, and grease (FOG) removal and provided recommendation, reviewed and developed new local industrial user limits, and reviewed and updated existing local user permits.

Lake Area Landfill Leachate Generation Evaluation, Republic Services, Inc., Sarona, Wisconsin

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 10-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and make recommendation on future leachate handling practices.

Local Industrial User Limits, City of Columbus, Ohio

Project Engineer. Reviewed and developed new local industrial user limits for the City. Collaborated with Ohio EPA during the development process. Created a report fully detailing calculations and assumptions used and created fully annotated spreadsheets for the City's future development of local industrial user limits. Assisted the City in redeveloping their current industrial user permits.

Lorain II Landfill Gas System Design, Republic Services, Inc., Oberlin, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity. Provided assistance to field staff in moving locations of gas wells and verifying drilling depth as conditions require.

NPDES Permitting for Various Municipal and Industrial Clients

Project Engineer. Developed and submitted NPDES permit and permit renewal applications for various municipal and industrial clients in the Midwest, including Republic Services Inc., The Andersons Inc., and City of Heath, Ohio. Worked with state regulators to meet both the clients' and agencies' needs. Developed water balances and flow schematics. Estimated pollutant concentrations in facilities' surface water discharge.

Newark Local Industrial User Limits, City of Newark, Ohio

Engineer. Reviewed and developed new local industrial user limits for the City. Collaborated with Ohio EPA during the development process.

Noble Road Landfill Gas System Design, Republic Services, Inc., Shiloh, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

Oak Grove Sanitary Landfill Leachate Generation Evaluation, Republic Services, Inc., Winder, Georgia

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 10-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and made recommendation on future leachate handling practices.

Pine Grove Landfill Leachate Treatment System, Republic Services, Inc., Amanda, Ohio

Project Engineer. Assisted in the design of a vertical wetland treatment system for the removal of ammonia from the landfill leachate stream. Evaluated multiple treatment technologies. Produced preliminary design drawings of the vertical wetland treatment system, piping and instrumentation diagrams and piping layouts for leachate dosing of the filter.

Sunshine Canyon Landfill Leachate Generation Evaluation, Republic Services, Inc., Sylmar, California

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected the peak leachate generation volume for the site based on landfill filling and cell capping plans. Evaluated existing leachate treatment, conveyance, and storage capacity on site and recommended facility upgrades to better facilitate leachate handling capabilities.

Sycamore Landfill Leachate Treatment System, Republic Services, Inc., Hurricane, West Virginia

Project Engineer. Assisted in the design of a vertical wetland treatment system for the removal of ammonia from the landfill leachate stream. Evaluated multiple treatment technologies. Produced preliminary design drawings of the vertical wetland treatment system, piping and instrumentation diagrams, piping layouts for leachate dosing of the filter, and grading drawings for construction of the filter into an existing hillside.

Wyandot Landfill Gas System Design, Republic Services, Inc., Carey, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

Wyandot Landfill Gas Collection and Control System Construction Quality Assurance Monitor, Republic Services, Inc., Carey, Ohio

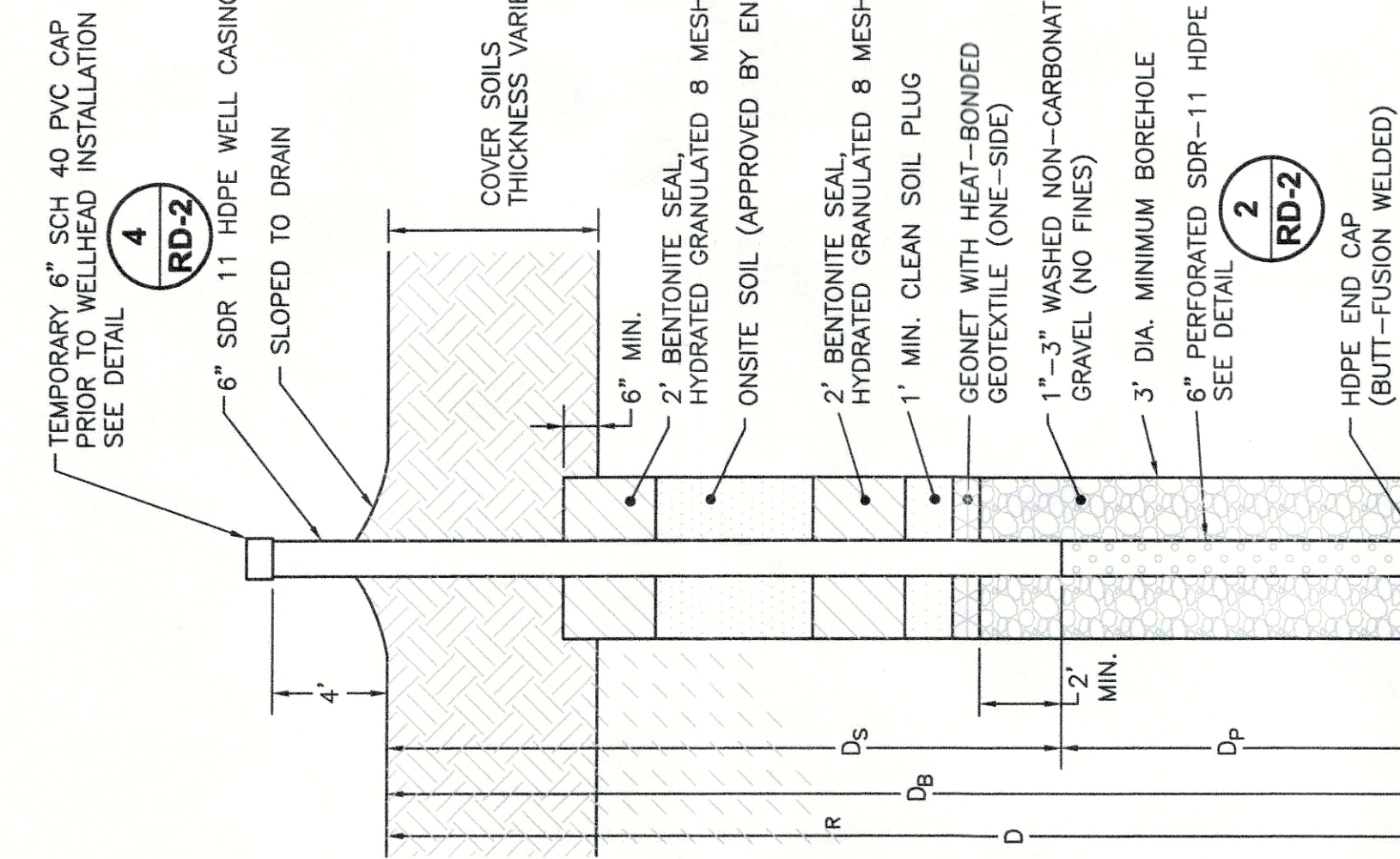
Project Engineer. Observed the drilling and installation of landfill gas monitoring wells at municipal waste landfill. Provided written and photographic documentation of installation methods, as well as equipment and materials onsite. Prepared daily work summary reports for client.

Memberships

Water Environment Federation

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OHIO EPA NEDO

Appendix D: Project Record Drawings



WELLHEAD

DETAIL 4

SCALE: NOT TO SCALE

RD-2

NOTES:

1. WELLHEAD ASSEMBLY SHOWN IS 2" LANDTEC ACCU-FLO MODEL 200 WELLHEAD ASSEMBLY.

2. CONTRACTOR PROVIDED HIGH VISIBILITY TAPE AROUND TOP 1'-FOOT OF WELL CASING AND LATERAL PIPE.

3. CONTRACTOR GRADED FOR DRAINAGE OF SURFACE WATER AWAY FROM THE WELLHEAD.

4. LATERAL PIPING TO DRAINED TO THE MAIN HEADER, AWAY FROM THE WELLHEAD, AT A MINIMUM SLOPE OF 3 PERCENT.

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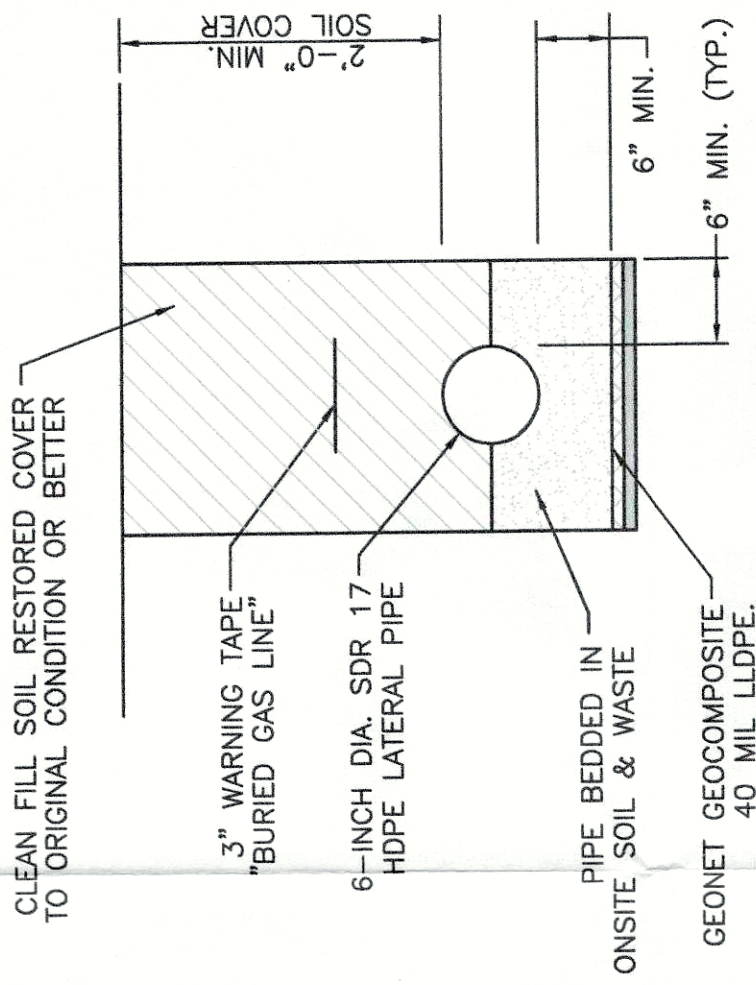
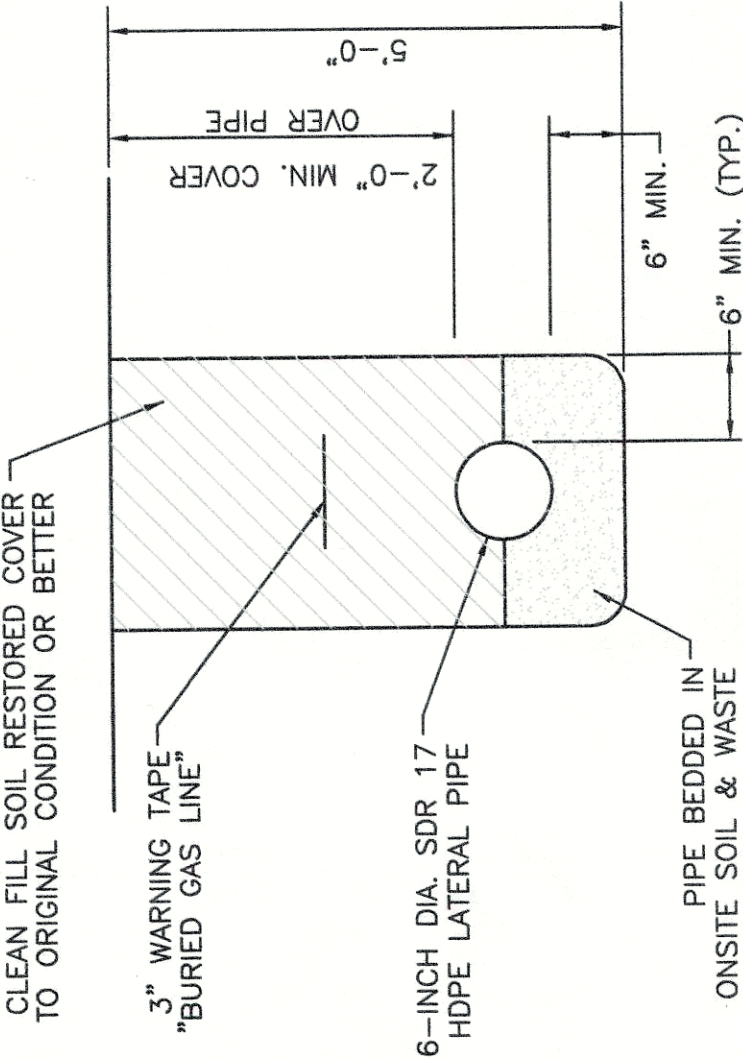
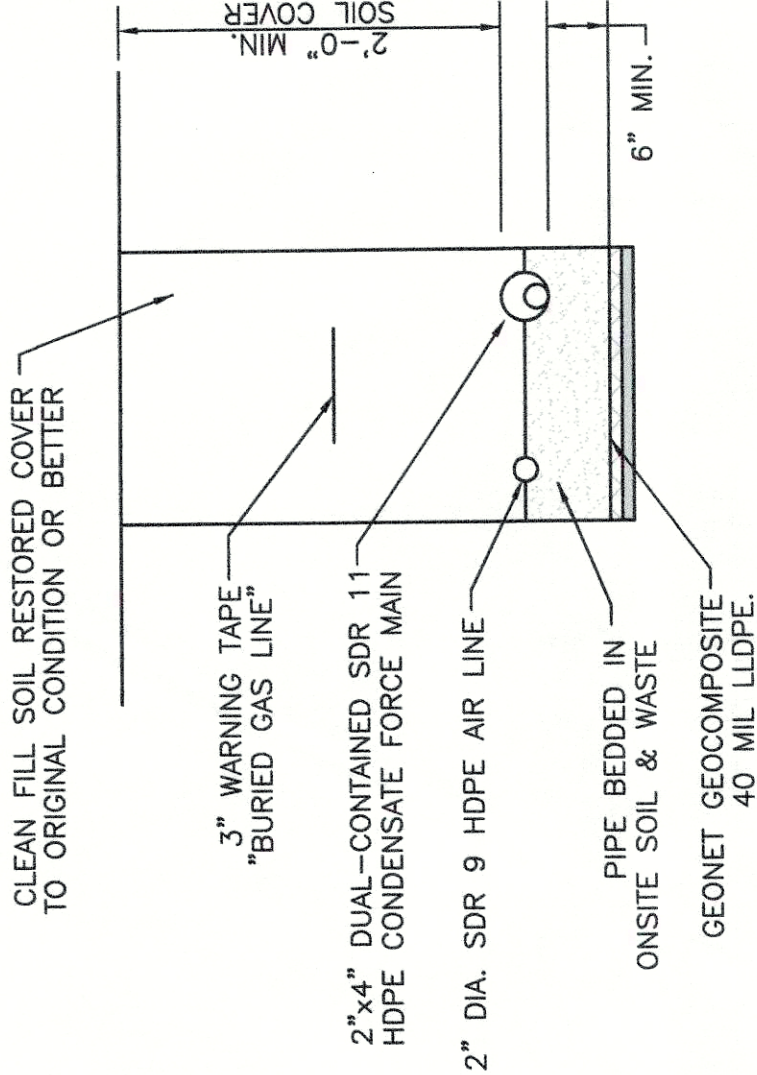
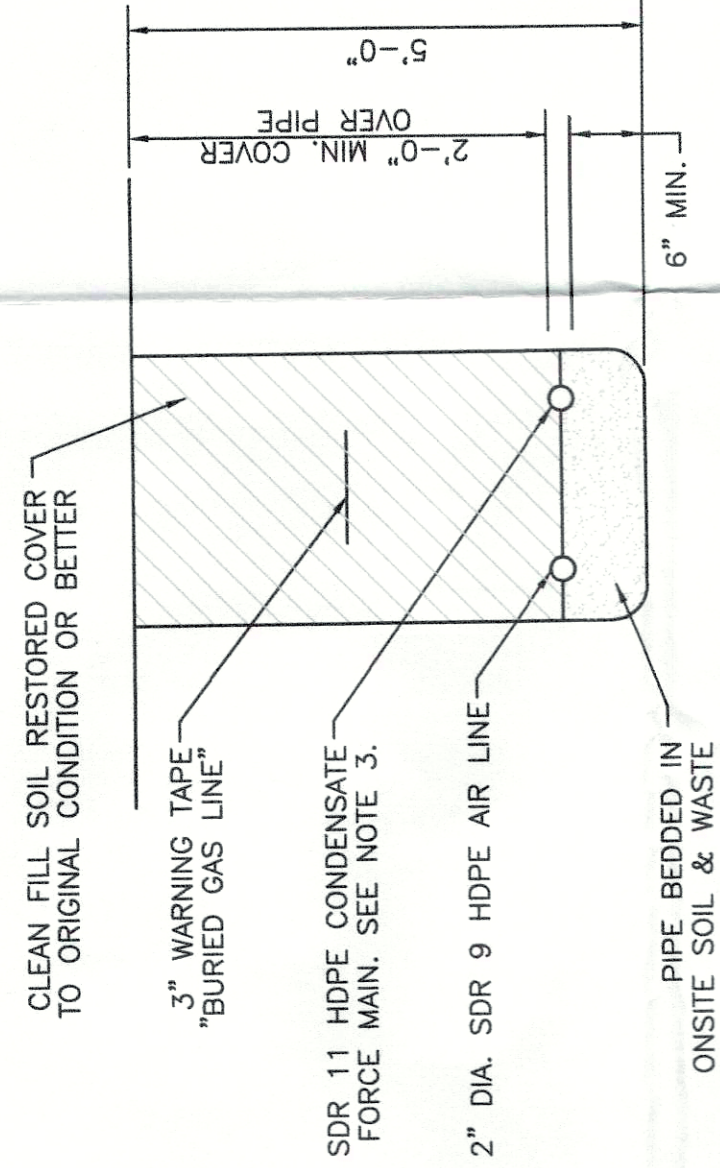
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FORCE MAIN/AIRLINE TRENCH

DETAIL 1
SCALE: NOT TO SCALE RD-3

- NOTES:
1. COMPACTED ONSITE SOIL & WASTE PROVIDED SOLID BEDDING FOR PIPING.
 2. CONDENSATE FORCEMAIN WAS 2" WHEN PLACED INSIDE THE LIMITS OF WASTE PLACEMENT, AND 2"x4" DUAL CONTAINED WHEN PLACED OUTSIDE THE LIMITS OF WASTE PLACEMENT OR AS NOTED ON DRAWINGS.

FORCE MAIN/AIRLINE TRENCH IN FINAL COVER AREA

DETAIL 2
SCALE: NOT TO SCALE RD-3

- NOTES:
1. COMPACTED ONSITE SOIL & WASTE PROVIDED SOLID BEDDING FOR PIPING.

LATERAL TRENCH

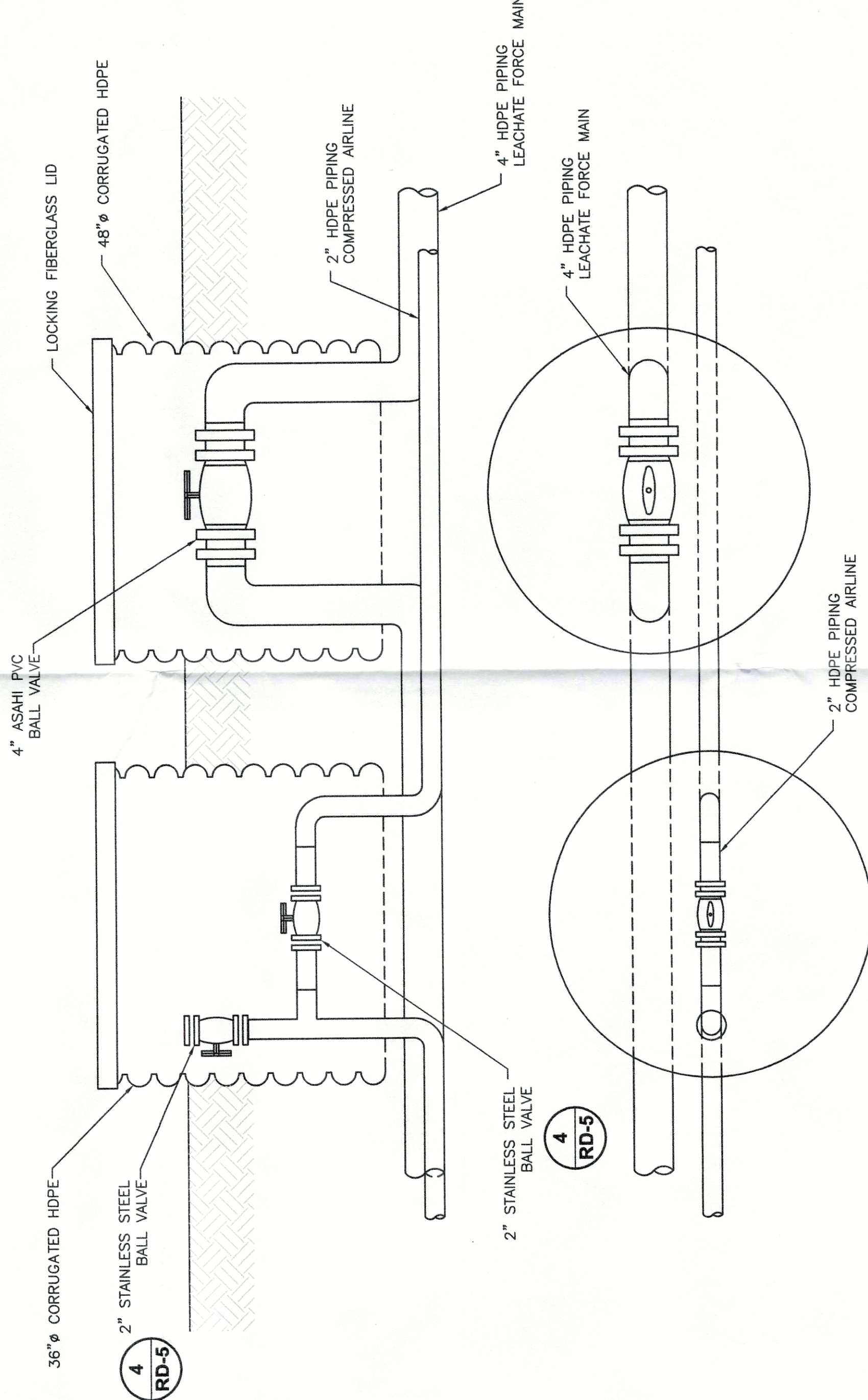
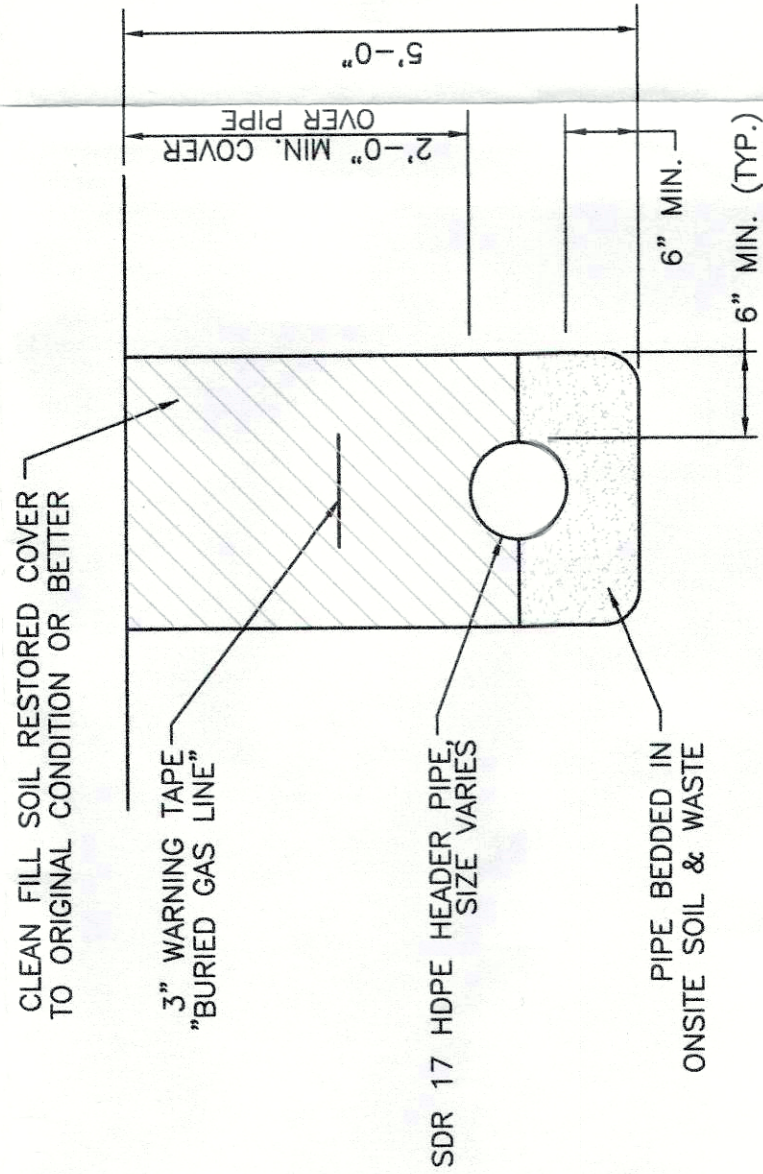
DETAIL 3
SCALE: NOT TO SCALE RD-3

- NOTES:
1. COMPACTED ONSITE SOIL & WASTE PROVIDED SOLID BEDDING FOR PIPING.

LATERAL TRENCH IN FINAL COVER AREA

DETAIL 4
SCALE: NOT TO SCALE RD-3

- NOTES:
1. COMPACTED ONSITE SOIL & WASTE PROVIDED SOLID BEDDING FOR PIPING.



HEADER SPUR TRENCH

DETAIL 5
SCALE: NOT TO SCALE RD-3

- NOTES:
1. COMPACT ONSITE SOIL & WASTE PROVIDED SOLID BEDDING FOR PIPING.

LATERAL TIE-IN TO HEADER/LATERAL WITH TEE (FOR 6" AND 8" HEADER/LATERAL)

DETAIL 7
SCALE: NOT TO SCALE RD-3

- NOTES:
1. HDPE MOLDED TEES USED TO TIE-IN 2"Ø AND LARGER LFG LATERALS TO 8"Ø HEADER/LATERAL AND SMALLER.
 2. 1" MIN. OF SAND PLACED BELOW EACH TEE. THE SAND INSTALLED SO IT EXTENDS 3" MIN. IN EACH DIRECTION OF THE TEE SAND SLIGHTLY MOISTENED AND HAND-TAMPED PROVIDING SUPPORT TO ALL POINTS OF THE TEE. CLEAN GRADED SOIL HAND-TAMPED ABOVE TEE (1' MIN.) WHILE BEING CAREFUL TO ELIMINATE ALL VOIDS.

AIR LINE AND FORCE MAIN ISOLATION VALVES

DETAIL 6
SCALE: NOT TO SCALE RD-3

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SEP 08 2011
OHIO EPA NEDO

BROWN AND CALDWELL

COLUMBUS, OHIO

SUBMITTED: PROJECT MANAGER DATE:
APPROVED: BROWN AND CALDWELL DATE:

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: BKK
DRAWN: BKK
CHECKED: EG
APPROVED:

EXTERNAL REFERENCES

IMAGE REFERENCES

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.



LORAIN COUNTY II LANDFILL

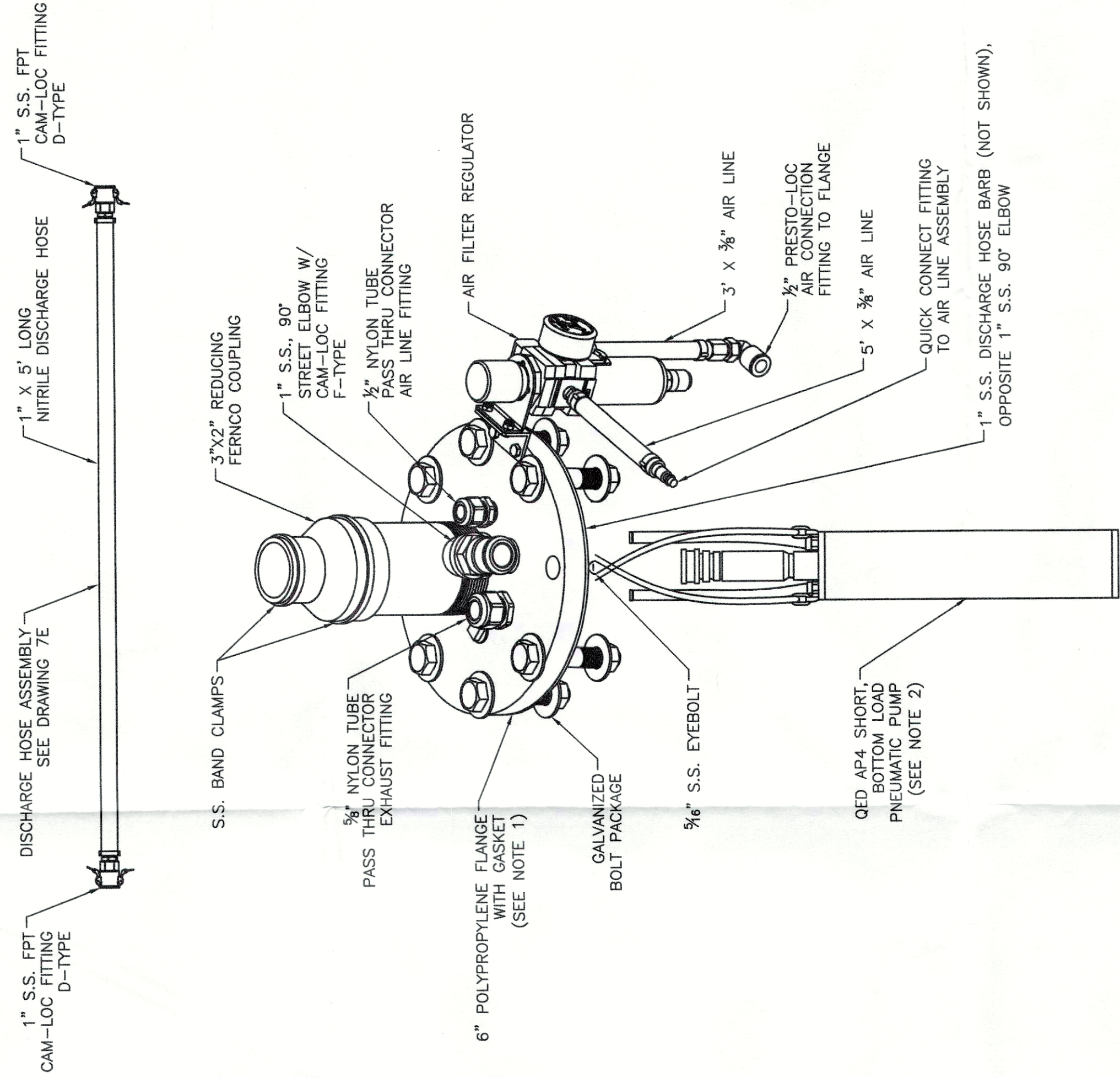
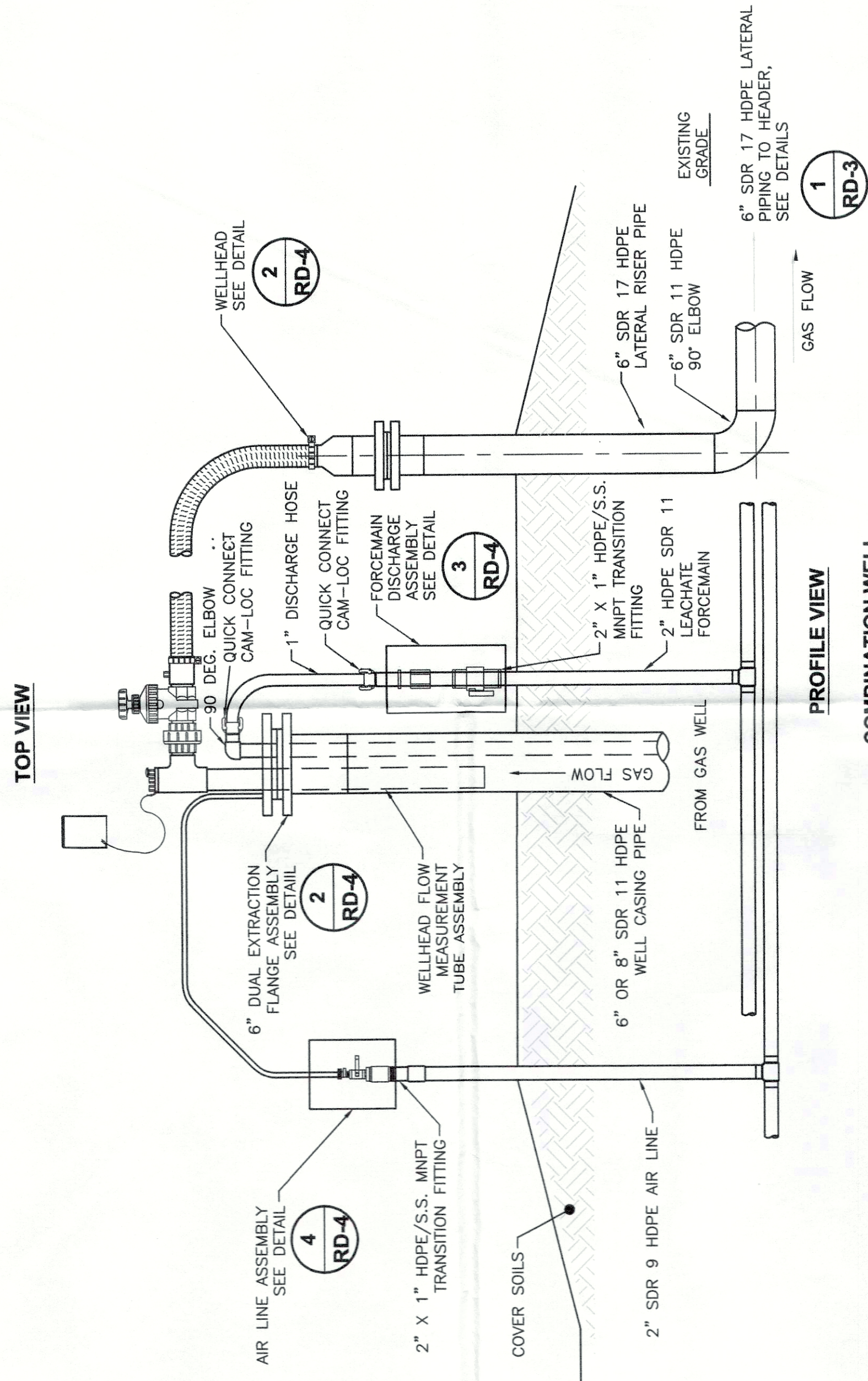
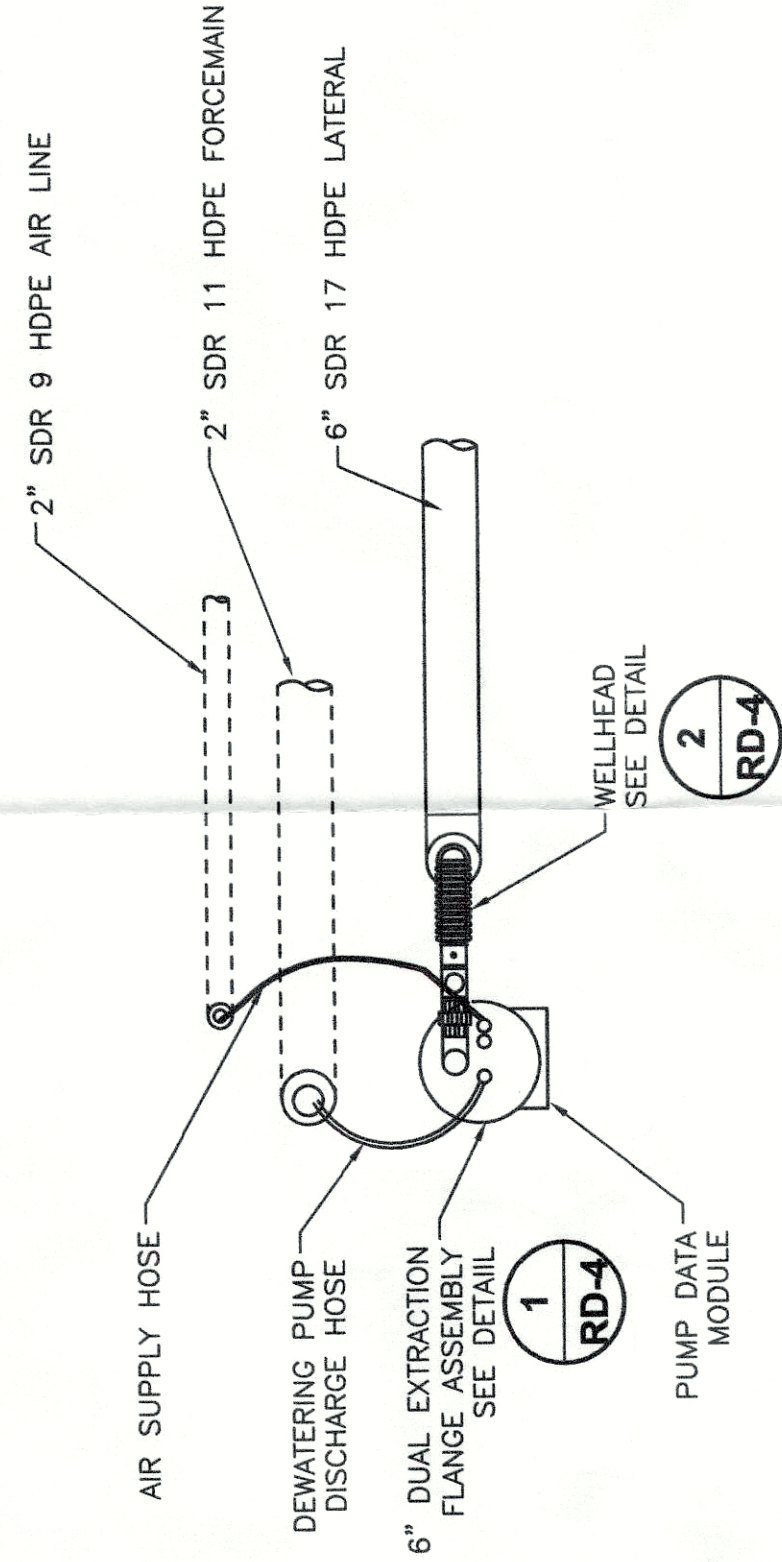
OVERLIN, OHIO

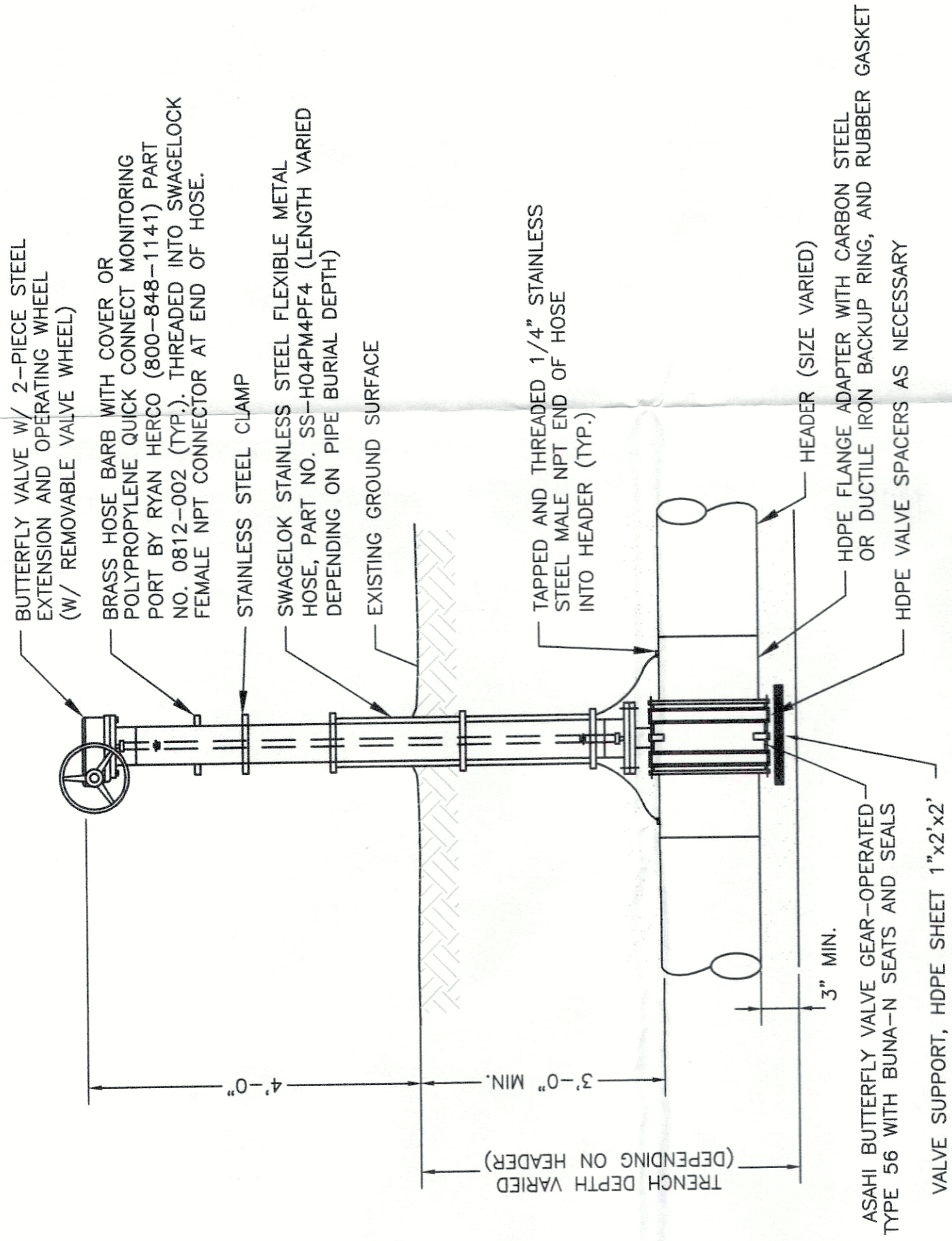
2011 GCCS PHASE 1

PROJECT RECORD DRAWINGS

DETAILS

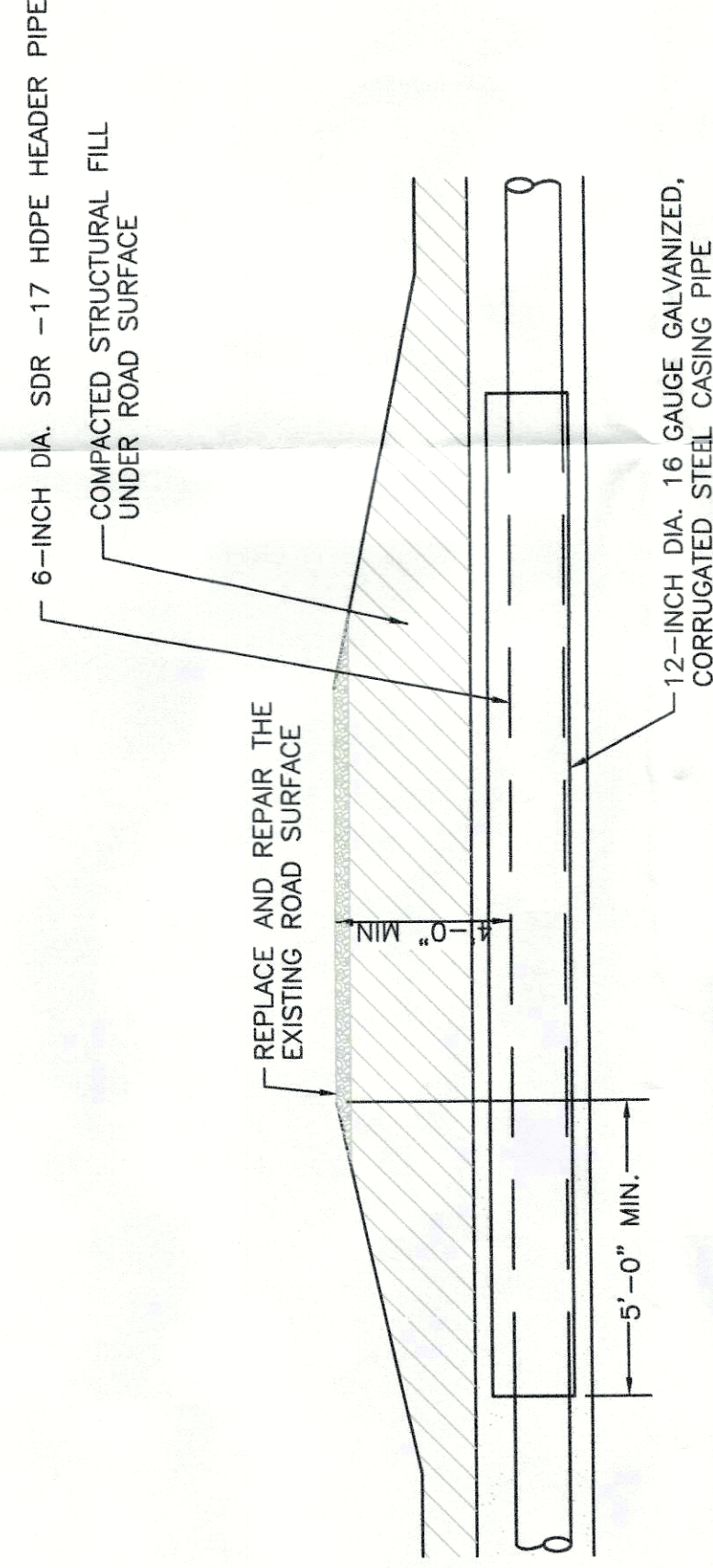
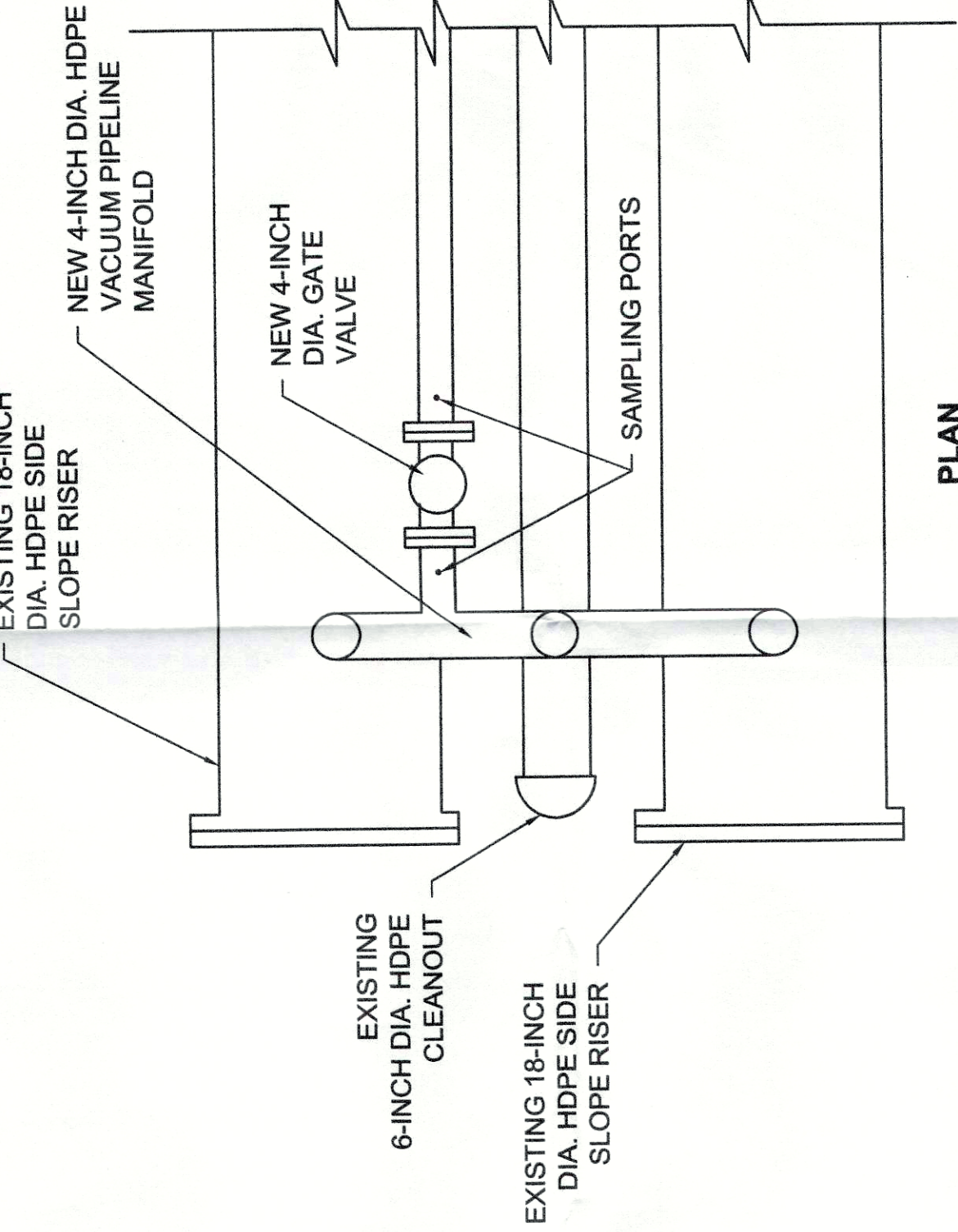
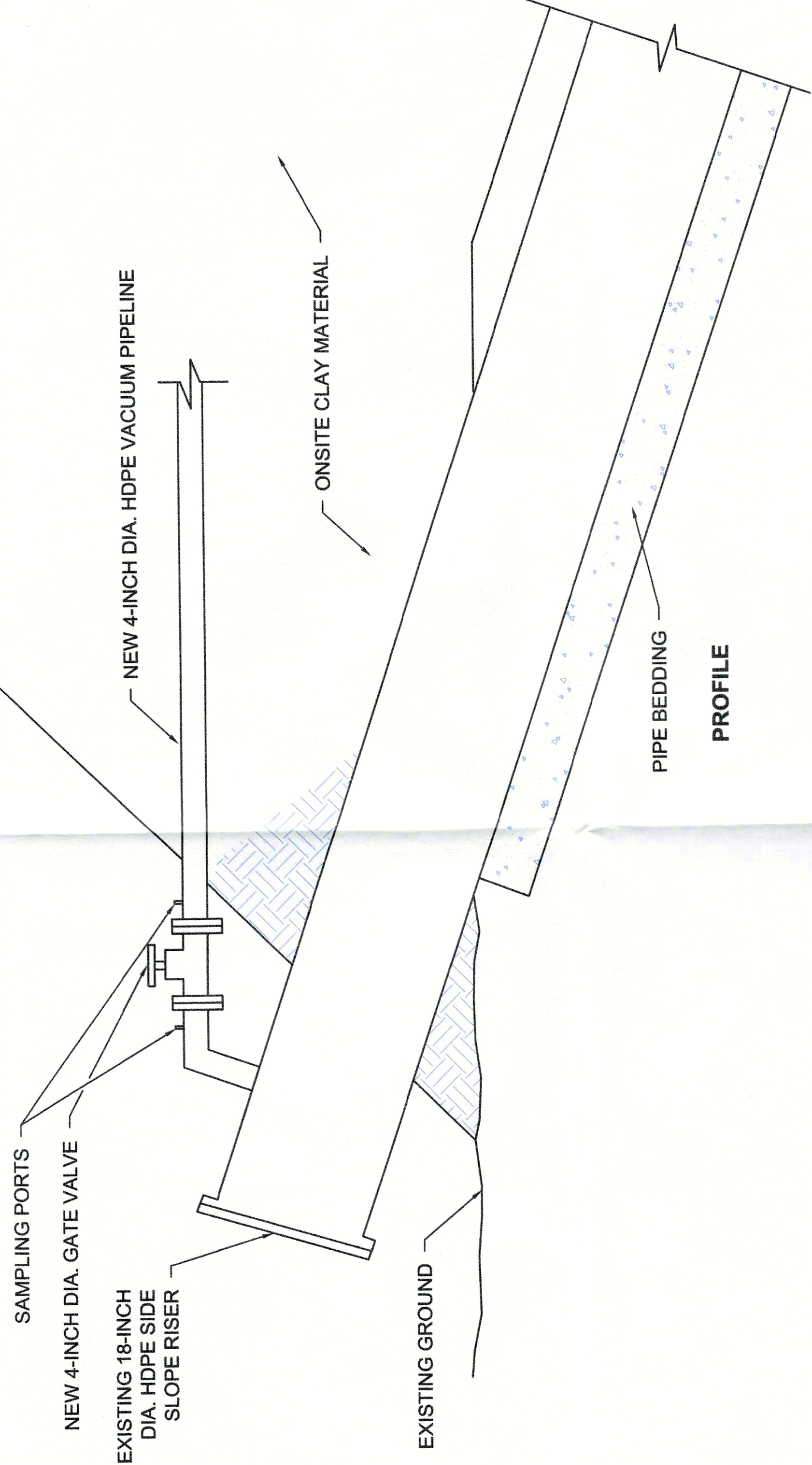
FILENAME RD-3.DWG	PROJECT NUMBER 140980	CLIENT PROJECT NUMBER	DRAWING NUMBER RD-3	SHEET NUMBER 3 OF 5
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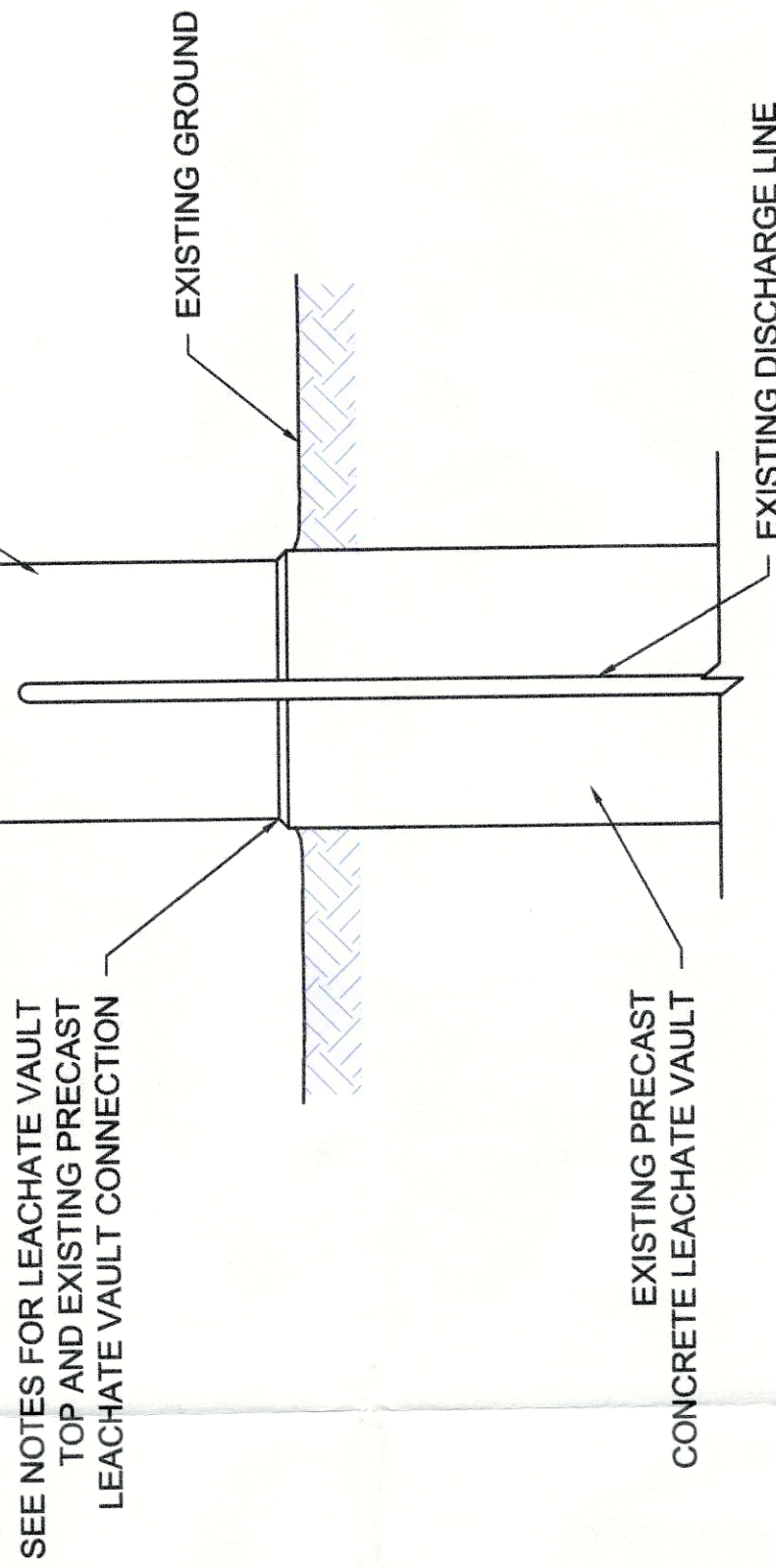


CONTROL VALVE
DETAIL 1
SCALE: NOT TO SCALE RD-5

- NOTES:
1. THOROUGHLY COATED ENTIRE SURFACE OF BOLTS, WASHERS, NUTS, AND BACKUP RINGS W/ POLYCOAT RUBBERIZED PRIMER AFTER TIGHTENING BOLTS. COATING HAS NO "HOLIDAYS", OR GAPS IN ITS APPLICATION.
 2. WRAPPED FLANGE IN PLASTIC WRAP PRIOR TO BACKFILLING.

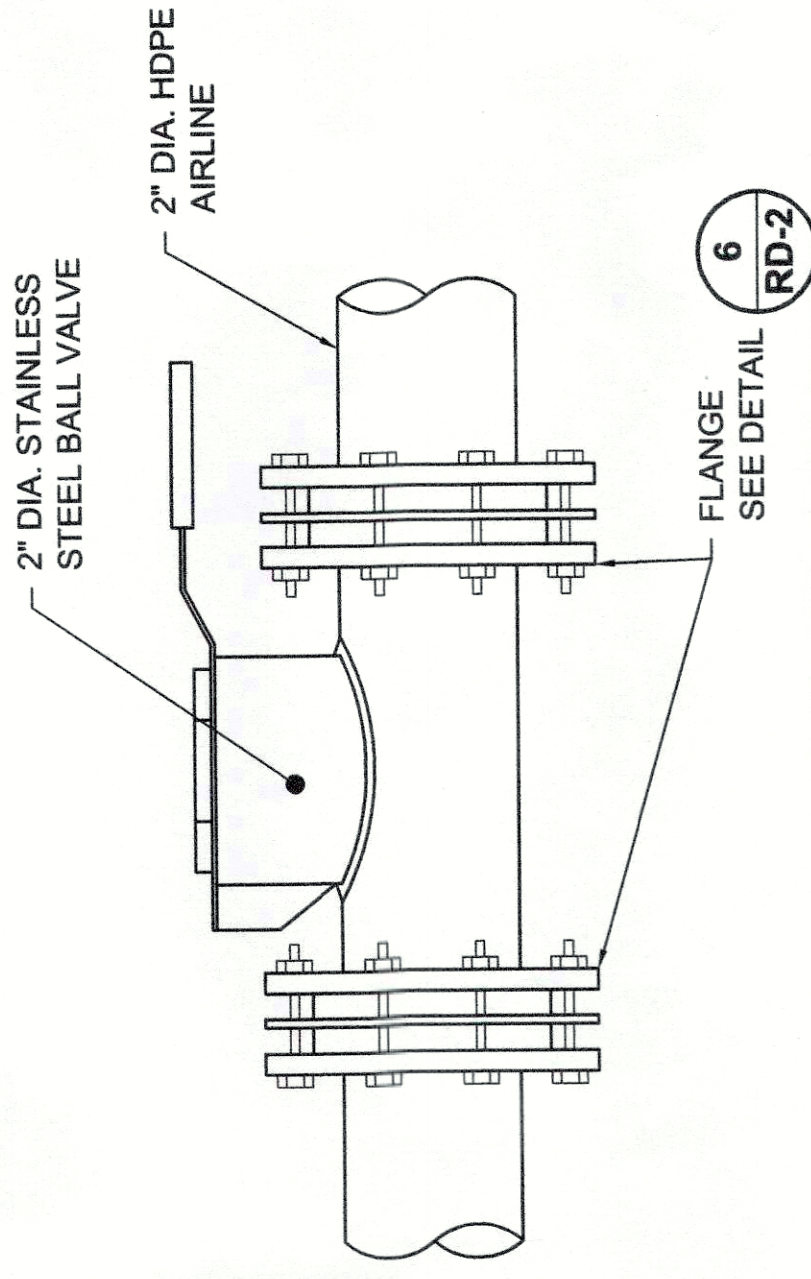


TRENCHED ROAD CROSSING
DETAIL 3
SCALE: NOT TO SCALE RD-5

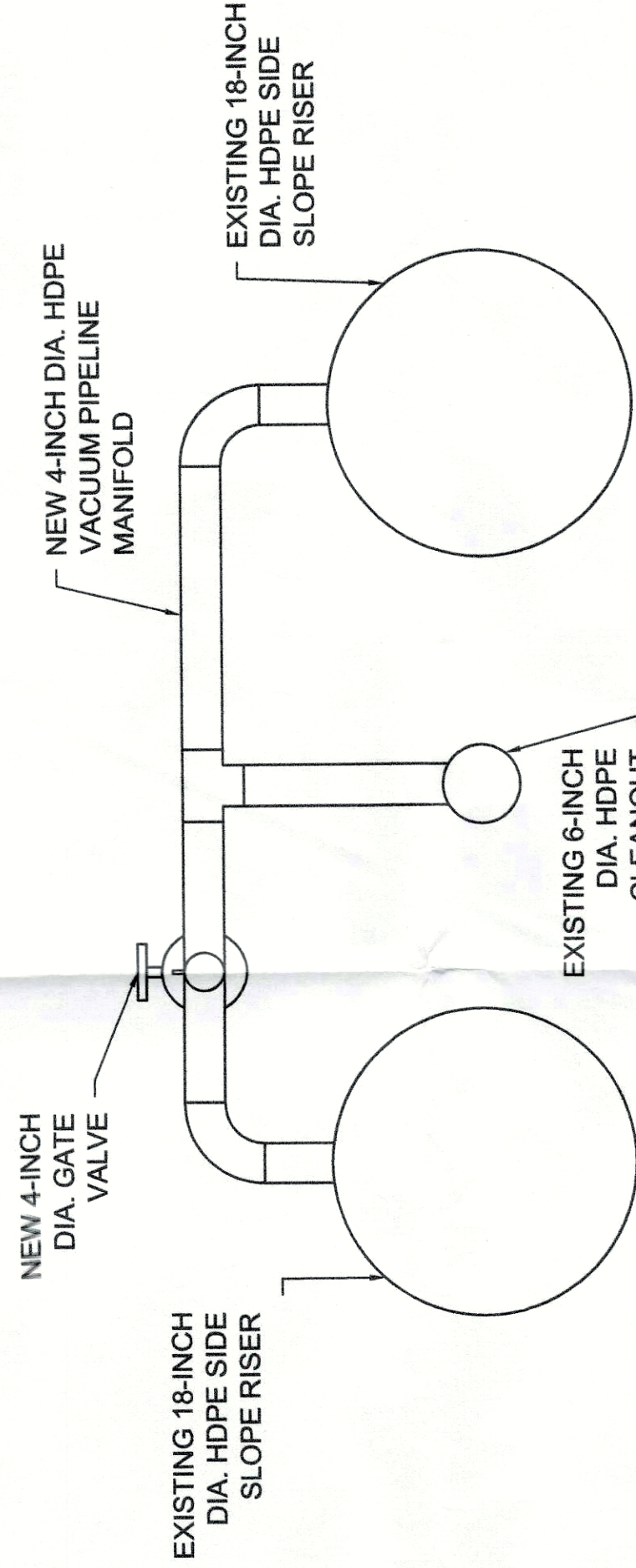


LEACHATE VAULT-LR6
DETAIL 4
SCALE: NOT TO SCALE RD-5

- NOTES:
1. VAULT TOP ANCHORED USING 48-INCH WATER-TIGHT FLANGE SET AND NEOPRENE GASKET.
 2. EIGHT 1/2-INCH ANCHOR BOLTS AND SILICONE, EVENLY SPACED AROUND THE TOP OF THE EXISTING PRECAST CONCRETE LEACHATE VAULT.



STAINLESS STEEL BALL VALVE ASSEMBLY
DETAIL 4
SCALE: NOT TO SCALE RD-5



LEACHATE SIDE SLOPE RISER CONNECTION
FRONT VIEW
DETAIL 2
SCALE: NOT TO SCALE RD-5

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BROWN AND CALDWELL

COLUMBUS, OHIO

SUBMITTED: _____ PROJECT MANAGER _____ DATE: _____
APPROVED: _____ BROWN AND CALDWELL _____ DATE: _____

EXTERNAL REFERENCES

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)	EXTERNAL REFERENCES	IMAGE REFERENCES
DESIGNED: BKK		
DRAWN: BKK		
CHECKED: EG		
APPROVED:		



ZONE	REV.	DESCRIPTION	BY	DATE	APP.

LORAIN COUNTY II LANDFILL
OBERLIN, OHIO

2011 GCCS PHASE 1
PROJECT RECORD DRAWINGS
DETAILS

FILENAME
RD-5.DWG
BC PROJECT NUMBER
140880
CLIENT PROJECT NUMBER
DRAWING NUMBER
RD-5
SHEET NUMBER
5 OF 5

Appendix E: Landfill Gas Extraction Well Boring Logs

American Environmental Group, Ltd.

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OHIO EPA NEDO

American Environmental Group, Ltd



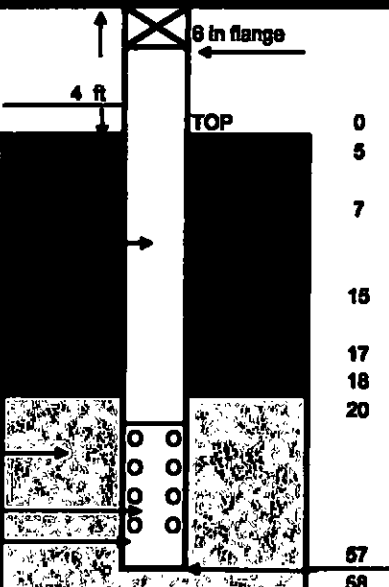
American
Environmental
Group Ltd.

Well Log

PROJECT NAME Lorain Landfill

DATE: 8/3/2011 FRI

PROJECT# 10111-105

Drilling		Well Asbuilt	
EW-1AR WELL NUMBER OR NAME			
<u>68</u> LINEAR FEET OF DRILLING		surface <u>759</u>	TOP 0
<u>58</u> LINEAR FEET OF COMPLETION		5 foot Clean on site soil	5
<u>0</u> LINEAR FEET OF ABANDONMENT		Bentonite 2 feet hydrated	7
		liner at 5 feet	
		Length of Solid below surface 20'	
<u>145PM</u>	<u>414PM</u>	clean on site clay backfill	15
Weather conditions: <u>Sunny Warm</u>		Bentonite 2 feet hydrated	17
Site conditions: <u>DRY</u>		clean on site clay backfill 1 ft	18
Rig hrs:		Isolation Ring	20
Service: <u>Radiator Grease</u>		Perf	
NOTES:		Length of Gravel Pack <u>40</u>	
Bench Time=0		Length of Perf. Pipe <u>37</u>	
		style of pipe <u>6" Sdr-11 hdpe</u>	
		Bore diameter <u>36" well bore</u>	57
		Bottom of bore <u>58</u>	58

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
145 pm	20.9			0-5	soil cover	none	dry	none
245 pm	20.9			0 5 feet	liner	none	dry	NONE
345 pm	20.9			0 5 10	HHT	slight	dry	73
414 pm	20.9			0 10 20	HHT	moderate	WET	85
				0 20 30	HHT	moderate	DRY	81
				0 30 40	HHT	moderate	DRY	83
				0 40 60	HHT/WOOD	moderate	DRY	85
				0 50 68	HHT/SOIL	moderate	DRY	80
Notes								
					TD 58			

James A. Tadia 6/3/11
CLIENT REPRESENTATIVE DATE
James A. Tadia 6/3/11 Goldwell CBA
NAME & TITLE

RONNIE ROWE FRI 8/3/2011
AEG SITE SUPERVISOR DATE



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 4/29/2011 Fri

Drilling	Well Asbuilt
EW-40 R2 WELL NUMBER OR NAME	
100 LINEAR FEET OF DRILLING	
100 LINEAR FEET OF COMPLETION	
0 LINEAR FEET OF ABANDONMENT	
7 00 am 12 30 pm	
Weather conditions: Sunny Cool	
Site conditions: Very Muddy	
Rig hrs:	
Service: Radiator Grease	
NOTES:	
Bench Time=0	Length of Gravel Pack 82 Length of Perf. Pipe 79 style of pipe 6" Sdr-11 hdpe Bore diameter 36" well bore Bottom of bore 100 36 inch well bore

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
8 00 am	20.9	0	0	0-1	soil cover	none	dry	none
9 00 am	20.9	0	0	2-5	trash paper plastic	slight	dry	72
10 00 am	20.9	0	0	5 10	trash wood wire	slight	dry	83
11 00 am	20.9	0	0	10 20	trash rags plastic	slight	dry	82
12 00 pm	20.9	0	0	20 30	trash wood paper	moderate	dry	104
12 30 pm	20.9	0	0	30 40	trash paper wire	moderate	dry	110
				40 50	trash wood paper	moderate	dry	107
				50 60	trash dirt mixed	moderate	dry	109
				60 70	trash paper plastic	moderate	dry	113
				70 80	trash wood paper	moderate	dry	118
				80 90	trash rags plastic	moderate	dry	122
				90 100	trash wood muck	heavy	moist	119
Notes								
tburgv@aeql.net								
Tim Burgy Sr-Cell-330-352-9609					TD 100 FEET			

Tim Burgy Sr. 4/30/11
CLIENT REPRESENTATIVE DATE
James A. Todd: Brown Goldwell CQA
NAME & TITLE

Tim Burgy sr. Fri 4 29 2011
AEGL SITE SUPERVISOR DATE



Well Log

PROJECT NAME	<u>Lorain Landfill</u>
PROJECT#	10111-105

DATE: 6/13/2011 MON

Drilling		Well Asbuild	
EW50R WELL NUMBER OR NAME			
42 LINEAR FEET OF DRILLING		surface. 822 4 foot Clean on site soil Bentonite 2 feet hydrated TRASH @ 4FT Length of Solid below surface 20'	
42 LINEAR FEET OF COMPLETION		clean on site clay backfill Bentonite 2 feet hydrated clean on site clay backfill 1 ft Isolation Ring Perf Length of Gravel Pack 24 Length of Perf .Pipe 21 style of pipe 6" Sdr-11 hdpe Bore diameter 36" well bore Bottom of bore 42	
0 LINEAR FEET OF ABANDONMENT		6 in flange TOP 0 4 6 15 17 18 20 41 42	
730AM 845AM			
Weather conditions: SUNNY			
Site conditions:			
Rig hrs:			
Service: Raladiator Grease			
NOTES:			
Bench Time=1			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
730AM	20.8	0						
845AM	20.8	0	0					
				0 10	HHT	slight	dry	72
				10 20	HHT	moderate	DRY	80
				20 30	HHT	moderate	DRY	84
				30-42	HHT	slight	DRY	84
Notes	WEATHER							
	NICE							

Christopher 6/15/11
CLIENT REPRESENTATIVE DATE
Burt Ntoda Burt Ntoda CBA
NAME & TITLE

RONNIE ROWE **MON 6/13/2011**
AEGL SITE SUPERVISOR **DATE**

RONNIE ROWE **THUR 6/9/2011**
AEGLE SITE SUPERVISOR **DATE**



Well Log

PROJECT NAME	Lorain Landfill
PROJECT#	10111-105

DATE: 6/8/2011 **THUR**

Drilling		Well Asbuilt	
EW81R WELL NUMBER OR NAME			
43 LINEAR FEET OF DRILLING			
43 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
734AM 915AM			
Weather conditions: SUNNY			
Site conditions:			
Rig hrs:			
Service: Radiator Grease			
NOTES:			
Bench Time=0			
	surface, 621	4 ft	TOP 0
	5 foot Clean onsite soil		5
	Bentonite 2 feet hydrated		
	liner at 5 feet		7
	Length of Solid below surface 20'		
	clean on site clay backfill		16
	Bentonite 2 feet hydrated		
			17
	clean on site clay backfill 1 ft		18
	Isolation Ring		20
	Perf	O O	
	Length of Gravel Pack 25		
	Length of Perf .Pipe 22		
	style of pipe 6" Sdr-11 hdpe		
	Bore diameter 36" well bore		42
	Bottom of bore 43		43

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
745AM	20.9	0		0-5	soil cover	none	dry	none
845AM	20.9	0	0	5 feet	liner	none	dry	NONE
916AM	20.9	0	0	5 10	hht/wood	slight	dry	84
		0	0	10 20	HHT/SOIL	moderate	DRY	84
		0	0	20 30	hht	moderate	dry	85
		0	0	30-43	HHT	slight	DRY	85
		0	0					
Notes	WEATHER							




 CLIENT REPRESENTATIVE DATE

RONNIE ROWE **THUF 6/9/2011**
AEGL SITE SUPERVISOR **DATE**

NAME & TITLE Traci A. Tobia, Bureau Chief/CA



Well Log

DATE: 6/7/2011 TUES

Drilling		Well Asbuilt	
EW 85R WELL NUMBER OR NAME			
48 LINEAR FEET OF DRILLING			
48 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
745AM 330PM			
Weather conditions: RAIN EARLY			
Site conditions: WET			
Rig hrs:			
Service: Radiator Grease			
NOTES:			
Bench Time=0			
	surface 818	4 ft	6 in flange
	5 foot Clean onsite soil		TOP 0
	Bentonite 2 feet hydrated		5
	liner at 5 feet		7
	Length of Solid below surface 20'		
	clean on site clay backfill		16
	Bentonite 2 feet hydrated		
	clean on site clay backfill 1 ft		17
	Isolation Ring		18
	Perf		20
	Length of Gravel Pack 30		
	Length of Perf Pipe 27		
	style of pipe 6" Sdr-11 hdpe		
	Bore diameter 36" well bore		47
	Bottom of bore 48		48

[illegible]

James Todd 6/14/11
CLIENT REPRESENTATIVE DATE
James A Todd Proctor & Ketchum CPA
NAME & TITLE

RONNIE ROWE **TUES 6/7/2011**
AEGL SITE SUPERVISOR **DATE**



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 6/4/2011 SAT

Drilling		Well Asbuilt	
EW 91AR WELL NUMBER OR NAME			
81 LINEAR FEET OF DRILLING			
81 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
1100AM 330PM			
Weather conditions: Sunny Warm			
Site conditions: DRY			
Rig hrs:			
Service: Radiator Grease			
NOTES:			
Bench Time=2		TOP 0 5 7 15 17 18 20 63 60 80 81 36 inch well bore	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
1100am	20.9	0		0-5	soil cover	none	dry	none
1200pm	20.9	0		0 5 feet	liner	none	dry	NONE
100pm	20.9	0		0 5 10	hht/wood	slight	dry	74
200pm	20.9	0		0 10 20	hht/wood	moderate	WET	88
300pm	20.9	0		0 20 30	hht	moderate	WET	92
330pm	20.9	0		0 30-40	hht/soil	moderate	DRY	104
				0 40-50	hht/soil	moderate	DRY	100
				0 50-60	hht	moderate	DRY	104
				0 60-70	hht	moderate	dry	99
				0 70-81	hht	moderate	dry	104
Notes								
					td 81			

Amelia Stokes 6/4/11
CLIENT REPRESENTATIVE DATE
Brian A. Brown 6/4/11
NAME & TITLE

RONNIE ROWE Saturday
AEGL SITE SUPERVISOR FRI 6/4/2011
DATE



Well Log

DATE: 6/17/2011 FRI

[illegible]

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
130PM	20.9	0	0					
230PM	20.9	0	0					
345PM	20.9	0	0	0-10	HHT	slight	dry	78
				10-20	HHT	moderate	WET	77
				20-30	HHT	moderate	WET	77
				30-42	HHT	HIGH	WET	78
Notes	WEATHER							
	NICE							

RONNIE ROWE **FRI 8/17/2011**
AEGL SITE SUPERVISOR **DATE**



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 6/8/2011 WED

Drilling		Well Asbuild	
EW122R WELL NUMBER OR NAME			
92 LINEAR FEET OF DRILLING		8 in flange	
92 LINEAR FEET OF COMPLETION		TOP 0	
0 LINEAR FEET OF ABANDONMENT		5	
830AM 230PM		7	
Weather conditions: RAIN EARLY		15	
Site conditions: WET		17	
Rig hrs:		18	
Service: Ralidator Grease		20	
NOTES:			
Bench Time=0		91	
		92	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
830AM	20.9	0		0-5	soil cover	none	dry	none
830AM	20.9	0		5 feet	liner	none	dry	NONE
1030AM	20.9	0		5 10	hht/wood	slight	dry	83
1130AM	20.9	0		10 20	HHT/SOIL	moderate	DRY	80
1230PM	20.9	0		20 30	hht	moderate	dry	82
130PM	20.9	0		30-40	hht/soil	moderate	dry	83
230PM	20.9	0		40-50	HHT	moderate	DRY	
				50-60	HHT	moderate	WET	
				60-70	HHT	moderate	WET	
				70-80	HHT	moderate	WET	
				80-92	HHT	moderate	WET	
Notes WEATHER				92 TD				

Amelia 10/8/11
CLIENT REPRESENTATIVE DATE
Ronnie Rowe AEGL Site Supervisor
NAME & TITLE

RONNIE ROWE WED 6/8/2011
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 6/10/2011 FRI

Drilling		Well Asbuild	
EW143R2 WELL NUMBER OR NAME <u>EW 143R</u>			
80 LINEAR FEET OF DRILLING			
80 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
800AM 1100AM			
Weather conditions: <u>SUNNY</u>			
Site conditions:			
Rig hrs:			
Service: <u>Radiator</u> <u>Grease</u>			
NOTES:			
Bench Time=1			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
800AM	20.9	0		0-5	soil cover	none	dry	none
900AM	20.9	0	0	5 feet	liner	none	dry	NONE
1000AM	20.9	0	0	5 10	hht/wood	slight	dry	72
1100AM	20.9	0	0	10 20	SLUG	moderate	WET	83
		0	0	20 30	SLUG	moderate	WET	97
		0	0	30-40	HHT	slight	DRY	113
		0	0	40-50	HHT	slight	DRY	115
				50-60	HHT	slight	DRY	124
				60-70	HHT	slight	DRY	122
				70-80-	HHT	slight	DRY	119
Notes <u>WEATHER</u>								
<u>1.5 HRS DRILLING IN SLUG</u>								

Amelia 6/14/11
CLIENT REPRESENTATIVE DATE
Amelia 6/14/11 CRP
NAME & TITLE

RONNIE ROWE FRI 6/10/2011
AEG SITE SUPERVISOR DATE



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 6/14/2011 TUE

Drilling		Well Boring Log	
EW156 WELL NUMBER OR NAME			
77 LINEAR FEET OF DRILLING			
77 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
730AM 1100AM			
Weather conditions: SUNNY			
Site conditions:			
Rig hrs:			
Service: Ralidator Grease			
NOTES:			
Bench Time=1.5			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
730AM	20.8	0	0					
830AM	20.8	0	0					
930AM	20.8	0	0	0-10	HHT	slight	dry	78
1100AM	20.8	0	0	10-20	HHT	moderate	DRY	114
		0		20-30	HHT	moderate	DRY	107
				30-40	HHT	slight	DRY	107
				40-50	HHT	moderate	dry	112
				60-70	HHT	moderate	dry	102
				70-77	HHT	moderate	dry	111
Notes WEATHER								
NICE								

CLIENT REPRESENTATIVE 4/15/11
 DATE

 NAME & TITLE

RONNIE ROWE
 AEGL SITE SUPERVISOR
 TUE 6/14/2011
 DATE



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 8/14/2011 TUE

Drilling		Well Asbuild	
EW157 WELL NUMBER OR NAME			
87 LINEAR FEET OF DRILLING		8 in flange	0
87 LINEAR FEET OF COMPLETION		TOP	4
0 LINEAR FEET OF ABANDONMENT			6
1130AM 300PM			15
Weather conditions: SUNNY			17
Site conditions:			18
Rig hrs:			20
Service: Radiator Grease			
NOTES:			
Bench Time=1.5			66
			87

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
1130AM	20.8	0	0					
1230PM	20.8	0	0					
130PM	20.8	0	0	0-10	HHT	slight	dry	77
300PM	20.8	0	0	10-20	HHT	moderate	DRY	84
		0		20-30	HHT	moderate	DRY	112
				30-40	HHT	slight	DRY	104
				40-50	HHT	moderate	dry	105
				60-70	HHT	moderate	dry	115
				70-80	HHT	moderate	dry	108
				80-87	HHT	moderate	DRY	101
Notes WEATHER								
NICE								

Ronaldia 6/15/11
CLIENT REPRESENTATIVE DATE
Ronaldia Brown
NAME & TITLE

RONNIE ROWE TUE 8/14/2011
AEG SITE SUPERVISOR DATE



Well Log

PROJECT NAME . Lorain Landfill

DATE: 4/22/2011 **Fr**

PROJECT# 10111-105

Drilling		Well Asbuilt	
EW-159 WELL NUMBER OR NAME			
68 LINEAR FEET OF DRILLING		surface, 847	TOP 0
68 LINEAR FEET OF COMPLETION		1 foot Clean on-site soil	1
0 LINEAR FEET OF ABANDONMENT		Bentonite 2 feet hydrated	3
		Length of Solid below surface 20'	
8 00 am	11 00 pm	clean on site clay backfill	15
Weather conditions: Cool Rain		Bentonite 2 feet hydrated	17
Site conditions: Very Muddy		clean on site clay backfill 1 ft	18
Rig hrs:		Isolation Ring	20
Service: Ralidator Grease			
NOTES:		Perf	
Bench Time=3 Hr		Length of Gravel Pack 50	
		Length of Perf .Pipe 47	
		style of pipe 8" Sdr-11 hdpe	
		Bore diameter 36" well bore	67
		Bottom of bore 68	68

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
8 00 am	20.9	0	0	0-1	soil cover	none	dry	none
9 00 am	20.9	0	0	2-5	trash dirt mixed	slight	dry	60
10 00 am	20.9	0	0	5 10	trash wood paper	slight	dry	75
11 00 am	20.9	0	0	10 20	trash bed springs	slight	dry	92
				20 30	trash paper wood	slight	dry	99
				30 40	trash plastic rags	moderate	dry	105
				40 50	trash plastic wire	moderate	moist	109
				50 60	trash black dirt	moderate	moist	113
				60 68	trash wood paper	moderate	dry	101
					TD 68 FEET			
Notes								
tburgy@aepi.net								
Tim Burgy Sr-Cell-330-352-8608								

Paul Todia 4/25/11
CLIENT REPRESENTATIVE DATE
Joseph A Todia CAA: Brown-Caldwell
NAME & TITLE

Tim Burgy sr. **Fri 4 22 2011**
AEGL SITE SUPERVISOR **DATE**



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 5/11/2011 Wed

Drilling		Well Asbuild	
TEW-3-R WELL NUMBER OR NAME			
102 LINEAR FEET OF DRILLING			
102 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
9 00 am 3 00 pm			
Weather conditions: Sunny Warm			
Site conditions: Wet			
Rig hrs:			
Service: Ralidator Grease			
NOTES:			
Bench Time=0		101	
		102	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
				0-5	soil cover	none	dry	none
9 00 am	20.9	0	0	5 feet	liner	none	dry	67
10 00 am	20.9	0	0	5 10	trash paper rags	slight	dry	72
11 00 am	20.9	0	0	10 20	trash dirt mixed	moderate	dry	84
12 00 pm	20.9	0	0	20 30	trash wood plastic	moderate	dry	102
1 00 pm	20.9	0	0	30 40	trash dirt carpet	moderate	dry	106
2 00 pm	20.9	0	0	40 50	trash black dirt	moderate	dry	116
3 00 pm	20.9	0	0	50 60	trash paper plastic	moderate	dry	113
				60 70	trash dirt rocks	moderate	dry	119
				70 80	trash rags wood	moderate	dry	116
				80 90	trash wood plastic	moderate	dry	116
				90 102	trash wood paper	moderate	dry	119
Notes								
tburgv@aeql.net								
Tim Burgy Sr-Cell-330-352-8808					TD 102 FEET			

Tim Burgy Sr. 5/12/11
CLIENT REPRESENTATIVE DATE
Don A. Tadia Brown COA
NAME & TITLE

Tim Burgy sr. Wed 5/11/2011
AEGL SITE SUPERVISOR DATE



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 6/8/2011 MON

Drilling		Well Asbuild	
EW 120R2 WELL NUMBER OR NAME			
98 LINEAR FEET OF DRILLING			
98 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
1100AM 330PM			
Weather conditions: Sunny Warm			
Site conditions: DRY			
Rig hrs:			
Service: Radiator Grease			
NOTES:			
Bench Time=2		TOP 0 5 5 7 7 15 15 17 17 18 18 20 20 97 97 98 98	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
830AM	20.9	0		0-5	soil cover	none	dry	none
930AM	20.9	0	0	5 feet	liner	none	dry	NONE
1030AM	20.9	0	0	5 10	hht/wood	slight	dry	72
1130AM	20.9	0	0	10 20	HHT/SOIL	moderate	WET	116
1230PM	20.9	0	0	20 30	hht	moderate	WET	97
100PM	20.9	0	0	30-40	hht/soil	moderate	DRY	113
				40-60	hht/soil	moderate	DRY	123
				50-60	hht/soil	moderate	DRY	116
				60-70	hht/soil	moderate	dry	103
				70-80	hht/soil	moderate	dry	104
				80-80	HHT/SOIL	moderate	DRY	109
				80-88	HHT/SOIL	moderate	DRY	94
Notes								
					TD 98			

[Signature] 6/10/11
CLIENT REPRESENTATIVE DATE
[Signature] *[Signature]* CDA
NAME & TITLE

RONNIE ROWE MON 6/8/2011
AEG SITE SUPERVISOR DATE



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: FRI 8/17/2011

Drilling		Well Asbuilt	
EW146R2 WELL NUMBER OR NAME			
85 LINEAR FEET OF DRILLING			
95 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
730AM 1130AM			
Weather conditions: COOL			
Site conditions:			
Rig hrs:			
Service: Radditor Grease			
NOTES:			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
730AM	20.9	0	0					
830AM	20.9	0	0					
930AM	20.9	0	0	0-10	HHT	slight	dry	72
1030AM	20.9	0	0	10-20	HHT	moderate	WET	83
1130AM	20.9	0	0	20-30	HHT	moderate	WET	115
				30-40	HHT	moderate	DRY	112
				40-50	HHT	moderate	DRY	118
				50-60	HHT	moderate	DRY	122
				60-70	HHT/SOIL	moderate	DRY	110
				70-80	HHT	moderate	DRY	108
				80-95	HHT	HIGH	WET	108
Notes WEATHER								
COOL, LATE RAIN								

[Signature] 8/17/11
CLIENT REPRESENTATIVE DATE
[Signature] NAME & TITLE

RONNIE ROWE FRI 8/17/2011
AEGL SITE SUPERVISOR DATE



Well Log

PROJECT NAME	<u>Lorain Landfill</u>
PROJECT#	10111-105

DATE: 6/3/2011 FRI

Drilling		Well Asbuild	
E-155R WELL NUMBER OR NAME			
38 LINEAR FEET OF DRILLING			
38 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
1005AM 1200PM			
Weather conditions: Sunny Warm			
Site conditions: DRY			
Rig hrs:			
Service: Raldisior Grease			
NOTES:			
Bench Time=0			
	surface 826	TOP	0
	5 foot Clean onsite soil		5
	Bentonite 2 feet hydrated liner at 5 feet		7
	Length of Solid below surface 20'		
	clean on site clay backfill		15
	Bentonite 2 feet hydrated		17
	clean on site clay backfill 1 ft		18
	Isolation Ring		20
	Perf		
	Length of Gravel Pack 20		
	Length of Perf .Pipe 17		
	style of pipe 8" Sdr-11 hdpe		
	Bore diameter 36" well bore		37
	Bottom of bore 38		38

Monitoring Log				Well Boring Log					
Time	OXYGEN	H₂S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
1005 am	20.9	0	0	0-5	soil cover	none	dry	none	
1105 am	20.8	0	0	5 feet	liner	none	dry	NONE	
1200 pm	20.8	0	0	5-10	HHT	slight	dry	78	
			0	10-20	HHT	moderate	WET	83	
			0	20-30	HHT	moderate	WET	97	
			0	30-38	HHT	moderate	WET	111	
Notes									
					TD 38				

Amelia Baker 01/31/11
CLIENT REPRESENTATIVE DATE
Amelia Baker Brown Colwell CPA
NAME & TITLE

RONNIE ROWE **FRI 8/3/2011**
AEGL SITE SUPERVISOR **DATE**



Well Log

PROJECT NAME Lorain Landfill
PROJECT# 10111-105

DATE: 8/15/2011 WED

Drilling		Well Asbuilt	
EW62R2 WELL NUMBER OR NAME			
87 LINEAR FEET OF DRILLING			
87 LINEAR FEET OF COMPLETION			
0 LINEAR FEET OF ABANDONMENT			
730AM 145PM			
Weather conditions: SUNNY			
Site conditions:			
Rig hrs:			
Service: Rakdiator Grease			
NOTES:			
1.5 HRS DRILLING 79-87FT			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
730AM	20.9	0	0					
830AM	20.9	0	0					
930AM	20.9	0	0	0-10	SOIL	NONE	dry	NONE
1030AM	20.9	0	0	10-20	HHT	moderate	DRY	71
1130AM	20.9	0	0	20-30	HHT	moderate	DRY	87
1230PM	20.9	0	0	30-40	HHT	slight	DRY	104
145AM	20.9	0	0	40-50	HHT	moderate	dry	107
				60-70	HHT	moderate	dry	118
				70-80	HHT	HIGH	WET	117
				80-87	HHT	HIGH	WET	85
Notes WEATHER								
NICE								

[Signature] 4/16/11
AGENT REPRESENTATIVE DATE
[Signature] RONNIE ROWE
NAME & TITLE

RONNIE ROWE WED 8/15/2011
AEGLE SITE SUPERVISOR DATE



Well Log

PROJECT NAME	<u>Lorain Landfill</u>
PROJECT#	10111-105

DATE: 6/16/2011 THUR

Drilling		Well Asbuilt	
TEWSR WELL NUMBER OR NAME			
77 LINEAR FEET OF DRILLING		surface 899 4 foot Clean on site soil Bentonite 2 feet hydrated TRASH @ 4FT Length of Solid below surface 20'	
77 LINEAR FEET OF COMPLETION		clean on site clay backfill Bentonite 2 feet hydrated clean on site clay backfill 1 ft Isolation Ring Perf Length of Gravel Pack 59 Length of Perf .Pipe 56 style of pipe 6" Sdr-11 hdpe Bore diameter 36" well bore Bottom of bore 77	
0 LINEAR FEET OF ABANDONMENT			
700AM	1115AM		
Weather conditions: COOL			
Site conditions:			
Rig hrs:			
Service:	Radiator Grease		
NOTES:			
74-77 VERY WET			

Monitoring Log				Well Boring Log				
Time	OXYGEN	H ₂ S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
700AM	20.9	0	0					
800AM	20.9	0	0					
900AM	20.9	0	0	0-10	HHT	slight	dry	77
1000AM	20.9	0	0	10-20	HHT	moderate	DRY	100
1116AM	20.9	0	0	20-30	HHT	moderate	DRY	83
				30-40	HHT	slight	DRY	89
				40-50	HHT	moderate	dry	113
				60-70	HHT	moderate	WET	112
				70-77	HHT	HIGH	WET	100
Notes	WEATHER							
	COOL,LATE RAIN							

CLIENT REPRESENTATIVE 6/18/11 DATE
 NAME & TITLE Keith A. Bourn (owner) CPA

RONNIE ROWE **THU 6/16/2011**
AEGL SITE SUPERVISOR **DATE**

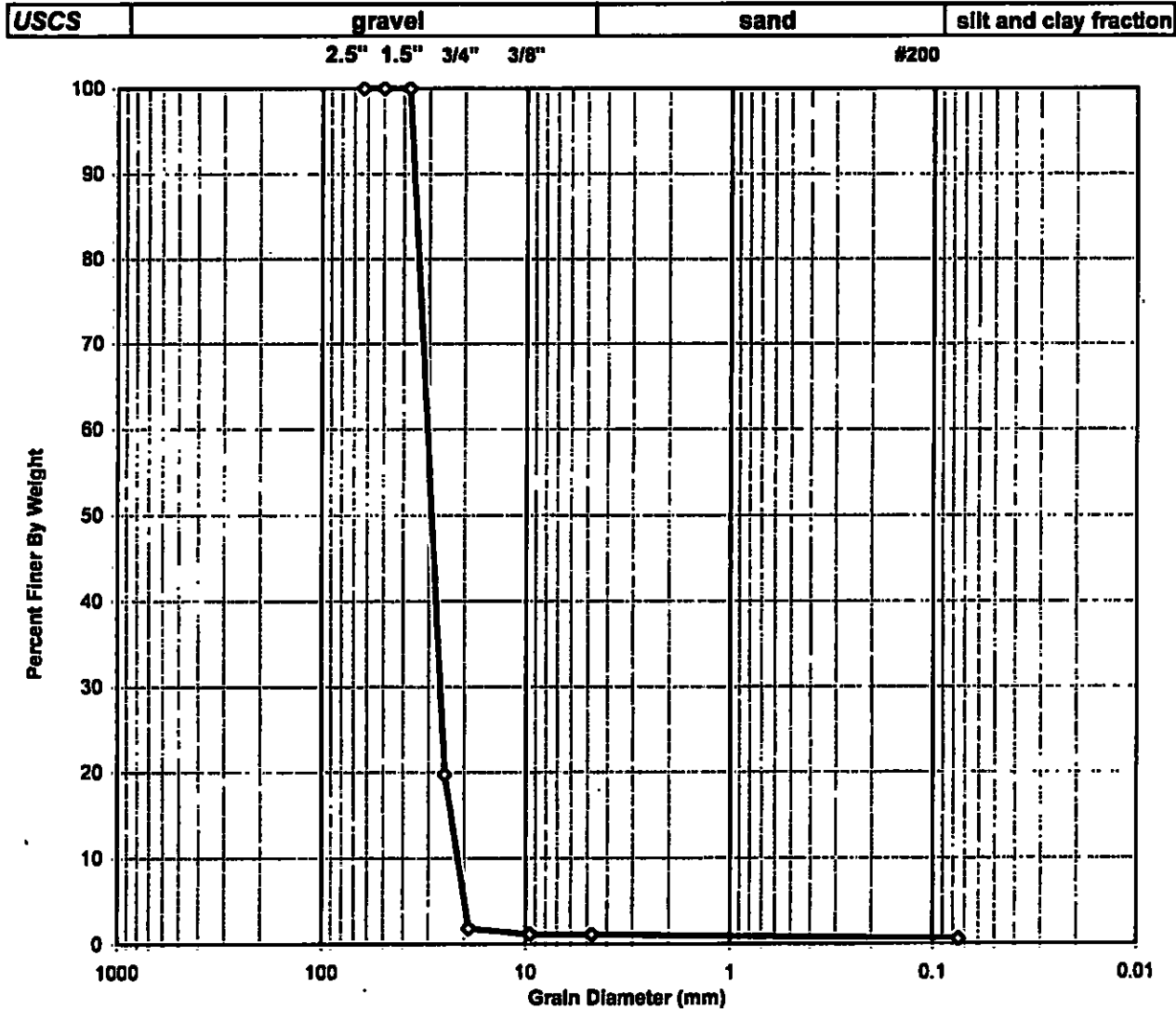
Appendix F: No. 4 Stone Laboratory Results

**WASH SIEVE ANALYSIS
AASHTO # 4 (ASTM C136-06)**

Client **BROWN AND CALDWELL**
Client Reference **LORAIN II**
Project No. **2011-143-01**
Lab ID **2011-143-01-01**

Boring No. **#4 STONE**
Depth(ft.) **NA**
Sample No. **S-1**

Color **BROWN**



USCS Symbol **GP**

USCS Classification **POORLY GRADED GRAVEL**

D60 = 30.64004

D30 = 26.33195 CC = 1.050684

D10 = 21.53795 CU = 1.422608

Tested By **JP** Date **3/30/11** Checked By **KC** Date **3-30-11**

WASH SIEVE ANALYSIS **AASHTO # 4 (ASTM C136-06)**

Client	BROWN AND CALDWELL	Boring No.	#4 STONE
Client Reference	LORAIN II	Depth(ft.)	NA
Project No.	2011-143-01	Sample No.	S-1
Lab ID	2011-143-01-01		

Color **BROWN**

Tare No.	B	Wt. of Dry Specimen (gm)	14876.00
Wt. Tare + DS.(Pre-Wash)	16806.00	Wt. of + #200 Specimen(gm)	14807.00
Wt. Tare + Dry, Washed specimen	16737.00	Wt. of - #200 Specimen(gm)	69.00
Wt Tare	1930.00		
Wt. Dry, Washed specimen	14807.00		

Total Wt. Retained After Sieving **14802.59**

% Difference Wt. Dry, Washed specimen vs Total Wt. Retained After Sieving **0.0**
 Note: % Difference must not be more than 0.3

Sieve	Sieve Opening (mm)	Wt. of Material Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
2 1/2"	63.0	0	0.0	0.0	100.0
2"	50.0	0	0.0	0.0	100.0
1 1/2"	37.5	0	0.0	0.0	100.0
1"	25.0	11942	80.3	80.3	19.7
3/4"	19.0	2663	17.9	98.2	1.8
3/8"	9.5	99.87	0.7	98.8	1.2
#4	4.75	3.92	0.0	98.9	1.1
# 200	0.075	85.35	0.6	99.4	0.6
Pan	-	8.45	0.1	99.5	-

Tested By **JP** Date **3/30/11** Checked By **KC** Date **3-30-11**

page 2 of 2

DCN: CT-S42 C Date: 10/31/07 Revision: 4

C:\MSOFFICE\Excel\Print\QW\14856 XL.SJSheet1

CARBONATE CONTENT
ASTM D 3042-03 (SOP S-55)
pH 4.0

Client	BROWN AND CALDWELL	Boring No.	#4 STONE
Client Reference	LORAIN II	Depth(ft.)	NA
Project No.	2011-143-01	Sample No.	S-1
Lab ID	2011-143-01-01		
Visual Description	BROWN STONE		

Washed and Dried Specimen (+ #200 Material)

Tare No.	969
Wgt. Tare (gm)	103.38
Weight of Washed, Dry Specimen and Tare Before Acid Wash (gm)	692.93
Weight of Washed, Dry Specimen and Tare After Acid Wash (gm)	688.20
Weight of dry Specimen before acid wash (gm)	589.55
Weight of dry Specimen after acid wash (gm)	584.82

Carbonate Content	0.8%
--------------------------	-------------

Note: *Sampling for this test is done in accordance with Sampling Section of Test Method
ASTM C 136 and D 3042 Sections 6.1.1 and 6.1.2*

Tested By **KBL** Date **3/30/11** Checked By **KL** Date **4-6-11**
page 1 of 1 DCN: CT-S47 DATE: 6/6/01 REVISION: 1 \\Gooserver\data drive\Excel\Excel Qa\Spreadsheets\CARBONT.XLS\Sheet1

Appendix G: Geosynthetics Test Results

Geomembrane Trial Weld Summary

Geomembrane Repair Summary

Geomembrane Trial Weld Summary

Project Name: Lorain County II Landfill: 2011 GCCS Phase 1 Construction

CQA Monitor: Janet Todia

Project Number: 140980

Test No.	Date	Time	Weather (Cloudy/ Sunny)	Amb. Temp. (° F)	Welder I.D.	Machine Number	Temp. Settling/ Speed	Weld Type F/E	PEEL (ppi)						SHEAR (ppi)			Test Result (P/F)	Comments
									Outside Weld			Inside Weld			1	2	3		
									1	2	3	1	2	3					
1	6/16/11	0800	Cloudy	70	PX5061	G53	500°F	E	N/A	N/A	N/A	99	122	114	162	163	169	P	
2	6/16/11	1300	Cloudy	78	PX5061	G53	500°F	E	N/A	N/A	N/A	100	119	120	159	157	161	P	
1	6/17/11	0830	Sunny	71	PX5061	G53	500°F	E	N/A	N/A	N/A	89	105	164	161	149	154	P	
2	6/17/11	1300	Sunny	79	PX5061	G53	500°F	E	N/A	N/A	N/A	116	125	92	121	105	156	P	
3	6/17/11	1700	Sunny	82	PX5061	G53	500°F	E	N/A	N/A	N/A	119	121	126	117	133	158	P	
1	6/18/11	0845	Sunny	79	PX5061	G53	500°F	E	N/A	N/A	N/A	124	126	124	122	151	161	P	
1	6/20/11	0840	Sunny	78	PX5061	G53	500°F	E	N/A	N/A	N/A	89	110	130	142	152	147	P	
2	6/20/11	1300	Sunny	83	PX5061	G53	500°F	E	N/A	N/A	N/A	88	91	88	70	81	83	P	
1	6/21/11	0745	Sunny	86	PX5061	G53	500°F	E	N/A	N/A	N/A	92	96	92	78	79	88	P	

Geomembrane Repair Summary

Project Name: Lorain County II Landfill: 2011 GCCS Phase 1 Construction

CQA Monitor: Janet Todla

Project Number: 140980

Repair Number	Date	Time	Seam/ Panel	Operator/ Machine	Repair Location		Description	Size of Repair	Vacuum Test Date	Vacuum Test Results (P/F)
					North	East				
EW-155R	6/16/11	1026	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/16/11	P
EW-1AR	6/16/11	1145	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/16/11	P
EW-91AR	6/16/11	1300	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/16/11	P
EW-91AR (abandon bore)	6/17/11	0850	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-120R2	6/17/11	1115	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-122R	6/17/11	1210	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-141R	6/17/11	1420	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
TEW-3R	6/17/11	1540	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-143R	6/17/11	1645	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-145R2	6/17/11	1840	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/17/11	P
EW-85R	6/18/11	0910	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/18/11	P
EW-81R	6/18/11	1032	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/18/11	P

Repair Number	Date	Time	Seam/ Panel	Operator/ Machine	Repair Location		Description	Size of Repair	Vacuum Test Date	Vacuum Test Results (P/F)
					North	East				
EW-78R	6/18/11	1145	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/18/11	P
EW-107R	6/20/11	1140	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/20/11	P
EW-22R	6/20/11	1345	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/20/11	P
EW110R	6/20/11	1430	N/A	Rigoberto Arias	N/A	N/A	Boot repair	4' x 4'	6/20/11	P
EW-15	6/20/11	1545	N/A	Rigoberto Arias	N/A	N/A	Boot repair at base of lateral from cap project	4' x 4'	6/20/11	N/A
EW-14	6/21/11	0950	N/A	Rigoberto Arias	N/A	N/A	Pinhole leak from cap project	4' x 4'	6/21/11	N/A

Appendix H: Air Monitoring Results

Air Monitoring Form

Page 1 of 1

Instructions: Complete this form immediately prior to project start.

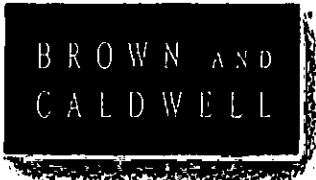
Name of Project/Site: <u>Lorain II 2011 Phase I Construction</u>		Project No: <u>140980</u>	
Project/Site Location: <u>Abellin, OH</u>			
Employee Performing Air Monitoring: (Print and Sign): <u>Janet A. Todia</u>		Date: <u>4/21/11</u>	
Instrument(s)			
Manufacturer: <u>V Rae</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No			
Remarks:			
Monitoring Data			
Time	Location and Activity	PIPID (ppm)	Multi-Gas Detection O ₂ %LEL H ₂ S CO
0800	RW 158 drilling	—	19.9 1 0 0
0815	"	—	19.9 1 0 0
0832	"	—	19.9 1 0 0
0847	"	—	20.0 0 0 0
0905	"	—	19.9 1 0 0
0920	"	—	19.9 2 0 0
0935	"	—	19.9 0 0 0
0950	"	—	20.0 0 0 0
1000	"	—	20.0 0 0 0
1015	"	—	20.0 0 0 0
1030	"	—	20.0 0 0 0
1045	"	—	19.8 2 0 0
1105	"	—	19.9 2 0 0
1125	"	—	19.9 1 0 0
1140	"	—	20.0 2 0 0
1200	"	—	19.9 0 0 0
1215	"	—	19.9 0 0 0
1235	"	—	20.0 0 0 0
1255	RW 158 well installation	—	19.9 0 0 0
1310	"	—	20.0 0 0 0
1325	"	—	20.0 0 0 0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lot 11 II 2011 GCNS Phase I Remediation</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Oberlin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Janet A. Todia</u> <i>Janet A. Todia</i>		Date: <u>4/22/11</u>					
Instrument(s)							
Manufacturer: <u>V Rae</u>	Model: <u>H gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0805	drilling kW 149	—	—	20.5	2	0	0
0825	"	—	—	20.1	5	0	0
0840	"	—	—	19.9	5	0	0
0900	"	—	—	20.0	2	0	0
0915	"	—	—	20.0	2	0	0
0930	"	—	—	20.0	1	0	0
0945	"	—	—	20.0	2	0	0
1000	"	—	—	20.0	1	0	0
1020	"	—	—	20.0	0	0	0
1045	"	—	—	19.9	1	0	0
1100	drilling complete; set well 149	—	—	20.0	0	0	0
1115	"	—	—	20.9	0	0	0
1125	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1200	"	—	—	20.0	0	0	0
1215	"	—	—	20.0	0	0	0
1225	"	—	—	20.0	0	0	0
1245	"	—	—	20.0	0	0	0
1300	"						

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lorain II GCDS Phase I Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Obertin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Janet A. Todia</u>		Date: <u>7/29/11</u>					
Instrument(s)							
Manufacturer: <u>V Rae</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0720	drilling BW40R2	—	—	21.4	0	0	0
0735	"	—	—	21.4	0	0	0
0745	"	—	—	21.4	0	0	0
0800	"	—	—	21.0	0	0	0
0815	"	—	—	21.4	0	0	0
0830	"	—	—	20.6	0	0	0
0845	"	—	—	20.5	0	0	0
0900	"	—	—	20.1	0	0	0
0915	"	✓	—	20.1	0	0	0
0920	"	—	—	20.5	1	0	0
0930	"	—	—	20.1	0	0	0
0945	"	—	—	20.5	1	0	0
1000	"	—	—	20.5	2	0	0
1015	"	—	—	20.5	1	0	0
1030	"	—	—	20.5	1	0	0
1045	so well BW40R2	—	—	20.1	2	0	0
1100	"	—	—	20.5	1	0	0
1115	"	—	—	20.1	2	0	0
1130	"	—	—	20.5	1	0	0
1145	"	—	—	20.1	2	0	0
1215	Trench BW158 to 154	—	—	20.1	1	0	0



Air Monitoring Form

Page 2 of 2

Instructions: Complete this form immediately prior to project start.

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Locan II GDS Phase I Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Ueberlin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Shwet A Todia</u> <i>Shwet A Todia</i>		Date: <u>4/30/11</u>					
Instrument(s)							
Manufacturer: <u>V Rae</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0710	drill RW39R	—	—	20.1	1	0	0
0730	"	—	—	20.5	2	0	0
0745	"	—	—	20.1	0	0	0
0800	"	—	—	20.0	0	0	0
0815	"	—	—	20.0	0	0	0
0830	"	—	—	20.1	0	0	0
0847	"	—	—	20.5	0	0	0
0903	"	—	—	20.5	0	0	0
0915	"	—	—	20.1	0	0	0
0932	"	—	—	20.1	0	0	0
0946	"	—	—	20.5	0	0	0
1000	"	—	—	20.1	1	0	0
1015	"	—	—	20.5	0	0	0
1032	"	—	—	20.5	0	0	0
1045	"	—	—	20.1	0	0	0
1104	"	—	—	20.1	0	0	0
1123	begin set well RW39R	—	—	20.5	0	0	0
1141	"	—	—	20.1	0	0	0
1157	Set well RW39R	—	—	20.5	0	0	0
1215	"	—	—	20.5	0	0	0
1236	"	—	—	20.5	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site:

Lorain I Header Regrade

Project No:

140980.007

Project/Site Location:

Oberlin, OH

Employee Performing Air Monitoring:
(Print and Sign)

Robert H. Todia [Signature]

Date:

5/9/11

Instrument(s)

Manufacturer:

VPro

Model:

4 gas meter

Manufacturer:

Model:

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0830	Lorain I Regrade header/trench	—	—	20.9	0	0	0
0845	" (near well 67)	—	—	20.9	2	0	0
0903	"	—	—	20.9	2	0	0
0915	"	—	—	20.8	1	0	0
0930	"	—	—	20.9	2	0	0
0943	"	—	—	20.5	2	0	0
1000	"	—	—	20.9	2	0	0
1017	"	—	—	20.5	1	0	0
1030	"	—	—	20.5	2	0	0
1043	"	—	—	20.5	2	0	0
1100	"	—	—	20.5	2	0	0
1115	"	—	—	20.5	1	0	0
1130	"	—	—	20.9	1	0	0
1144	"	—	—	20.5	2	0	0
1200	"	—	—	20.9	2	0	0
1213	"	—	—	20.9	2	0	0
1230	"	—	—	20.9	1	0	0
1233	Leave Lorain I (lunch)						
1500	return to Lorain I	—	—	20.5	2	0	0
1517	" (near well 71)	—	—	20.5	1	0	0
1530	"	—	—	20.5	1	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lorain II Phase 2 GCES Construction</u>		Project No: <u>140980</u>					
Project Location: <u>Obelisk, OH</u>							
Employee Performing Air Monitoring (Print and Sign): <u>Imet A. Todia</u>		Date: <u>5/10/11</u>					
Instrument(s)							
Manufacturer: <u>V Rae</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0750	BW148	—	—	20.5	0	0	0
0810	"	—	—	20.1	0	0	0
0830	"	—	—	20.1	0	0	0
0845	BW145R	—	—	20.1	0	0	0
0900	"	—	—	20.1	0	0	0
0920	BW224	—	—	20.1	1	0	0
0935	"	—	—	20.5	1	0	0
0945	BW148	—	—	20.5	1	0	0
1010	Lorain II header (wall 67)	—	—	20.1	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.5	0	0	0
1300	trenching air + force main BW148	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1330	"	—	—	20.5	0	0	0
1345	"	—	—	20.5	0	0	0
1530	trenching air + force main BW148	—	—	20.5	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Locan II LF Phase I</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Marlin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Julie Mcowan Julie Mcowan</u>		Date: <u>5/11/11</u>					
Instrument(s)							
Manufacturer: <u>Rea Systems</u>	Model: <u>V-Rea</u>	Manufacturer: <u>Klien tools</u>	Model: <u>IR1000</u>				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0830	Excavation a EW 149	0	0	20.9	0	0	0
0845	↓	0	0	20.9	0	0	0
0900	Drilling TEW-3R	0	0	20.9	0	0	0
0915		0	0	20.9	0	0	0
0930		0	0	20.9	0	0	0
0945		0	0	20.9	0	0	0
1000		0	0	20.9	0	0	0
1015		0	0	20.9	0	0	0
1030		0	0	20.9	0	0	0
1045		0	0	20.9	0	0	0
1100		0	0	20.9	0	0	0
1115		0	0	20.9	0	0	0
1130		0	0	20.9	0	0	0
1145		0	0	20.9	0	0	0
1300		0	0	20.9	0	0	0
1315		0	0	20.9	0	0	0
1330		0	0	20.9	0	0	0
1345		0	0	20.9	0	0	0
1400		0	0	20.9	0	0	0
1415		0	0	20.9	0	0	0
1430	↓	0	0	20.9	0	0	0



Air Monitoring Form

Page 1 of 2

Instructions: Complete this form immediately prior to project start.

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Loran II GCs Phase I Construction</u>		Project No: <u>140980</u>	
Project/Site Location: <u>Obadina, OH</u>			
Employee Performing Air Monitoring: (Print and Sign): <u>Jared A. Todia</u> <u>[Signature]</u>		Date: <u>5/13/11</u>	
Instrument(s)			
Manufacturer: <u>V Rae</u>	Model: <u>H gas meter</u>	Manufacturer:	Model:
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No			
Remarks:			

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0715	Drilling BW141R	—	—	20.8	0	0	0
0730	"	—	—	21.0	2	0	0
0745	"	—	—	21.3	2	0	0
0800	"	—	—	21.2	1	0	0
0815	"	—	—	21.2	2	0	0
0830	"	—	—	21.2	1	0	0
0845	"	—	—	21.0	2	0	0
0900	"	—	—	21.2	1	0	0
0915	"	—	—	21.2	2	0	0
0930	"	—	—	21.2	1	0	0
0938	need to replace drill line	—	—	21.2	2	0	0
1017	back to drilling BW141R	—	—	21.2	1	0	0
1028	"	—	—	21.5	0	0	0
1046	"	—	—	21.2	0	0	0
1100	"	—	—	21.2	0	0	0
1115	"	—	—	21.2	0	0	0
1130	"	—	—	21.2	1	0	0
1200	"	—	—	21.2	2	0	0
1216	"	—	—	21.2	1	0	0
1232	"	—	—	21.2	2	0	0
1245	"	—	—	21.2	2	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Western II GCS Phase I Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Oberlin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>James A. Todia</u>		Date: <u>5/23/11</u>					
Instrument(s) <u>4 gas meter</u>							
Manufacturer: <u>Vkoe</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
1245	RW155 trenching to RW154	—	—	20.9	0	0	0
1304	"	—	—	20.7	0	0	0
1315	"	—	—	20.7	0	0	0
1337	"	—	—	20.8	0	0	0
1346	leakwater outflow east side	—	—	20.7	0	0	0
1400	slope near 24" header	—	—	20.7	0	0	0
1413	(not in waste)	—	—	20.8	0	0	0
1430	"	—	—	20.8	0	0	0
1445	"	—	—	20.8	0	0	0
1500	"	—	—	20.5	0	0	0
1517	"	—	—	20.5	0	0	0
1532	"	—	—	20.5	0	0	0
1545	"	—	—	20.5	0	0	0
1610	"	—	—	20.5	0	0	0
1630	"	—	—	20.5	0	0	0
1645	"	—	—	20.5	0	0	0
1505	"	—	—	20.8	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lorain II GCES Phase 2 Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Shelton, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Frank A. Todia</u>		Date: <u>5/23/11</u>					
Instrument(s)							
Manufacturer: <u>V-Rac</u>	Model: <u>Hgas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0730	LR7 tie in	—	—	20.9	0	0	0
0745	"	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0832	"	—	—	20.9	0	0	0
0845	"	—	—	20.8	0	0	0
0904	BW 153 trenching to BW 154	—	—	20.8	0	0	0
0915	"	—	—	20.8	0	0	0
0932	"	—	—	20.7	0	0	0
0945	LR7 tie in	—	—	20.8	1	0	0
1000	"	—	—	20.8	0	0	0
1015	"	—	—	20.8	1	0	0
1030	"	—	—	20.8	1	0	0
1045	"	—	—	20.8	1	0	0
1100	"	—	—	20.7	1	0	0
1115	"	—	—	20.8	1	0	0
1132	"	—	—	20.8	1	0	0
1145	"	—	—	20.8	1	0	0
1200	"	—	—	20.8	0	0	0
1215	pipe trenching no tie in until	—	—	20.9	0	0	0
1231	manual dig completed tomorrow	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Kalam II GCDS Phase I Construction</u>		Project No: <u>140980</u>					
Project Site Location: <u>Obertown, OH</u>							
Employee Performing Air Monitoring: (Print and Sign) <u>James A. Todia</u>		Date: <u>5/25/11</u>					
Instrument(s)							
Manufacturer: <u>Vloc</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0830	CR7 manifold w side slope	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1017	"	—	—	20.9	0	0	0
1033	"	—	—	20.9	0	0	0
1048	"	—	—	20.9	0	0	0
1108	"	—	—	20.9	0	0	0
1200	trench air + force main TEW 3R	—	—	20.9	0	0	0
1218	"	—	—	20.9	0	0	0
1230	"	—	—	20.9	0	0	0
1245	"	—	—	20.9	0	0	0
1300	"	—	—	20.9	0	0	0
1355	leachate vault extrusion weld	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	"	—	—	20.9	0	0	0
1445	trench air + force main TEW 145R	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain II GCCS Phase I Construction		Project No: 140980					
Project Site Location: Berlin, OH							
Employee Performing Air Monitoring: (Print and Sign): Janet A. Todie		Date: 5/31/11					
Instrument(s)							
Manufacturer: V Rae	Model: H gas meter	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
1045	tranching air force main	—	—	20.9	0	0	0
1100	trw38 to EW65R (4" fm)	—	—	20.9	2	0	2
1115	LI	—	—	20.9	0	0	0
1130	LI	—	—	20.9	0	0	0
1147	LI	—	—	20.9	0	0	0
1210	LI	—	—	20.9	0	0	0
1230	LI	—	—	20.9	0	0	0
1245	LI	—	—	20.9	0	0	0
1300	LI	—	—	20.9	0	0	0
1315	LI	—	—	20.9	0	0	0
1330	LI	—	—	20.9	0	0	0
1345	LI	—	—	20.9	0	0	0
1400	LI	—	—	20.9	0	0	0
1415	LI	—	—	20.9	0	0	0

HS-18 REV. 08/2006

Instructions: Complete this form immediately prior to project start.

Name of Project/Site:

Brown II. GCCS Phase I Construction

Project No:

140980

Project Location:

Oberlin, OH

Employee Performing Air Monitoring:
(Print and Sign):

Janet A. Tedia [Signature]

Date:

6/13/11

Instrument(s)

Manufacturer:

V Rae

Model:

4 gas meter

Manufacturer:

Model:

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

TRUCK TRAFFIC ROAD XING @ 1730

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
1402	begin drilling AIR	—	—	20.9	0	0	0
1415	drill AIR	—	—	20.9	0	0	0
1430	"	—	—	20.9	0	0	0
1448	"	—	—	20.9	0	0	0
1505	"	—	—	20.9	0	0	0
1515	"	—	—	20.9	0	0	0
1530	"	—	—	20.9	0	0	0
1545	"	—	—	20.9	0	0	0
1600	"	—	—	20.9	0	0	0
1615	"	—	—	20.9	0	0	0
1630	"	—	—	20.9	0	0	0
1645	set casing AIR	—	—	20.9	0	0	0
1700	north excavation 12" header	—	—	20.9	2	0	2
1715	" road xing	—	—	20.9	5	0	4
1730	" TRUCK TRAFFIC	—	—	20.9	1	0	6
1745	"	—	—	20.9	1	0	7
1800	"	—	—	20.9	1	0	4
1815	"	—	—	20.9	1	0	5
1830	"	—	—	20.9	2	0	7
1845	"	—	—	20.9	0	0	5
1900	"	—	—	20.9	0	0	5

HS-16 REV. 06/2006

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lubin II Phase I Construction		Project No: 140980					
Project Site Location: Obertin, OH							
Employee Performing Air Monitoring: (Print and Sign): Frank A. Tadia <i>[Signature]</i>		Date: 6/4/11					
Instrument(s)							
Manufacturer: Vlae	Model: 4 gas meter	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0805	begin drill 91AR	—	—	20.9	0	0	0
0820	drill 91AR	—	—	20.9	0	0	0
0835	u	—	—	20.9	0	0	0
0850	u	—	—	20.9	0	0	0
0910	u	—	—	20.9	0	0	0
0925	u	—	—	20.9	0	0	0
0945	u	—	—	20.9	0	0	0
1000	u	—	—	20.9	0	0	0
1015	u	—	—	20.9	0	0	0
1030	u	—	—	20.9	0	0	0
1045	u	—	—	20.9	0	0	0
1100	u	—	—	20.9	0	0	0
1108	move 91AR 10' west of original location & drill	—	—	20.9	0	0	0
		—	—	20.9	0	0	0
1130	drill 91AR	—	—	20.9	0	0	0
1145	u	—	—	20.9	0	0	0
1200	u	—	—	20.9	0	0	0
1215	u	—	—	20.9	0	0	0
1230	u	—	—	20.9	0	0	0
1245	u	—	—	20.9	0	0	0
1300	u	—	—	20.9	0	0	0



Air Monitoring Form

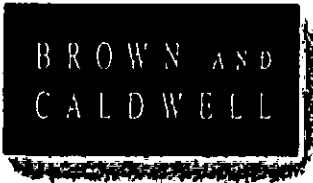
Page 1 of 2

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lorain IL GCDS Phase I Construction</u>		Project No: <u>140980</u>	
Project Site Location: <u>Obertin, OH</u>			
Employee Performing Air Monitoring: (Print and Sign): <u>Vernor A. Todia</u>		Date: <u>10/6/11</u>	
Instrument(s)			
Manufacturer: <u>Vlase</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No			
Remarks:			

Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0830	begin drill 120R2	—	—	20.9	0	0	0
0845	drill 120R2	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1200	"	—	—	20.9	0	0	0
1215	"	—	—	20.9	0	0	0
1230	"	—	—	20.9	0	0	0
1245	"	—	—	20.9	0	0	0
1300	"	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0

HS-18 REV. 06/2006

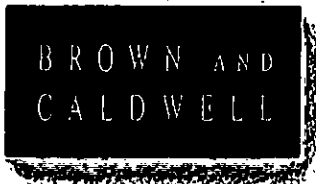


Air Monitoring Form

Page ____ of ____

Instructions: Complete this form immediately prior to project start.

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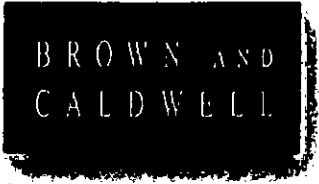


Air Monitoring Form

Page ____ of ____

Instructions: Complete this form immediately prior to project start.

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Air Monitoring Form

Page 1 of 2

Instructions: Complete this form immediately prior to project start.

[illegible]

HS-18 REV. 08/2006

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lorain II 2011 Phase 2 Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Charlin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>James A Todia [Signature]</u>		Date: <u>6/15/11</u>					
Instrument(s)							
Manufacturer: <u>V Rae</u>	Model: <u>H gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☐ Yes ☒ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	PI/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0745	LR4 tie in roadway	—	—	20.9	0	0	0
0800	()	—	—	20.9	0	0	0
0815	()	—	—	20.9	0	0	0
0830	()	—	—	20.9	0	0	0
1145	()	—	—	20.9	0	0	0
1245	U2R2 drilling well	—	—	20.9	0	0	0
1300	()	—	—	20.9	0	0	0
1315	()	—	—	20.9	0	0	0
1330	()	—	—	20.9	0	0	0
1400	()	—	—	20.9	0	0	0
1600	Start survey data	—	—	20.9	0	0	0
	W/ wellbore	—	—	20.9	0	0	0
1615	()	—	—	20.9	0	0	0
1630	()	—	—	20.9	0	0	0
1645	()	—	—	20.9	0	0	0
1700	()	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Orion II Phase I Construction</u>		Project No: <u>140980</u>					
Project/Site Location: <u>Obertin, OH</u>							
Employee Performing Air Monitoring: (Print and Sign): <u>Smart A. Todia</u>		Date: <u>6/17/11</u>					
Instrument(s)							
Manufacturer: <u>Vlasc</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks:							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0745	uncover 102R for geo	—	—	20.9	0	0	0
0800	repair	—	—	20.9	0	0	0
0820	"	—	—	20.9	0	0	0
0840	"	—	—	20.9	0	0	0
0900	BW 91AR now repair	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0935	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1020	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	RW 120R2 now repair	—	—	20.9	0	0	0
1300	RW 141R now repair	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	RW 143R now repair	—	—	20.9	0	0	0
1445	"	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0
1530	"	—	—	20.9	0	0	0
1545	TEL 13R now repair	—	—	20.9	0	0	0

[illegible]



Name of Project/Site: WALTON T 2011 ORES PROCESS EXAMINATION Project No: 140980

Project/Site Location: Oshtemo, MI

Employee Performing Air Monitoring: (Print and Sign): James A. Pella <i>James A. Pella</i>	Date: 6/18/11
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Manufacturer:	VRK	Model:	4 gal meter	Manufacturer:		Model:	
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Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

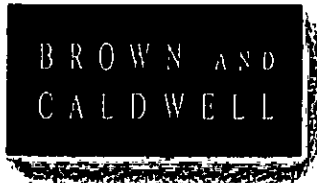
Remarks:

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: <u>Lafayette II 2011 Phase II Construction</u>		Project No: <u>140980</u>	
Project/Site Location: <u>Oberlin, OH</u>			
Employee Performing Air Monitoring: (Print and Sign): <u>Robert A. Tedia</u>		Date: <u>6/20/11</u>	
Instrument(s)			
Manufacturer: <u>VROC</u>	Model: <u>4 gas meter</u>	Manufacturer:	Model:
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No			
Remarks:			

Monitoring Data							
Time	Location and Activity	PID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0915	BW107R bore repair	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1020	"	—	—	20.9	0	0	0
1040	"	—	—	20.9	0	0	0
1100	BW22R bore repair	—	—	20.9	0	0	0
1225	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	BW110R bore repair	—	—	20.9	0	0	0
1445	"	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0
1515	BW15 riser (geo) repair	—	—	20.9	0	0	0
1530	"	—	—	20.9	0	0	0
1545	"	—	—	20.9	0	0	0
1600	"	—	—	20.9	0	0	0
1615	"	—	—	20.9	0	0	0



Air Monitoring Form

Page 1 of 1

Instructions: Complete this form immediately prior to project start.

[illegible]

Appendix I: Pipeline Pressure Test Results

2011 GCCS - Phase 1 Construction Certification Report - Pipe Pressure Test Results

Date	HDPE Pipe Description	Length (feet)	Pressure (psi)	Time (hours)	Result (Pass/Fail)	Retest (Yes/No)
4/29/2011	6" SDR17	141	25	4	Pass	No
4/30/2011	2" SDR09 (air)	310	100	4	Pass	No
4/30/2011	2" SDR11 (forcemain)	310	75	4	Pass	No
5/9/2011	2" SDR09 (air)	300	100	4	Pass	No
5/9/2011	2" SDR11 (forcemain)	300	75	4	Pass	No
5/9/2011	4" SDR17	300	30	4	Pass	No
5/10/2011	2" SDR09 (air)	200	100	4	Pass	No
5/10/2011	2" SDR11 (forcemain)	200	75	4	Pass	No
5/10/2011	4" SDR17	200	30	4	Pass	No
5/11/2011	2" SDR09 (air)	210	100	5.5	Pass	No
5/11/2011	2" SDR11 (forcemain)	210	50	5.5	Pass	No
5/11/2011	6" SDR17	200	30	5.5	Pass	No
5/13/2011	2" SDR09 (air)	232	100	4	Pass	No
5/13/2011	2" SDR11 (force main)	232	50	4	Pass	No
5/13/2011	6" SDR17	31	25	4	Pass	No
5/24/2011	2" SDR09 (air)	336	100	6	Pass	No
6/1/2011	2" SDR09 (air)	500	100	4.5	Pass	No
6/1/2011	2" SDR11 (forcemain)	200	50	4.5	Pass	No
6/3/2011	6" SDR17	200	30	6	Pass	No
6/6/2011	2" SDR09 (air)	220	100	4	Pass	No
6/6/2011	2" SDR11 (forcemain)	220	50	4	Pass	No
6/6/2011	6" SDR17	300	30	4	Pass	No
6/7/2011	6" SDR17	280	30	12	Pass	No
6/9/11 - 6/10/11	12" SDR17	700	25.5	10	Pass	No
6/9/11 - 6/10/11	6" SDR17	200	30	10.5	Pass	No
6/9/11 - 6/10/11	6" SDR17	200	30	10.5	Pass	No
6/13/2011	6" SDR17	257	25	4	Pass	No
6/13/2011	6" SDR17	260	25	4	Pass	No
6/13/2011	6" SDR17	400	25	4	Pass	No
6/17/2011	6" SDR17	200	25	4	Pass	No
6/18/2011	6" SDR17	200	25	4	Pass	No