



October 27, 2009

Subject: City of Midland Landfill
Landfill Gas Collection and Control System Construction
Addendum #1

Gentlemen:

On behalf of the City of Midland (City), CTI and Associates, Inc. (CTI) presents this letter, including attachments, to serve as Addendum # 1 to the Project Manual (including Drawings) for Landfill Gas Collection and Control System (GCCS) Construction at the City of Midland Landfill (Landfill).

The following comments/clarifications are specific to the Drawings:

Sheet 2:

- Borrow areas for Soil Fill will come from the area north of Cells 15 & 16. Landfill roads used to access stockpiles or work areas shall be restored to original condition.
- Owner's Surveyor will provide survey control points for use by Contractor.
- Contractor can utilize numerous open areas on site for stockpiling construction materials. However, due to the large volume of activities planned for the site in the upcoming months, Contractor shall identify the area(s) they plan to use prior to material delivery.
- If deemed necessary, Contractor may utilize the Construction Entrance on the east side of the facility.

Sheet 3:

- Plan View, Survey information for the existing leachate/landfill gas interceptor trench can be found in Attachment A.
- Plan View, topographical information for Cells 14 & 15 will be updated prior to construction.
- Plan View, existing refuse fence located near the west edge of Cell 14 shall not be damaged. Contractor shall not disturb poles and shall work with the Owner to coordinate the temporary removal of netting to install gas lateral lines for remote wells in Cell 15.

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Sheet 4:

- Detail 1, LFG Collection Trench Detail, the geomembrane (supplied by Contractor) is centered above perforated sections of LFG Collection Pipe. The geomembrane is to reduce the potential for air intrusion into the GCCS. The geomembrane does not connect to a geomembrane cap.
- Detail 1, LFG Collection Trench Detail, the stone shall be a minimum of three feet thick.
- Detail 1, LFG Collection Trench Detail, the nonwoven geotextile layer shall be a minimum 6 oz/yd², it is intended to provide a separation layer between the stone and clay.
- Detail 1, LFG Collection Trench Detail, the lower two foot thick compacted clay component to the certified cap in Cells 1 – 8 shall be restored utilizing clean clay material found north of Cells 15 and 16. Existing vegetative and topsoil materials may be reused provided they are maintained free of waste.

Sheet 5:

- Plan View, Contractor shall hand locate the existing perimeter leachate management system where necessary to prevent damage.
- Plan View, Contractor shall note that the existing network of passive wells are connected via a web of small diameter pipes and geotextile wrapped stone pathways located just below the cap system. This network can be decommissioned in place below grade.
- Detail 1, MH 8 shall be included in the list. Similar repair may need for MH 2, 3, and 4 which do not have pumps.

Sheet 6:

- Detail 2, Well Head, based on our conversations with Landtec, the Accu-Flo wellhead is manufactured in the United States. Contractor is responsible for verifying this information independently.
- Detail 7, Typical Gas Header, granular materials are limited on-site, material identified as “select on-site soil” or “on-site soil bedding” shall meet the requirements of MDOT Class II and shall be supplied and managed by Contractor. Payment for this material shall be included in the applicable unit prices.

Sheet 8:

- Detail 3, Blower/Flare Skid Detail, Contractor shall initiate purchase of Dual Contained Lift Station and Condensate Knock-out immediately upon notification of Award of Contract. Owner is currently coordinating with GTE Contractor so that construction of Compressor Building can be delayed until these components are installed. **These components will need to be installed in February 2010.**

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Sheet 8:

- Details, granular materials are limited on-site, material identified as “select on-site soil” or “on-site soil bedding” shall meet the requirements of MDOT Class II and shall be supplied and managed by Contractor. Payment for this material shall be included in the applicable unit prices.

Sheet 10:

- Details 1 and 2: The upper section of the VDW well was constructed using a 18” x 6” PVC SCH 80 Eccentric Reducer which is a 18” diameter x 4.5 foot long pipe with a 6” diameter opening located on one side.

Sheets 11 and 12:

- Plan View, Contractor shall understand that the air and condensate pipes shown on these drawings are primarily preventative in nature and are not expected to be needed for condensate management at this time. In the event that the Owner desires to find areas to reduce project costs, the lineal footage represented on these drawings will most likely be eliminated. No increase/allowance in bid item prices (laterals, headers, or remaining air/leachate lines) will be given as a result of this change.

The following comments/clarifications are specific to the Project Manual (See Attachment B):

Section I – Bid Forms

- Section 8, Bid Proposal Form, in an effort to expedite award of this Contract while fully exploring the Owners options for the execution of the overall Integrated Utilities Improvement Project, the Owner may opt to exclude this portion of the project from the State Revolving Fund (SRF) project. Because of this two options are now included in this section. Option 1 prices shall reflect inclusion of the Davis-Bacon Requirements and the ARRA Buy American clauses, Option 2 shall be priced with no Davis-Bacon or ARRA requirements in force. (an updated Bid Form Section is provided)
- Section 8, Bid Proposal Forms were revised as following:
 - 4.2 and 4.2a: increase value to 1,495 ft
 - 4.3 and 4.3a: strike out this item
 - 9.1 and 9.1a: increase value to 2
 - 9.2 and 9.2a: strike out this item
 - Add Item 29 Repair existing manholes

Technical Specification Section 01025 Measurement and Payment: add following paragraphs at end of the document:

2.41 ITEM no. 29 – Manhole repairs in Cells 1-13

- A. The unit price for this item shall be payment in full for manhole repairs in Cells 1-13, in accordance with the Plans and Specifications, and in accordance with the lines, details, and notes shown on the Drawings.
- B. The Contractor will ensure that; (1) repairs are completed at the locations and depths shown on the Drawings, or specified by the Engineer.
- C. The unit price will fully compensate the Contractor for supplying, fabricating, testing and installing all necessary fittings, gas/vapor barrier, and seals, as indicated by the Drawings.
- D. The unit price will fully compensate the Contractor for the maintenance and repair of any disturbed areas in accordance with the Drawings and Project Specifications. Restoration shall include final cap, topsoil, seed, and mulch.
- E. No additional compensation will be considered for any of the following: equipment decontamination, delays due to wet conditions, delays caused by the contractor or others.
- F. The unit price shall include any necessary excavation, backfill, and additional fill to ensure the upgrades are completed as shown on the Drawings.
- G. Payment for repairs of each manhole actually performed and within the limits specified will be measured by the Engineer.

The following comments/clarifications are general and apply to the project as a whole:

- 1. All bids are due to the City of Midland, Michigan by 2:00 p.m., local time, Tuesday, November 10, 2009 in the office of the City Clerk, City Hall, 333 West Ellsworth Street, Midland, Michigan, 48640-5132. No fax copies of the bid will be accepted. Immediately thereafter, all proposals will be publicly opened and read aloud. This date can not be moved back.
- 2. Attendance at the pre-bid meeting was not mandatory.
- 3. The City of Midland plans to make notification to all bidders of the project award by November 24, 2009.
- 4. All of the information included in a Bid response is subject to the “Freedom of Information Act” and may be disclosed in its entirety after the formal, public bid opening has been completed. Bid tabulations will be available at the City’s website, www.midland-mi.org, in the Purchasing section of the Fiscal Services Department under the City Government tab approximately two weeks after bid opening.
- 5. Pre-Construction meeting is tentatively scheduled for January 11, 2010. An earlier start date can be accommodated if the successful bidder submits all bonding and insurance documentation to the City and arranges for an alternate Pre-Construction Meeting time. The contractor shall state the proposed start date in their bid.
- 6. Bonds are required for this project as described in the Contract Documents, Letters of Credit will not be accepted.
- 7. There will be ten percent (10%) retainage on this contract. The terms of retainage are discussed in detail in Item 29 of the Instructions to Bidders.
- 8. All site contacts should go through Scott O’Laughlin. Weekly project progress and coordination meetings with Mr. O’Laughlin and the Engineering Team will be required.

9. The contractor is required to sign in at the front office each day they are working on site. (Please note how many people are working on site.)
10. Arrangements will be made to allow the Contractor access to the Site Monday through Friday (6:30 a.m. until 6:00 p.m.) and Saturday (7:00 a.m. until 3:30 p.m.). The City intends to have a representative on site at all times that the Contractor has personnel on site. For this reason, the Contractor must obtain permission from Mr. O’Laughlin, prior to scheduling or performing work outside this schedule.
11. Any waste excavated during construction shall be managed by the contractor and delivered to the landfill working face for disposal. All waste excavated prior to 4:00 pm shall be delivered to the working face the same day by 4:00 pm. The Landfill will designate the active area where the waste is to be dropped. Any waste excavated after site normal operating hours will need to be covered overnight and hauled to the working face the next morning.
12. The landfill has no security. Contractor is responsible for securing all of their equipment and supplies.
13. Contractor may use virtually any area on the site that does not impact daily landfill operations or impede landfill traffic. As there will be several projects at the Landfill, Contractor is expected to coordinate specific site usage with the Owner prior to usage.
14. Contractor equipment and personnel must yield to landfill traffic.
15. The landfill does not have facilities for washing or decontaminating contractor equipment. Any washing needed will have to be done in the active area of the landfill using a high-pressure, low-volume washer.
16. A City of Midland Contractor Safety Qualification Statement is required for the successful bidder. Copies of the Safety Declaration forms are included in the Project Manual (Supplements to Bid Forms, Page 6 of 6).
17. The contractor shall notify the site (Scott O’Laughlin) of any emergencies that occur while on site.
18. All Contractor employees that will be working within the limits of waste shall be 40 hour HAZWOPER trained and shall possess a current 8 hour refresher training certificate.
19. A solid guard is required to cover any open holes left unattended or open overnight. The contractor shall also minimize the length of open trenches and comply with all OSHA trenching requirements.
20. Any non-impacted liquids (rain water in pipe trench or cell, etc.) managed by the contractor can be pumped to the pond east of the construction area as directed and approved by Scott O’Laughlin. Impacted liquids (leachate) shall be managed within the respective area of the landfill where it is generated or disposed of directly in a sewer manhole.
21. Scott O’Laughlin and the CQA agent shall immediately be notified if any liner breaches occur. Any damage to the liner system, caused by the contractor, will be the responsibility of the contractor and will be repaired at no cost to City.

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22. The location of wells being drilled in the waste mass can not be altered in the field. If a well location needs to be altered, for any reason, the new location must be surveyed and the Owner's Engineer must verify the appropriate well depth in writing.
23. The City will provide initial survey control and certification surveying as described in the Contract Documents. The contractor is responsible for all other surveying.
24. Dust control is the contractor's responsibility.
25. If the Schedule Milestones are altered by the Owner or as a result of Work being performed by Others contracted directly with the Owner, the official schedule as it relates to the Contractors obligations (i.e. Liquidated Damages) will be adjusted accordingly.
26. Payroll Certifications are the responsibility of the Contractor. It is recommended that the Contractor take advantage of the current US Department of Labor Payroll Form (OMB Form No. 1215-0149, exp. 12/31/2011). The primary contractor shall submit the required paperwork, including subcontractor certifications, to the CTI Project Manager.
27. If interested, Blasy Electric, Inc. (www.blasyelectric.com) has recent experience with the site; Brad Blasy can be contacted at 989.631.6252. Additionally, Newkirk Electric has been retained by the Compressor Building Contractor to complete the upgrades required for the compressor building equipment; Ted Anton can be contacted at 231.724.4001.
28. Based on our information, the Landtec Accu-Flo Wellhead and the Asahi valves are manufactured in the United States. There is no requirement with regard to the origin of components or subcomponents in manufactured goods, as long as the manufacture of the goods occurs in the United States. That said, it remains the Contractor's responsibility to obtain actual Certification from the manufacturer.
29. While leachate levels are expected to be below the working area, Contractor shall be prepared to manage leachate encounters in a manner consistent with the project documents.
30. Electronic CAD files for the plan view drawings are available. Please contact CTI (bboenit@cticompanies.com) via email with this request.

Answers to Questions not addressed above:

1. Will the Contractor need to hire a Site Security subcontractor (ref. ITB 11/15 section 20H)?

This is up to the Contractor. The site is locked, but there is no other security.
2. Will this be a union project?

No, but the Contractor must adhere to the requirements of the Davis Bacon Act.
3. If not already existing, the Electric Utility Company will need to provide transformer, meter base, & disconnect at the existing electrical. This will need to be handled and paid for by the Owner, since the service will be in their name.

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Electric service available near the flare station is sufficient to accommodate the equipment being installed as a part of this contract. It should be noted that this service is also being upgraded, under a separate contract, to accommodate the needs of the proposed Compressor Building.

4. As part of the bid forms the Contractor is required to complete and return a “Contractor Safety Qualification Statement.” One of the check boxes asks if we have received and agree to follow the “City of Midland’s Contractor Safety Program.” We have not received this document; can you please provide?

A site specific safety meeting will be held at the landfill prior to construction. Contractor is directed to Specification Section 1501.

5. If Contractor is required to install Erosion control measures (silt fence, hay bales, check dams, etc.) please provide the quantities that Contractor should include for compliance with the Site’s SWPPP. Otherwise bids between Contractors will not be similar.

Contractor should provide adequate control to match their intended work plan. Sediment can not leave the work area.

6. Are Nitrile Seal ASAHI Butterfly valves acceptable for this project?

Contractor is directed to the Division 15 Specification Sections.

7. Specification section 15250 calls out insulating of all leachate system piping that is installed above the frost line. Does the leachate “system” include the air piping as well? If Contractor is to insulate leachate system piping, what length of buried piping in the trench should Contractors assume insulating so that similar bids can be provided between Contractors?

Contractor is directed to provide insulation and heat tracing to below the frost line as described in the Specifications. Air line piping will not require insulation.

8. Please provide a detail drawing or information on installation of “LFG Temporary Pipe” that is shown on Drawing # 3 as a dashed line.

LFG Temporary Laterals shall be placed in the same manner as the permanent lateral pipes.

9. The Project Manual calls out re-certification of the final cover. Will this be the Owner/Engineer’s responsibility?

Owner's Engineer will certify the Final Cover. Contractor shall assist Engineer in obtaining/completing all necessary tests.

10. Several of the detail drawings show Geomembrane and Geocomposite boots and skirts where features protrude above grade, listing them as part of Future Final Cover. Please confirm these features are not in Contract and not to be supplied by Contractor.

Yes, these items are not a part of this Contract.

11. The excavation for the Dual Contained Lift Station at the Flare area will be 20 feet deep and will be a major undertaking. Is there information available on groundwater levels in this area? Will dewatering be necessary?

Well/boring log data for wells located in this area are provided in Attachment C. It is not anticipated that the Contractor will encounter any significant amounts of perched liquid. However, previous cell construction has uncovered drain tiles from agricultural activities performed at the site when it was used for farming.

12. Will major filling operations be required to bring the flare area to grade and flat?

No.

13. Is heat tracing only required at the VDW wells and on the flare?

Yes, the VW wells will only be operated in the non-winter months. Contractor shall ensure there is a minimally invasive way for the Owner to relieve the vacuum lock in the condensate lines during the winter shut-down of these upgraded pumping wells.

14. Please provide a minimum 1 month extension of the Contract Timeframe, due to difficulty of achieving compaction / optimum moisture of clay in the Winter and Early Spring.

Please refer to the updated Project Schedule in Attachment A.

15. What is “properly” backfilled Item 3.2?

For the drilled and abandoned gas well in Cells 14 and 15, the well can be backfilled with the cuttings from the well and compacted with excavator bucket.

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For the drilled and abandoned gas well in Cells 9-13, the well can be backfilled with the cuttings from the well up to 3 feet below the bottom of clay in the final cap. A minimum of 3 feet of structure fill shall be required below the bottom of clay in the final cap.

16. Is there going to be a line item for AP4 pumps in the wells?

No. The pumps are included in Items 23 and 25.

17. Are branch saddles acceptable?

Engineer prefers using reduce tee for the connection. Electrofusion branch saddle is not acceptable. The butt fusion branch saddle is acceptable if the installation procedure is strictly following the manufacture instruction AND extrusion weld shall be made between branch saddle and main pipe.

Please acknowledge receipt of this Addendum (#1) with your bid as on page Bid Forms Page 2 of 8, Section 6, item A, line 1.

Sincerely,

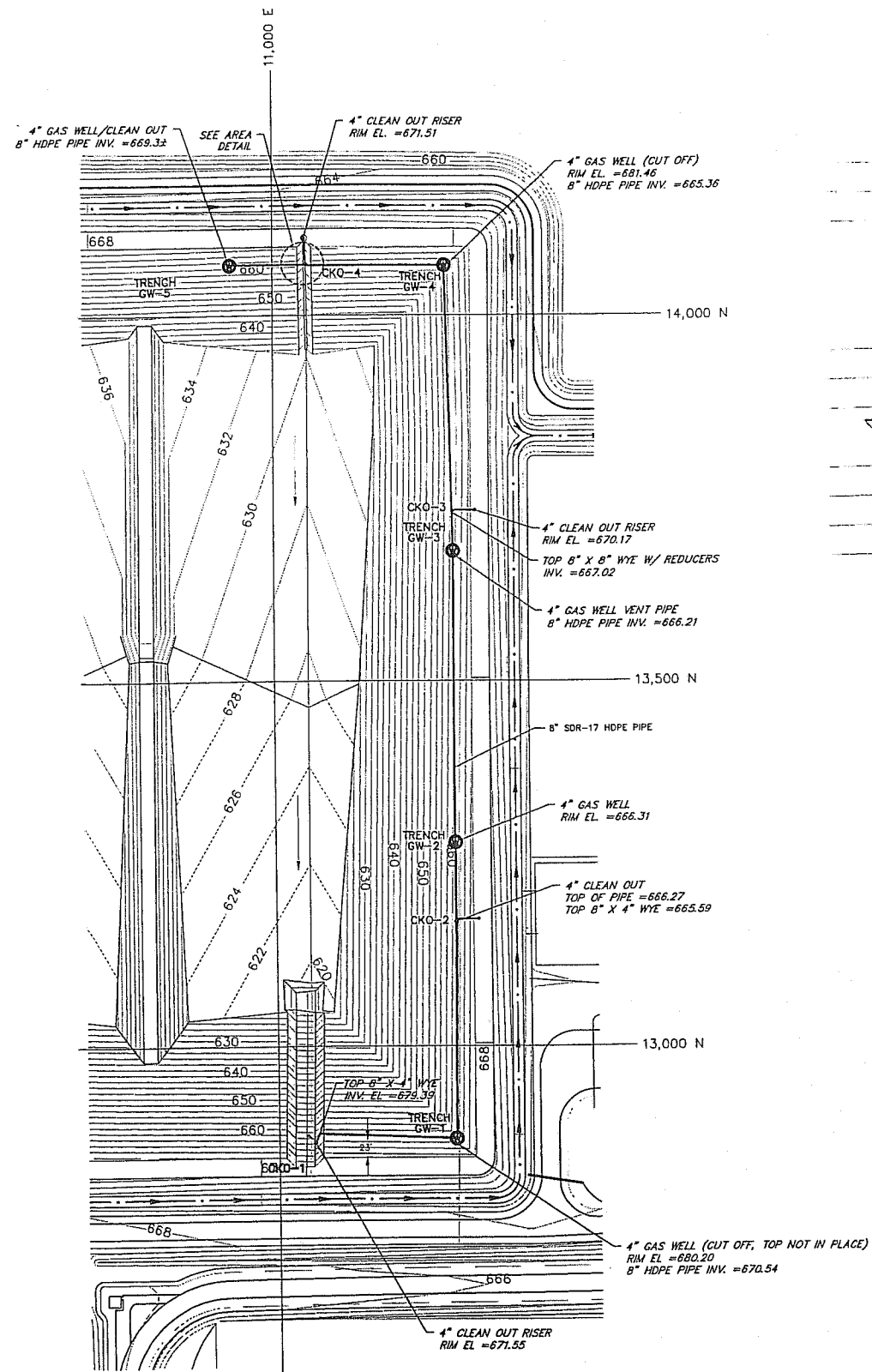
CTI and Associates, Inc.

Beth A. Benoit
Project Manager

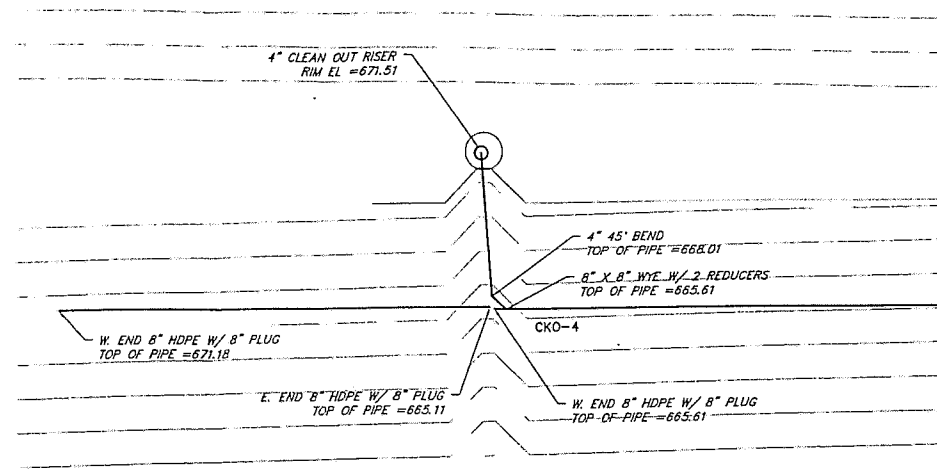
Cc: Mr. Scott O’Laughlin, City of Midland Landfill
File

Attachment A

Cell 14 Leachate/LFG Interceptor Survey Information



CELL 14 LEACHATE INTERCEPTOR LAYOUT



AREA DETAIL
SCALE: 1" = 20'

LENGTH OF PIPE

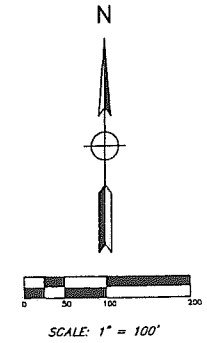
8" HDPE PIPE
CKO-1 TO CKO-4 = 1514'
CKO4 - GW-5 = 103'
TOTAL LENGTH = 1617'

VERTICAL DATUM

USED PREVIOUS VERTICAL CONTROL
SET BY CTH & ASSOCIATES ON 3-14-08

NOTE:

CONTOUR LINES ARE BASED FROM AN ELECTRONIC FILE
BY CTH & ASSOCIATES DATED MARCH 2008, PROVIDED BY THE CLIENT.



LEGEND

- ⊙ - GAS WELL
- - CLEANOUT



PREPARED BY:
JEFFREY E. WOOD
PROFESSIONAL SURVEYOR NO. 41115
230 S. WASHINGTON AVENUE
P.O. BOX 1689
SAGINAW, MICHIGAN 48605-1689
TEL. 415.989-754-4717
DRAWN BY: M.A. URSUY
DATE: 7/16/08
JOB NUMBER: 1170795G2008

AS-BUILT SURVEY FOR:
CATSKILL REMEDIAL CONSTRUCTING SERVICES, INC.
911 DIX STREET, SUITE C
OTSEGO, MI 49078

AS-BUILT SURVEY OF:
CELL 14
CITY OF MIDLAND
MIDLAND, COUNTY, MICHIGAN

1170795G2008
D-2659

Attachment B

Please use the following pages to replace the existing found in the
Project Manual GCCS Construction

- Bid Form
- Project Schedule

**CITY OF MIDLAND, MICHIGAN
INTEGRATED UTILITIES IMPROVEMENT PROJECT
GAS COLLECTION AND CONTROL SYSTEM CONSTRUCTION**

BID FORMS

1 PROJECT IDENTIFICATION

The Work of this project consists of constructing the Gas Collection and Control System at the City of Midland Landfill (Landfill). Work also includes upgrades to the leachate collection system in Cells 1 – 8. The Landfill, located at 4311 East Ashman Road, Midland, Michigan, 48642, is owned and operated by the City of Midland, Michigan.

2 THIS BID IS SUBMITTED TO

City of Midland, Michigan
Office of the City Clerk
333 West Ellsworth Street
Midland, Michigan 48640-5132

3 THIS BID IS SUBMITTED BY

Bidder's Name: _____

Bidder's Address: _____

Contact Name: _____

Telephone and Fax: _____

Email Address: _____

Bid Price: _____

4 GENERAL

The undersigned Bidder proposes and agrees, if this Bid is accepted by the Owner, to enter into an agreement with Owner of the form included in the Bid and Contract Documents. The Bidder agrees to perform and furnish all Work as specified or indicated in the Bid and Contract Documents for the Bid Price and within the Bid Times indicated in the Bid and Contract Documents and in accordance with all other terms and conditions of the Bid and Contract Documents.

5 BIDDER ACCEPTANCE

The Bidder accepts all of the terms and conditions of Bid and Contract Documents, including without limitation those dealing with the disposition of Bid Deposit. The Bid shall remain a firm offer, and subject to acceptance, for the time period specified in the Invitation to Bid. If a Notice

BIDDER: _____

to Proceed is issued, the Bidder will sign and deliver the required number of counterparts of the Agreement with all other documents required by the Bid and Contract Documents according to the procedures outlined in the Notice to Proceed.

6 BIDDER REPRESENTATION

A. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

1. Bidder has examined and carefully studied the Bid Documents and the following Addenda, receipt of all which is hereby acknowledged: (List Addenda by Number and Date)

Addendum No. 1 _____ Date: 10/27/09 _____

Addendum No. _____ Date: _____

2. Bidder has visited the Site and has become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance and/or furnishing of the Work.
3. Bidder is familiar with and is satisfied as to all federal, state, local, and any other rules and regulations that may affect cost, progress, performance and/or furnishing of the Work.
4. Bidder is aware of the general nature of the Work to be performed by the Owner, and others at the Site that relates to the Work for which this Bid is submitted as indicated in the Bid Documents.
5. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bid and Contract Documents with respect to Underground Facilities or surface structures and facilities at or contiguous to the Site. Bidder acknowledges that Bidder has obtained and carefully studied all reports and test data of conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified. Bidder acknowledges that such reports and drawings may not be Contract Documents and may not be complete for Bidder's purposes. Bidder has obtained and carefully studied (or assumed responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, Underground Facilities, or other) at or contiguous to the Site or otherwise which may affect cost progress, performance and/or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and/or procedures to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the schedule, price and other terms and conditions of the Bid and Contract Documents.
6. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bid and Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Bid Documents.
7. Bidder has given Owner written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Bid Documents and other related documents.

BIDDER: _____

Submission of a Bid implies that written resolutions made by the Owner are acceptable to Bidder, and the Bid Documents are sufficient to convey understanding of all terms and conditions for performing and furnishing all Work for which this Bid is submitted.

8. The undersigned person certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person and is not submitted in conformity with any agreement or rules of person; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the Owner. As used in this paragraph, the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

7 CONTRACT PRICE

- A. Bidder will complete the Work in accordance with the Bid and Contract Documents for the price(s) contained in the "Bid Proposal Form".
- B. Bidder acknowledges that quantities of Work to be done as specified in the "Bid Proposal Form" are based on approximations only and are given to facilitate the uniform comparison of Bids and to serve as a guide in preparing a Bid Deposit. The Owner does not expressly, or by implication, agree or guarantee that the actual amount of Work will correspond therewith. Bidder is aware that bid quantities are subject to change. Payment will be based on actual quantities, determined as provided in the Bid and Contract Documents.
- C. Work will be performed as Unit Price Work at a price specified in the "Bid Proposal Form". Unit Price Work is defined by paragraph 11.03 of the Standard General Conditions. Quantities of Work, whether increased or decreased, are to be performed at the Unit Prices set forth in the "Bid Proposal Form" and the Bid and Contract Documents.
- D. If design modifications after Award of Contract result in increases or decreases of quantities, the Contract Price will be adjusted on the basis of the Unit Prices specified in the "Bid Proposal Form" or on the list of equipment rental rates, included as specified in Section 10 below, as determined by the Owner. Adjustments are subject to acceptance by the Owner. Rejection of one or more adjustments will not invalidate acceptance of this Bid.
- E. An increase or decrease in the quantity of the Unit Price Item shall not be regarded as sufficient grounds for an increase or decrease in the unit price of the item or in the time allowed for the completion of the Work except as provided by the Unit Prices and in the Standard General Conditions.
- F. During the completion of the Work, the Owner may request additional related work to be performed by the Successful Bidder at the unit rates specified in the list of equipment rental rates attached to these Bid Forms. Additional related work may include, but is not limited to additional excavation or trenching near the Work area.
- G. Bidder acknowledges that Owner reserves the right to terminate the Work and the Contract if hazardous materials are encountered during performance of the Work. If the Owner terminates the Work due to hazardous materials, the Contractor will be paid for all Work performed until time of termination of Work, including mobilization and demobilization, at the Unit Prices specified in the "Bid Proposal Form".
- H. The City of Midland is exempt from State and Federal taxes. However, property purchased by a Contractor to be used in the construction, alteration, repair, or improvement of property owned by the City is taxable to the Contractor. Therefore, the price bid for contracts other

BIDDER: _____

than construction contracts must be exclusive of taxes and will be so construed. Construction contracts will be construed to include all applicable taxes unless the contract specifies otherwise.

- I. Bids shall include all delivery charges with terms of Freight Prepay – FOB Midland, Michigan.

BIDDER: _____

8 BID PROPOSAL FORM

City of Midland
 Integrated Utilities Improvement Project
 Landfill Gas Collection and Control System Construction

Bid Item No.	Item Description	Unit ¹	Quantity ²	Unit Price	Extended Price
Phase 1 Landfill Gas Collection System Construction					
1	Mobilization / Demobilization	LS	1		
2	Temporary Controls	LS	1		
3	Gas Well Installation				
3.1	Completed Well Installation	LF	1095		
3.2	Drilled and Abandoned - Refusal	LF	100		-
3.3	2" Wellhead Assembly (CES Landtec Accu-Flo or Equivalent)	EA	36		
3.4	Remote Wellhead Assembly	EA	18		
4	Header Piping and Laterals				
4.1	20-inch SDR-17 HDPE Pipe	LF	150		
4.2	18-inch SDR-17 HDPE Pipe	LF	1495		
4.3	16-inch SDR-17 HDPE Pipe	LF	0		
4.4	8-inch SDR-17 HDPE Pipe	LF	7335		
4.5	6-inch SDR-17 HDPE Pipe	LF	480		
4.7	Gas Extraction Manifold	LS	1		
5	LFG Horizontal Collection Trench				
5.1	4-inch SDR-17 HDPE Pipe (Solid)	LF	4300		
5.2	4-inch SDR-17 HDPE Pipe (Perf)	LF	2740		
6	24-inch Culvert	LF	20		
7	Access Risers				

BIDDER: _____

7.1	18" Access Riser	EA	3		
7.2	8" Access Riser	EA	7		
7.3	4" Access Riser	EA	0		
8	Valves				
8.1	18-inch Valve	EA	1		
8.2	8-inch Valve	EA	6		
8.3	4-inch Valve	EA	7		
9	Termination Points				
9.1	18-inch Blind Flange	EA	2		
9.2	16-inch Blind Flange	EA	0		
10	Condensate Drip Leg	EA	2		
11	18-inch Condensate Straw Drain & 48-inch Knock-out	EA	3		
12	36-inch Condensate Knockout & 48-inch Lift Station System	LS	1		
13	Trenched Road Crossing	LF	1		
14	Flare System	LS	1		
15	Passive Flare Abandonment	EA	2		
Leachate Management System Upgrades					
16	2-inch SDR-9 Air Supply Pipe	LF	12,055		
17	2-inch SDR-11 Leachate Pipe	LF	8163		
18	3-inch SDR-11 Leachate Pipe	LF	3730		
19	2"/4" Dual Contained Forcemain	LF	162		
20	3"/6" Dual Contained Forcemain	LF	420		
21	2-inch Ball Valve	EA	18		
22	3-inch Ball Valve	EA	4		
23	Cells 1- 8 VDW Well Upgrade	EA	12		

BIDDER: _____

24	Electric Conduit	LF	1000		
25	Cells 1- 8 VW Well Upgrade	EA	15		
26	Cells 9-13 VW Well Abandon	EA	19		
27	Condensate Drip Leg w/ pump	EA	5		
Miscellaneous					
28	Seed and Mulch	LS	1		
29	Manhole repairs for Cells 1-13	EA	7		

Notes:

1: LS = Lump Sum, LF = Linear Feet, SF = Square Feet, CY = Cubic Yards, AC = Acres

2: All quantities in the Bid Proposal Form are approximate and are for bidding purposes only. Actual payment quantities will be determined by the methods outlined in Section 01025 of the Technical Specification and any and all Addenda.

Option 1, Bid Price for GCCS Project (with all applicable SRF requirements):

Total Bid Price \$ _____

Total Bid Price in Words _____

Total Bid Bond* (5% of Total Bid Price) \$ _____

* Note: Contractor shall complete the above bid form pricing/breakdown. Contractor is encouraged to supply the alternative bid form pricing found in the subsequent pages of this Bid Form. A Bid Bond shall be provided for the Alternative with the higher total price.

Alternative Bid Form – NO ARRA Buy American or Davis-Bacon Requirements

City of Midland
Integrated Utilities Improvement Project
Landfill Gas Collection and Control System Construction

Bid Item No.	Item Description	Unit ¹	Quantity ²	Unit Price	Extended Price
Phase 1 Landfill Gas Collection System Construction					
1a	Mobilization / Demobilization	LS	1		
2a	Temporary Controls	LS	1		
3a	Gas Well Installation				
3.1a	Completed Well Installation	LF	1095		
3.2a	Drilled and Abandoned - Refusal	LF	100		-
3.3a	2" Wellhead Assembly (CES Landtec Accu-Flo or Equivalent)	EA	36		
3.4a	Remote Wellhead Assembly	EA	18		
4a	Header Piping and Laterals				
4.1a	20-inch SDR-17 HDPE Pipe	LF	150		
4.2a	18-inch SDR-17 HDPE Pipe	LF	1495		
4.3a	16-inch SDR-17 HDPE Pipe	LF	0		
4.4a	8-inch SDR-17 HDPE Pipe	LF	7335		
4.5a	6-inch SDR-17 HDPE Pipe	LF	480		
4.7a	Gas Extraction Manifold	LS	1		
5a	LFG Horizontal Collection Trench				
5.1a	4-inch SDR-17 HDPE Pipe (Solid)	LF	4300		
5.2a	4-inch SDR-17 HDPE Pipe (Perf)	LF	2740		
6a	24-inch Culvert	LF	20		
7a	Access Risers				

BIDDER: _____

7.1a	18" Access Riser	EA	3		
7.2a	8" Access Riser	EA	7		
7.3a	4" Access Riser	EA	0		
8a	Valves				
8.1a	18-inch Valve	EA	1		
8.2a	8-inch Valve	EA	6		
8.3a	4-inch Valve	EA	7		
9a	Termination Points				
9.1a	18-inch Blind Flange	EA	2		
9.2a	16-inch Blind Flange	EA	0		
10a	Condensate Drip Leg	EA	2		
11a	18-inch Condensate Straw Drain & 48-inch Knock-out	EA	3		
12a	36-inch Condensate Knockout & 48-inch Lift Station System	LS	1		
13a	Trenched Road Crossing	LF	1		
14a	Flare System	LS	1		
15a	Passive Flare Abandonment	EA	2		
Leachate Management System Upgrades					
16a	2-inch SDR-9 Air Supply Pipe	LF	12,055		
17a	2-inch SDR-11 Leachate Pipe	LF	8163		
18a	3-inch SDR-11 Leachate Pipe	LF	3730		
19a	2"/4" Dual Contained Forcemain	LF	162		
20a	3"/6" Dual Contained Forcemain	LF	420		
21a	2-inch Ball Valve	EA	18		
22a	3-inch Ball Valve	EA	4		
23a	Cells 1- 8 VDW Well Upgrade	EA	12		

BIDDER: _____

24a	Electric Conduit	LF	1000		
25a	Cells 1- 8 VW Well Upgrade	EA	15		
26a	Cells 9-13 VW Well Abandon	EA	19		
27a	Condensate Drip Leg w/ pump	EA	5		
Miscellaneous					
28a	Seed and Mulch	LS	1		
29a	Manhole repairs for Cells 1-13	EA	7		

Notes:

1: LS = Lump Sum, LF = Linear Feet, SF = Square Feet, CY = Cubic Yards, AC = Acres

2: All quantities in the Bid Proposal Form are approximate and are for bidding purposes only. Actual payment quantities will be determined by the methods outlined in Section 01025 of the Technical Specification and any and all Addenda.

Option 2, Bid Price for GCCS Project (NO ARRA Buy American or Davis-Bacon Requirements):

Total Bid Price \$ _____

Total Bid Price in Words _____

Total Bid Bond (5% of Total Bid Price) \$ _____

* Note: although it is not required, Contractor is encouraged to supply the alternative bid form pricing above. A single Bid Bond shall be provided for the Alternative with the higher total price.

9 TIME OF COMPLETION

Dates required for the commencement and Substantial Completion of the proposed Work are outlined in the Invitation to Bid. Substantial Completion is defined by paragraph 14.04 of the Standard General Conditions. The Contractor shall use sufficient labor and equipment to complete and place in service all of the Work being performed within this Contract by the date specified in the Invitation to Bid.

10 RELATED BID DOCUMENTS

A. The following documents are attached to and made a condition of this Bid:

1. Required Bid Security as described in Section 10 of the Instructions to Bidders.
2. Supplements to Bid Forms, including a Safety Program, List of Subcontractors, Suppliers and other persons and organizations required to be identified in this Bid, Bidder

BIDDER: _____

qualifications, DBE forms, and a tabulation of equipment rental rates. The equipment rental rates must be fully loaded hourly rates for construction related equipment, such as excavators, dozers, and off-road trucks.

3. Evidence of authority to conduct business in the State of Michigan shall be provided. State contractor license number, if any, must also be shown.
4. Certificate of Surety as evidence of ability to provide the required Performance Bond and Labor and Materials Bond in the event the Contract is awarded.
5. If variations are proposed, list variations on separate sheet of paper and return with the bid response from. Enclose manufacturer's descriptive literature or brochure.

11 BID COMMUNICATIONS

Communications concerning this Bid shall be addressed to the Bidder's representative listed below:

Name and Title: _____

Address: _____

Phone and Fax: _____

Email Address: _____

BIDDER: _____

12 CONTRACTORS AUTHORIZED REPRESENTATIVE

A. I hereby state that all of the information I have provided is true, accurate, and complete. I hereby state that I have the authority to submit this bid, which will become a binding contract, if accepted by the City of Midland. I hereby agree to abide by all City ordinances, rules and regulations including the suspension process for poor performance arising out of this contract, if awarded.

B. Terms used in this Bid which are defined in the Bid and Contract Documents will have the meanings indicated in those documents.

C. These Bid Forms are Submitted on _____
Date

D. Bidder is:

1. An Individual

By: _____ (SEAL)
(Signature of Individual) (Print Name of Individual)

Doing Business as: _____

Business Address: _____

Phone Number: _____

2. A Partnership

By: _____ (SEAL)
(Firm Name)

(Signature of General Partner) (Print Name of General Partner)

Business Address: _____

Phone Number: _____

Note: According to procedures outlined in the Instructions to Bidders, Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear below the signature, and the official address of the partnership must be shown below the signature.

BIDDER: _____

3. A Corporation

By: _____ (SEAL)
(Corporation Name)

In the State of: _____
(State of Incorporation)

By: _____
(Signature of Authorized Person) (Print Name of Authorized Person)

(Title of Authorized Person)

Attest: _____
(Signature of Person Attesting) (Print Name and Title of Person Attesting)

Business Address: _____

Phone Number: _____

Note: According to the procedures outlined in the Instructions to Bidders, Bids by corporations must be executed in the corporate name by the president or vice-president, or other corporate officer accompanied by the evidence of authority to sign, and the corporate seal must be affixed and attested to by the secretary or assistant secretary. The corporate address and State of Incorporation must be shown.

4. A Joint Venture

By _____ (SEAL)
(Signature of Joint Venture) (Print Name of Joint Venture)

Address: _____

By _____ (SEAL)
(Signature of Joint Venture) (Print Name of Joint Venture)

Address: _____

Address and Phone Number for Official Communications: _____

Note: Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.

All names must be typed or printed in blue or blank ink next to the signature.

END OF SECTION

CITY OF MIDLAND UTILITIES DIVISION
INTEGRATED UTILITIES IMPROVEMENT PROJECT
GAS COLLECTION AND CONTROL SYSTEM

PROJECT SCHEDULE

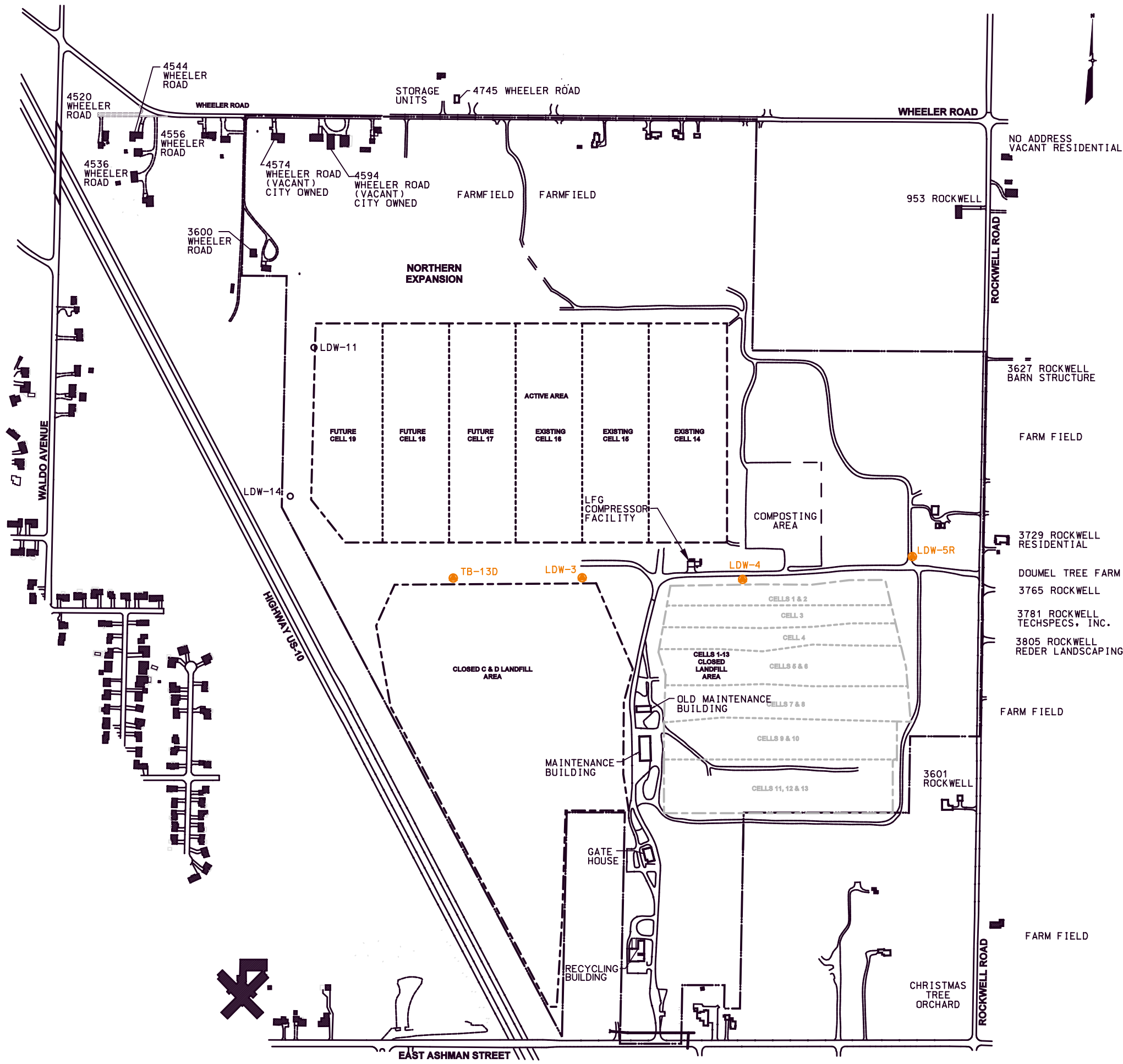
Bid Package Advertised	Thursday, October 8, 2009
Bid Package Available	Friday, October 9, 2009
Pre-Bid Meeting	Thursday, October 22, 2009
Questions Due	Wednesday, November 4, 2009
Bid Opening	Tuesday, November 10, 2009
Notice of Award of Contract	Tuesday, November 24, 2009
Project Kick-Off Meeting	Tuesday, December 1, 2009
Pre-Construction Meeting (as early as)	Monday, January 25, 2010
Installation of Lift Station and Condensate Knockout At Flare Station prior to Building Construction	February 26, 2010
Complete GCCS	Friday, June 25, 2010
GCCS System Start-up Test	Friday, July 2, 2010
Substantial Completion	Friday, July 16, 2010
Work Complete	Friday, July 30, 2010

Attachment C

Boring Log

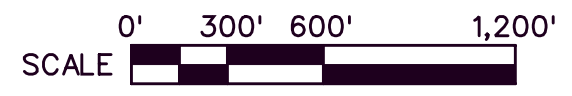
TIME PLOTTED: 4:16:56 PM
 DATE PLOTTED: 10/5/2009
 FILENAME: M:\sw\MIDLAND\HYDROGEOLOGICAL June 2009\drawings\borings\borings around lfg compressor.dgn

DRAWING SIZE: 11 X 17



LEGEND

- — — — — PROPERTY LINE
- - - - - LIMIT OF REFUSE
- - - - - CELL BOUNDARY
- LDW-3 BORING LOCATION



BORING LOCATIONS AROUND LFG COMPRESSOR FACILITY
 CITY OF MIDLAND LANDFILL
 MIDLAND, MICHIGAN

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
AS SHOWN	78042013	JUNE 09 FIGURE 3-1	JUNE 2009
SCALE:	PROJECT NO.:	FILE NAME:	DATE:

FIGURE
1



MONITORING WELL NO: LDW-5R



NTH CONSULTANTS, LTD.

Project Name: CITY OF MIDLAND LANDFILL

NTH Proj. No: 13-020070-FI

Project Location: MIDLAND, MICHIGAN

Checked By:

13 gal/bails dry

LOG OF MONITORING WELL

Generalized Subsurface Profile			Installation Schematic	
ELEV. (FT)	PRO-FILE	GROUND SURFACE ELEVATION: 660.90	WELL DETAIL	TOP OF WELL CASING ELEVATION: 663.16
660		0.0		0.0
		FILL: Clayey Sand		Concrete Seal
		6.0		2.0
		Sandy Clay		
		10.0		
		Silty Sand		
		10.5		
		Sandy Clay		
		13.7		
645		Sand		
		13.8		
		Sandy Clay		
		21.5		
630		Silty Clay		Non-Shrinking Cement Grout
		40.0		
		Sandy Clay		
		43.5		
615		Clayey Sand		
		43.8		
		Silty Clay		
		49.6		
		Clayey Sand		
		49.7		
		Silty Clay		
		53.0		
		Clayey Sand		
		53.7		
600		Silty Clay		Hydrated Bentonite Pellets
		57.5		61.0
		65.0		
		Clayey Sand		Filter Sand
		66.0		
		Silty Clay		
		66.5		
		Clayey Sand		
		66.8		
		Silty Clay		
		70.0		70.0
585		End of Boring		Tip Elev: 590.9'
570				

GROUNDWATER DATA

DATE	ELEV. (ft.)	COMMENTS
------	-------------	----------

NOTES

- [1] For details of subsurface strata, see Log of Test Boring TB-LDW-5R.
- [2] Location: E 12321.1 / N 12768.1
- [3] Survey data provided by Lapham Associates.

Started: 09/09/04
 Completed: 09/10/04
 Inspector: S. Pratt
 Contractor: Rau Drilling Co.
 Driller: A. Rau
 Equipment: CME-55 Drill Rig
 Well Type: Monitoring

Casing Diameter: 2.0 in
 Casing Length: 67.26 ft
 Casing Type: PVC
 Screen Diameter: 2.0 in
 Screen Length: 5.0 ft
 Screen Mesh: 0.010 in
 Screen Type: PVC

STEARNS DRILLING COMPANY

Industrial Park Drive
Dutton, Michigan 49316
616/698-7770

Jb No. 90-2768-12

LOG OF TEST BORING NO. LDW-4

Sheet 1 of 3

Project Midland Landfill

Location Ashman & US10
Midland, MI

Date Completed 1-11-91

Crew Chief Roger Compagner, Jr.
Drill Rig CME 850
Boring Method 8 1/2" HSA

Hole Plugged With Holeplug,
cement/bentonite grout

GROUNDWATER:

Encountered @ - ft.
After completion - ft.
After - hrs. - ft.
Seepage - ft.
Boring Caved at - ft.

MONITOR WELL DATA:

Pipe/Type -
Length -
Above Ground -
Cap -

Screen/Type -
Size -
Slot -
Set @ -
Backfilled -

Bentonite Seal -

Grout/Type -
Depth -

Protective Casing -

Materials Cleaned -

Development -

REMARKS: -

LEGEND:

Blow Count: Blows per 6"
w/140# hammer x 30" drop
SS - 2" Split Spoon Sampler
LS - Brass Liner Sample
ST - Shelby Tube Sample
SNR - Sample not recovered

Sample Type	REC	Blow Count	Depth in Feet	SOIL DESCRIPTION
			1.5	Black sand with organics
			4.0	Brown fine to medium sand, moist
			5	Brown clay, trace of fine gravel
			7.0	Brown clay, some fine to medium sand
			8.5	Same as above
SS	14	4 7 9	10	
			13.0	Gray clay, some fine sand
			15	
SS	18	2 3 5	20	Gray clay, some fine sand, moist
			25	
SS	18	3 7 8	30	Gray clay, trace of fine to medium Sand

STEARNS DRILLING COMPANY
 Industrial Park Drive
 Dutton, Michigan 49316
 616/698-7770

No. 90-2768-12

LOG OF TEST BORING NO. LDW-4

Sheet 2 of 3

Project Midland Landfill

Location Ashman & US10
Midland, MI

Date Completed 1-11-91

Crew Chief Roger Compagner, Jr.
 Drill Rig CME 850
 Boring Method 8 1/2" HSA

Hole Plugged With Holeplug,
cement/bentonite grout

GROUNDWATER:

Encountered @ - ft.
 After completion - ft.
 per - hrs. - ft.
 seepage - ft.
 Boring Caved at - ft.

MONITOR WELL DATA:

Pipe/Type -
 Length -
 Above Ground -
 Cap -

Screen/Type -
 Size -
 Slot -
 Set @ -
 Backfilled -

Bentonite Seal -

Grout/Type -
 Depth -

Protective Casing -

Materials Cleaned -

Development -

REMARKS: -

LEGEND:

Blow Count: Blows per 6"
 w/140# hammer x 30" drop
 SS - 2" Split Spoon Sampler
 LS - Brass Liner Sample
 ST - Shelby Tube Sample
 SNR - Sample not recovered

Sample Type	REC	Blow Count	Depth in Feet	SOIL DESCRIPTION
			35	
SS	18	3 8 9	40	Brown clay, trace of silt and fine Gravel
			45	
SS	18	5 8 12	50	Brown plastic clay, trace of fine Gravel
			55	
SS	18	6 9 11	60	Brown plastic clay trace

STEARNS DRILLING COMPANY

Industrial Park Drive
Dutton, Michigan 49316
616/698-7770

Job No. 90-2768-12

LOG OF TEST BORING NO. LDW-4

Sheet 3 of 3

Project Midland Landfill

Location Ashman & US10
Midland, MI

Date Completed 1-11-91

Crew Chief Roger Compagner, Jr.
Drill Rig CME 850
Boring Method 8 1/2" HSA

Hole Plugged With Holeplug,
cement/bentonite grout

GROUNDWATER:

Encountered @ - ft.
After completion - ft.
After - hrs. - ft.
Seepage - ft.
Boring Caved at - ft.

MONITOR WELL DATA:

Pipe/Type 2" galvanized
Length 58'
Above Ground 3'
Cap 2" standard
Screen/Type Johnson
Size 2" x 10'
Slot .010
Set @ 65' to 55'
Backfilled #3 Silica 65'-52.5'

Bentonite Seal Holeplug 52.5'-47.5'

Grout/Type Cement/bentonite
Depth 47.5' to 0.0'
Protective Casing 4"
Materials Cleaned Steamed

Development -

REMARKS: -

LEGEND:

BlowCount/Blows per 6"
w/140# hammer x 30" drop
SS - 2" Split Spoon Sampler
LS - Brass Liner Sample
ST - Shelby Tube Sample
SNR - Sample not recovered

Sample Type	REC	Blow Count	Depth in Feet	SOIL DESCRIPTION
SS	18	7 8 10	65.0	Brown plastic clay, trace of fine Gravel
				End of boring at 65.0'

STEARNS DRILLING COMPANY

Industrial Park Drive
Dutton, Michigan 49316
616/698-7770

No. 90-2768-12

LOG OF TEST BORING NO. LDW-3

Sheet 1 of 2

Project Midland Landfill

Location Ashman & US10
Midland, MI

Date Completed 1-7-91

Crew Chief Dennis Giffels

Drill Rig CME 550

Boring Method 8 1/2" HSA

Hole Plugged With Holeplug,
cement/bentonite grout

GROUNDWATER:

Encountered @ _____ ft.
After completion _____ ft.
After _____ hrs. _____ ft.
Seepage _____ ft.
Boring Caved at _____ ft.

MONITOR WELL DATA:

Pipe/Type _____
Length _____
Above Ground _____
Cap _____

Screen/Type _____
Size _____
Slot _____
Set @ _____
Backfilled _____

Bentonite Seal _____

Grout/Type _____
Depth _____

Protective Casing _____

Materials Cleaned _____

Development _____

REMARKS: _____

LEGEND:

Blow Count: Blows per 6"
w. 140# hammer x 30" drop
SS - 2" Split Spoon Sampler
LS - Brass Liner Sample
ST - Shelby Tube Sample
SNR - Sample not recovered

Sample Type	REC	Blow Count	Depth in Feet	SOIL DESCRIPTION
			1.5	Black sand & clay, topsoil Brown silty clay, moist
			5	
SS	18	3	10.5	Gray silty clay
		4		
		6		
			15	
SS	18	4	20	Same as above, some gravel
		7		
		10		
			25	
			30	

STEARNS DRILLING COMPANY

Industrial Park Drive
 Dutton, Michigan 49316
 616/698-7770

Job No. 90-2768-12

LOG OF TEST BORING NO. LDW-3

Sheet 2 of 2

Project Midland Landfill

Location Ashman & US10
Midland, MI

Date Completed 1-7-91

Crew Chief Dennis Giffels
 Drill Rig CME 550
 Boring Method 8 1/2" HSA

Hole Plugged With Holeplug,
cement/bentonite grout

GROUNDWATER:
 Encountered @ _____ ft.
 After completion _____ ft.
 After _____ hrs. _____ ft.
 Seepage _____ ft.
 Boring Caved at _____ ft.

MONITOR WELL DATA:
 Pipe/Type 2" galvanized
 Length 54'
 Above Ground 3'
 Cap 2" standard

Screen/Type Johnson
 Size 2" x 10'
 Slot .010
 Set @ 61' to 51'
 Backfilled #3 Silica 61'-49'

Bentonite Seal Holeplug 49'-43.5'
 Grout/Type Cement/bentonite
 Depth 43.5' to surface
 Protective Casing 4"
 Materials Cleaned Steamed

Development _____

REMARKS: _____

LEGEND:
 Blow Count/Blows per 6"
 w/ 140# hammer x 30" drop
 SS - 2" Split Spoon Sampler
 LS - Brass Liner Sample
 ST - Shelby Tube Sample
 SNR - Sample not recovered

Sample Type	REC	Blow Count	Depth In Feet	SOIL DESCRIPTION
SS	16	3	0-5	Gray silty clay, some gravel
		6		
		8		
SS	14	4	35-40	Same as above
		8		
		12		
SS	18	4	45-50	Gray plastic clay with some silt
		7		
		11		
			45.5	
			55	
			60	Gray plastic clay, some silt and sa

657 3-



CTI and Associates, Inc.
 12482 Emerson Drive
 Brighton, MI 48116
 (800) CTI TODAY (phone)
 (248) 486-5050 (fax)
www.cticompanies.com

LOG OF BORING

TB-13D

DRAFT

PROJECT NAME: Midland Landfill
 PROJECT NUMBER: 078042013 - 3
 LOCATION: Midland, Michigan
 LOGGED BY: E. Hammerly
 DRILLING CONTRACTOR: Boart-Longyear
 Note: All density descriptions based on Field Geologist's observations.

DATE: 3-19-08
 DEPTH TO WATER: Not Observed
 TOTAL DEPTH: 168 feet
 METHOD: Sonic using a 6" OD core barrel
 GROUND SURFACE ELEVATION: 661.19' MSL

DEPTH (ft)	% RECOVERY	SAMPLE NUMBER	STRATIGRAPHIC DESCRIPTION	SOIL CLASS (Visual-Manual)	PID UNIT READING (ppm)	STANDARD PENETRATION RESISTANCE (N)	REMARKS
			Ground Surface				N/A - Not Applicable; a standard penetration test was not completed during this phase
0	100%		0-8" Yellowish-Brown, 5/6 10YR, FILL with Gravel and some plants, grass and roots (O.M.), wet/frozen - FILL	FL	0	N/A	
1	100%		Dense, reddish-brown 4/3 5YR, Lean Clay with Sand (fine-grained sand), damp to moist, cohesive, medium plasticity, massive, oxidized, non-uniform, trace/little small to large sub-angular to rounded gravel - Glacial Till (0-8' bgs)	CL	0		FL - Fill Material CL - Clay with minor constituents ML - Silt with minor constituents CH - Fat Clay with minor constituents
2							
3							
4							
5	100%		Same as Above (SAA)	CL	0		
6							
7							
8	100%		SAA	CL	0		
9							
10							
11							
12							
13	100%		Dense, brown, 4/2 7.5 YR, fine to medium grained Sandy Lean Clay with Gravel, some Silt, damp, cohesive, medium plasticity, massive, few small to large, subangular to rounded gravel - Glacial Till (8'-18' bgs)	CL	0		
14							
15							
16							
17	100%		SAA	CL	0		
18							
19	100%		Dense, brown, 4/2.5 YR, fine grained Lean Clay with Sand damp, cohesive, medium plasticity, massive, trace to little fine sand, and small subangular to rounded gravel, non uniform - Glacial Till (18'-26' bgs)	CL	0		
20							
21							
22							



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LOG OF BORING

TB-13D

DRAFT

PROJECT NAME: Midland Landfill
 PROJECT NUMBER: 078042013 - 3
 LOCATION: Midland, Michigan
 LOGGED BY: E. Hammerly
 DRILLING CONTRACTOR: Boart-Longyear
 Note: All density descriptions based on Field Geologist's observations.

DATE: 3-19-08
 DEPTH TO WATER: Not Observed
 TOTAL DEPTH: 168 feet
 METHOD: Sonic using a 6" OD core barrel
 GROUND SURFACE ELEVATION: 661.19' MSL

DEPTH (ft)	% RECOVERY	SAMPLE NUMBER	STRATIGRAPHIC DESCRIPTION	SOIL CLASS (Visual-Manual)	PID UNIT READING (ppm)	STANDARD PENETRATION RESISTANCE (N)	REMARKS
23							
24		SAA		CL	0		
25		SAA		CL	0		
26			Medium dense, 4/2 7.5 YR, brown, fine-grained Sandy Silt with clay, some gravel, moist, cohesive, low plasticity, sharp contact - Glacial Till (26'-29' bgs)	ML	0		
27							
28		SAA		ML	0		
29			Dense, 4/1 7.5 YR Lean Clay with Sand, damp, cohesive, medium pasticity, massive, few fine grained sands, trace small to medium gravel - Glacial Till (29'-38' bgs)	CL	0		
30							
31							
32	100%	SAA		CL	0		
33							
34		SAA		CL	0		
35							
36		SAA		CL	0		
37		SAA		CL	0		
38			Loose, 4/1 7.5 YR, gray Clayey Silt with sand, some gravel, moist to wet, cohesive, low plasticity, massive, non-uniform small to medium gravel - Glacial Till (38'-47' bgs)	ML	0		
39							
40		SAA		ML	0		
41							
42		SAA		ML	0		
43	100%						
44		SAA		ML	0		
45							
46		SAA		ML	0		
47			Loose to dense, 4/2 7.5 YR, brown, wet, Silt with Clay and Gravel, cohesive, low plasticity - Glacial Till	ML	0		
48			(47'-49.5' bgs)				



CTI and Associates, Inc.
 12482 Emerson Drive
 Brighton, MI 48116
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www.cticompanies.com

LOG OF BORING

TB-13D

DRAFT

PROJECT NAME: Midland Landfill
 PROJECT NUMBER: 078042013 - 3
 LOCATION: Midland, Michigan
 LOGGED BY: E. Hammerly
 DRILLING CONTRACTOR: Boart-Longyear
 Note: All density descriptions based on Field Geologist's observations.

DATE: 3-19-08
 DEPTH TO WATER: Not Observed
 TOTAL DEPTH: 168 feet
 METHOD: Sonic using a 6" OD core barrel
 GROUND SURFACE ELEVATION: 661.19' MSL

DEPTH (ft)	% RECOVERY	SAMPLE NUMBER	STRATIGRAPHIC DESCRIPTION	SOIL CLASS (Visual-Manual)	PID UNIT READING (ppm)	STANDARD PENETRATION RESISTANCE (N)	REMARKS
49							
50	100%		Loose to dense, 4/2 7.5 YR, brown, moist to wet, Sandy Lean Clay with Gravel, medium plasticity, subangular to rounded gravel - Glacial Till (49.5'-52' bgs)	CL	0		
51							
52			Loose to dense, 4/2 7.5 YR, brown, wet, clayey Silt with sand, some gravel, cohesive, low plasticity - Glacial Till (52'-55' bgs)	ML	0		
53							
54			SAA	ML	0		
55			Loose to dense, 4/2 7.5 YR, brown, moist to wet, Sandy Lean Clays with Gravel, medium plasticity, subangular to rounded gravel - Glacial Till (49.5'-52' bgs)				
56				CL	0		
57							
58	100%		Very dense, 5/2 7.5 YR brown, moist, Sandy Lean Clay with Gravel (large sub-angular to round gravel, moist, massive, cohesive, medium plasticity, non-uniform - Glacial Till (58'-67' bgs)	CL	0		
59							
60			SAA	CL	0		
61							
62			SAA	CL	0		
63							
64		SAA	CL	0			
65							
66		SAA	CL	0			
67			Medium density 5/2 7.5 YR brown, clayey Silt with Gravel, wet, cohesive, low plasticity, few small to medium gravel Glacial Till (67'-70' bgs)	ML	0		
68							
69		1	SAA	ML	0		
70	100%		Sharp contact, very dense, 4/2 7.5 YR, brown Gravelly Lean Clay with fine grained sand, damp, cohesive, massive, medium plasticity, non-uniform, small to large gravel - Glacial Till (70'-73' bgs)	CL	0		
71							
72			SAA	CL	0		
73							
74				Sharp contact, very dense 4/1 7.5 YR, dark gray, moist, Sandy Fat Clay with Gravel, massive, cohesive, high	CH	0	



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LOG OF BORING

TB-13D

DRAFT

PROJECT NAME: Midland Landfill
 PROJECT NUMBER: 078042013 - 3
 LOCATION: Midland, Michigan
 LOGGED BY: E. Hammerly
 DRILLING CONTRACTOR: Boart-Longyear
 Note: All density descriptions based on Field Geologist's observations.

DATE: 3-19-08
 DEPTH TO WATER: Not Observed
 TOTAL DEPTH: 168 feet
 METHOD: Sonic using a 6" OD core barrel
 GROUND SURFACE ELEVATION: 661.19' MSL

DEPTH (ft)	% RECOVERY	SAMPLE NUMBER	STRATIGRAPHIC DESCRIPTION	SOIL CLASS (Visual-Manual)	PID UNIT READING (ppm)	STANDARD PENETRATION RESISTANCE (N)	REMARKS
75			plasticity, small to medium gravel, non-uniform Glacial Till (73'-82' bgs)				
76			SAA	CH	0		
77							
78			Sharp contact, very dense 4/1 7.5 YR, dark gray, moist, Sandy Fat Clay with Gravel, massive, cohesive, high plasticity, small to medium gravel, non-uniform Glacial Till (73'-82' bgs)	CH	0		
79							
80			SAA	CH	0		
81							
82			Sharp contact, medium dense, wet, 4/1 7.5 YR dark gray, Sandy Silt, cohesive, low plasticity, non-uniform, trace small to large round gravel, trace black shale chips - Glacial Till	ML	0		
83							
84			Sharp contact, dense, 4/2 7.5 YR dark gray Sandy Lean Clay, medium plasticity, cohesive, non-uniform, little medium gravel, moist - Glacial Till (84'-85' bgs)	CL	0		
85							
86			Sharp contact, 4/1 10YR, dark gray, very dense, Lean Clay with Sand, little small to large, gravel, cohesive, non-uniform, massive - Glacial Till (85'-87' bgs)	CL	0		
87			Sharp contact, 4/1 7.5YR, dark gray, damp, Sandy Lean Clay with little small gravel, massive, cohesive,	CL	0		
88			compacted, low plasticity, non-uniform - Glacial Till				
89			Sharp contact, very dense and compact, very dark gray, dry, 3/1 10YR, Sandy Lean Clay with Gravel, (hardpan) cohesive, non-plastic, massive with slight black mottling (25%), non-uniform, small to cobble size gravel, little very small angular shale chips - Glacial Till (89'-93' bgs)	CL	0		
90				CL	0		
91				CL	0		
92							
93	100%			CL	0		
94			Sharp contact, very dense 3/1 10YR, dry, Lean Clay with Gravel, little fine sand, fine to medium gravel, massive, non-uniform Glacial Till (93'-99' bgs)	CL	0		
95							
96			SAA	CL	0		
97							
98			Sharp contact, very dense 3/1 10YR, dry, Lean Clay with silt, little fine sand, trace fine to medium gravel, massive, non-uniform Glacial Till (93'-99' bgs)	CL	0		
99			Sharp contact, very dense, dark gray, 4/1 10YR, damp, Lean Clay with trace small gravel and silt, massive,				



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100	100%		medium plasticity - Glacial Till	CL	0		
101							
102			SAA	CL	0		
103							
104			SAA	CL	0		
105							
106	100%		Sharp contact, very dense 4/1 10YR, dark gray Clayey Silt with Sand, dry, cohesive, low plasticity, non-uniform - Glacial Till (106'-112' bgs)	ML	0		
107							
108			SAA	ML	0		
109							
110			SAA	ML	0		
111							
112	100%		Grading to a very dense, dry, 4/1 10YR, dark gray Lean Clay, with trace fine sand and small to medium gravel, cohesive, low plasticity, massive, non-uniform - Glacial Till (112'-118' bgs)	CL	0		
113							
114			SAA	CL	0		
115							
116			SAA	CL	0		
117							
118	100%		Dense, dry, 4/2 10YR, gray, Sandy Lean Clay with Gravel, non-uniform, cohesive, massive, low to medium plasticity - Glacial Till (118'-120' bgs)	CL	0		
119							
120							
121							
122			SAA	ML	0		
123							
124							
125							



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126			SAA	ML	0			
127								
128	100%		SAA	ML	0			
129								
130			SAA	ML	0			
131								
132			SAA	ML	0			
133			Grading to a very dense, 4/2 10YR, dark grayish brown, dry, Silt with Clay and Sand some Gravel, cohesive, low plasticity, massive, non-uniform - Glacial Till	ML	0			
134				ML	0			
135								
136		SAA	ML	0				
137								
138		SAA	ML	0				
139			Grading to a very dense, dry, 4/1 10YR, dark gray, Lean Clay with little small to large gravel and fine to medium sand, massive, non-uniform, low to medium plasticity, cohesive- Glacial Till	CL	0			
140								
141								
142					CL	0		
143								
144					SAA	CL	0	
145								
146		SAA	CL	0				
147								
148		SAA	CL	0				
149		SAA	CL	0				
150								
151			Grading to a very dense, dry to slightly damp, 4/2 10YR, dark grayish brown, Lean Clay with trace small to medium, gravel and fine sand, cohesive, medium	CL	0			



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152	100%		plasticity, massive, uniform - Glacial Till (150'-160' bgs)	CL	0			
153								
154				SAA	CL	0		
155								
156				SAA	CL	0		
157								
158			Very dense, dry, 4/2 10YR, dark grayish brown, Lean Clay with (fine grained) Sand, little small to large gravel, massive, non-uniform, low to medium plasticity, cohesive - Glacial Till	CL	0			
159								
160								
161								
162								
163								
164				SAA	CL	0		
165								
166				SAA	CL	0		
167								
168	END OF BORING - 168 FEET BGS							

Attachment D

Pre-Bid Attendance Sheet

City of Midland
Integrated Utilities Improvement Project - Gas Collection and Control System Construction
Pre-Bid Meeting
October 22, 2009 9:00 a.m.

Company Name Representative Name	Address	Phone Number	Fax Number	Email Address
American Environmental Group, Ltd./Paul Pronishen	3600 Brecksville Road, Suite 100 Richfield, OH 44286	330-659-5930 Office 810-422-8922 Cell	866-248-8335 Fax	ppronishen@aegl.net
John Carlo, Inc./Ron Sharp	45000 River Ridge Drive, Suite 200 Clinton Twp., MI 48038	586-416-4500 Office 810- 523-5730 Cell	586-226-7261 Fax	rsharp@carlocompanies.com
John Carlo, Inc./Carl Vozza	45000 River Ridge Drive, Suite 200 Clinton Twp., MI 48038	586-416-4500 Office	586-226-7261 Fax	evozza@carlocompanies.com
Stante Excavating Co., Inc.	48400 West Road Wixom, MI 48393	248-624-0030	248-624-2817	drogers@b-vconstruction.com
Catskill Remedial Contracting Services, Inc./James C. Miller	911 Dix Street, Suite C Otsego, MI 49078	269-692-2504 Office	269-692-3923 Fax	ctskil@aol.com
Faulkner Electric/ Carl Ruffertshofer	2651 Salzburg Road Midland, MI 48640	989-496-2200 Office 989-615-8849 Cell	989-496-2628 Fax	
Technical Service Professionals, LLC/Michael Greene	12411 Stark Road Livonia, MI 48150	734-838-0426 Office 734-272-8434 Cell	734-838-0428 Fax	mgreene@tspenvironmental.com
Lennon Construction Inc./Greg Dunlap and Dan Baker	15287 Peacock Road Haselett, MI	517-202-6451 Office	517-575-0438 Fax	Lennonconst@aol.com
Faulkner Electric/ Steven Schneider	2651 Salzburg Road Midland, MI 48640	989-496-2200 Office	989-496-2628 Fax	

City of Midland
Integrated Utilities Improvement Project - Gas Collection and Control System Construction
Pre-Bid Meeting
October 22, 2009 9:00 a.m.

Company Name Representative Name	Address	Phone Number	Fax Number	Email Address
Fisher Contracting Co./Steven C. O'Mara	614 Jefferson Ave. Midland, MI	835-7771 Office	835-8628 Fax	steveomara@fishercompanies.net
U.A. Local 85 Plumbers & Pipefitters/Scott Brink	6705 Weiss Street MI Saginaw,	989-799-5261 Ext. 13	989-791-3468 Fax	sbrink@ualocal85.org
R. Roese Contracting Corp./Graham K. Miller	2674 S. Huron MI Kaukaulin,	989-684-5121	989-684-5943 Fax	miller@roese.com
Job Site Services, Inc./Tom Holdeman	4395 Wilder Road City, MI 48706 Bay	989-671-3318 Office 989-737-3138 Cell	989-671-3316 Fax	tholeman@jssmi.com
SCS Field Services/Aaron Gilman	11260 Roger Baron Drive, 3rd Floor Reston, VA 20164	703-909-0004 x 220	703-709-8379 Fax	agilman@scsfieldservices.com
SHAW/ Steve Kitzmiller	4121 Essen Lane Rouge, LA Baton	225-987-7358 Office 225-590-1270 Cell	225-987-3137 Fax	steve.kitmiller@shawgrp.com
IUOE Local 324/ Jeff Sawyer	7677 Midland Road MI 48623 Freeland,	989-695-6262 Office 248-881-9358 Cell	989-695-5537 Fax	jeff.sawyer@iuoe324.org
Sterling Excavation Inc./Avery Sterling	3685 Lehman Road Branch, MI 48661 West	989-343-0926 Office 989-240-4721 Cell	989-343-0952 Fax	asterling3@ejourney.com
Miller Bros. Construction/Jon Gehle	1613 S. Defiance Street Ohio 43502 Archbold,	419-445-1015 Office 419-466-5523 Cell	419-446-2626 Fax	jongehle@mbcholdings.com

City of Midland
Integrated Utilities Improvement Project - Gas Collection and Control System Construction
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Company Name Representative Name	Address	Phone Number	Fax Number	Email Address
Lennon Construction Inc./Ric Crawford	15287 Peacock Road MI Haselett,	517-575-0437 Office 517-202-6451 Cell	517-575-0438 Fax	Lennonconst@aol.com
Dunigan Bros., Inc./Patrick Dunigan	911 E. South Street MI 49203 Jackson,	517-787-4720 Office	517-787-3023 Fax	pdunigan@duniganbros.com
Elsholz Contracting/Dan Elsholz	7400 E. Kelly Road MI 49667 Merritt,	231-328-4004 Office	231-328-4224 Fax	
The Wieland-Davco Corp./Matt Getchell	4162 English Oak Dr. MI 48911 Lansing,	517-372-8650 Office 517-719-2126 Cell	517-372-8961 Fax	matt.getchell@wieland-davco.com
Michigan Pipe & Valve/Chad Cadwell	1931 Snow Road Lansing, MI 47817	517-322-0300 Office 517-202-1304 Cell	517-322-4037 Fax	chad.cadwell@michiganpipe.com
Great Lakes Fusion/Bryan Marks	350 Maple Street Vernon, MI 48476	989-288-2656 Office 517-202-7617 Cell	517-288-5735 Fax	bmarks@greatlakesfusion.biz