### **FINAL**

# LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY REPORT FOR NINE LANDFILLS

# FORT MONMOUTH, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY

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U.S. Army Corps of Engineers New York District



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Date

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### LIST OF ACRONYMS

ACRONYM	DEFINITION	
СО	carbon monoxide	
CWA	Charles Wood Area	
FTMM	Fort Monmouth	
FS	feasibility study	
GEM	Gas Extraction Monitor	
GVP	Gas Vapor Probe	
LEL	Lower Explosive Limit	
MP	Main Post	
NJAC	New Jersey Administrative Code	
NJDEP	New Jersey Department of Environmental Protection	
PID	Photo-Ionization Detector	
QA	quality assurance	
QC	quality control	
RI	remedial investigation	

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### 1.0 INTRODUCTION

This report presents the results of the refinement of the landfill boundaries and methane gas survey for the nine landfills (FTMM-02, FTMM 03, FTMM-04, FTMM-05, FTMM-08, FTMM-12, FTMM-14, FTMM-18, and FTMM-25) located at Fort Monmouth (FTMM) in Oceanport, Monmouth County, New Jersey. Eight of the FTMM landfills are located at the Main Post (MP), and one landfill (FTMM-25) is located in the Charles Wood Area (CWA). The location of the eight landfills at the MP is depicted on **Figure 1**, and the landfill located at CWA is shown on Figure 2. The landfill boundary refinement and methane gas survey was performed in accordance with the June 19, 2015 Landfill Boundary Refinement and Methane Gas Survey letter from the U.S. Army to New Jersey Department of Environmental Protection (NJDEP). The letter stated that as part of the ongoing Remedial Investigation/Feasibility Study (RI/FS) report preparation process, it was determined that data gaps exist between the historic and current estimated limits of the FTMM landfills. This letter outlined that the landfill boundaries would be refined and field validated using test pits, historical aerial photograph review and field observations of the materials uncovered in the pits. In addition, the letter also outlined the requirement of a methane gas survey at the landfills. The NJDEP acknowledged this letter in an email dated July 8, 2015. This report was prepared as a standalone document supplemental to the RI/FS reports.

The intent of the landfill boundary refinement is to determine the landfill extents prior to construction of a vegetated soil cover or functional equivalent that will be placed over each landfill to provide safety protection for future non-residential use. As part of the cap construction, the existing landfill surface will be clear cut and regraded prior to the installation of a vegetated native soil cover or functional equivalent consistent with the NJDEP Solid Waste regulations (New Jersey Administrative Code [N.J.A.C.] 7:26-2A).

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and historical test pit and soil boring data for consistency with the 2015 landfill delineation solid waste criteria discussed further in Section 2.1. In accordance with the June 19, 2015 letter, a methane gas survey was conducted in July 2015 to evaluate the potential presence of methane gas within the landfill boundaries. Test pits were advanced in August and September 2015 to further refine the landfill boundaries. This report provides a summary of these two field investigation activities of the landfill limits. The investigation, results, and determinations for each landfill is presented in individual appendices in this report.

### 1.1 REPORT ORGANIZATION

This report includes the following sections:

- Section 1 provides an introduction and the organization of the report;
- Section 2 presents the methodology of the landfill boundary refinement and methane gas survey program;
- Section 3 summarizes the findings for the landfills;
- Section 4 presents the references used in preparation of this report; and
- Appendices A through I provide the test pit advancement and methane gas survey results and findings, summary tables and figures, and test pits logs for each landfill.

### 2.0 LANDFILL BOUNDARY REFINEMENT PROGRAM

### 2.1 TEST PIT ADVANCEMENT

Prior to test pit advancement, the Army performed vegetation clearance at the nine FTMM landfills to facilitate access to the proposed test pit and methane gas sampling locations. Between August 17 and September 3, 2015, test pits were advanced at the nine FTMM landfills using a mini-excavator. Test pits were typically advanced four feet below ground surface (bgs) and perpendicular to the landfill boundaries as verification of the historical test pits and soil boring logs which indicated that debris was typically found within the four feet of the ground surface. Where the 2010 historical logs indicated waste at greater depths, test pits were advanced deeper to verify the presence of waste.

At each test pit, the excavation was advanced in 6 to 12 inch increments. The excavated material was stockpiled adjacent to each test pit. Test pit contents were visually characterized to determine the presence and type of waste, if applicable. The type, layer thickness, and extent of waste material, and depth of excavation was recorded on the test pit logs. Test pit logs for each landfill can be referenced in Attachment A of each appendix. For health and safety purposes and in accordance with NJDEP Landfill Investigation Technical Guidance (September 2015), test pits were monitored during excavation for Lower Explosive Limit (LEL) with a direct-reading Photo-Ionization Detector (PID) and Multi-gas meter properly calibrated for methane.

Per the Solid Waste Regulations, N.J.A.C. 7:26-1.4, a solid waste landfill is defined as a sanitary landfill, or a "solid waste facility, at which solid waste is deposited on or into the land as fill for the purpose of permanent disposal or storage for a period of time exceeding six months, except that it shall not include any waste facility approved for disposal of hazardous waste". It is generally recognized that scattered debris may exist outside the limits of a consolidated landfill, and these locations are not indicative of the landfill. Based on 2015 test pits observations at FTMM, soils with miscellaneous or isolated singular pieces of debris were differentiated from contiguous solid waste. Therefore in the determination of the refined landfill boundaries specific to FTMM, it is Parsons' professional judgment that test pits containing scattered and noncontiguous debris are outside the landfill bounds and are not considered part of the landfill.

- At the FTMM landfills, test pits fell into three categories based on professional judgment, observations, and practicality:
  - 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
  - 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of *de minimus* quantity; not landfill.
  - 3) Soils only. No solid waste observed; not landfill.

Further test pit details including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale are presented in Table 1 of each landfill appendix.

If solid waste indicative of a landfill was observed within a test pit location near the landfill perimeter, then additional step-out test pits were advanced to further refine the landfill boundary. Step-out locations were based on the 2015 test pits and historic test pits previously performed at the landfills. Locations of the historic and 2015 test pits are presented as Figure 1 of each landfill appendix.

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Upon completion of each test pit, material from the test pit was returned to its origin and the excavated cover soil replaced. The material and cover soil was compacted with the backhoe bucket to restore the original grade.

### 2.2 METHANE GAS SURVEY

In accordance with the June 19, 2015 letter from the U.S. Army to NJDEP, *Landfill Boundary Refinement and Methane Gas Survey* stated methane gas surveys will be conducted at the landfills to monitor the potential presence and concentrations of methane gas at the nine landfills.

Methane gas sampling was performed at a total of 95 locations for the nine landfills. At each location, the methane gas soil gas points were sampled using an AMS gas vapor probe (GVP) kit. The kit consists of steel GVP rods attached to a retractable GVP tip; 3/16-inch polyethylene tubing was pre-threaded through the rods and attached to the tip. The GVP tip had a retractable screened section that allows for remote reading of the landfill gas from the surface of the sampling location. The GVP assembly consisting of the rods, tubing and retractable tip was driven to a sampling depth of 3.5 feet bgs with a slide hammer. At the desired sampling depth, the GVP tip was retracted, and the open end of the tubing at the surface was attached to a LANDTEC Gas Extraction Monitor-2000 (GEM-2000) which pumped and provided an instantaneous measurement of landfill gases at the GVP tip. Landfill gas readings were recorded once the tubing volume was purged and the readings had stabilized. Each gas sample was analyzed for percent methane, percent of methane LEL, percent CO (Carbon Monoxide), and percent oxygen. In some locations, the soil gas probe could not be driven to 3.5 feet bgs because the water table occurred shallower than this depth. At these locations, the soil gas probe was driven to a depth six inches above the water table, and variations on the depth of sample collection are noted on Table 2 of each appendix.

The array of gas sampling points (number and location) was designed to meet the objective of determining the presence and concentration of methane gas at each landfill. The survey included a minimum of five (5) interior locations per landfill, and locations were selected to evaluate the areas of highest methane concentrations, If methane was detected at any one of those locations, then additional locations were added to investigate potential off-site migration of methane gas. A QA/QC methane gas sample was taken 1 per every 10 samples.

Details including the soil gas sampling point ID and landfill gas results are presented in Table 2 of each landfill appendix. Locations of the methane gas soil points and where methane was measured greater than 25 percent of the LEL (at 11 of 95 sample locations) are presented as Figure 2 of each landfill appendix.

### 3.0 SUMMARY OF FINDINGS

Each of the nine FTMM landfills will be discussed as individual appendices to this report. As part of each appendix, the test pit advancement approach, test pit contents, landfill boundary changes, and methane gas survey results are summarized.

### 3.1 TEST PITS

The refined boundaries for each landfill presented in this report are based on historical test pits and soil borings performed in 2010 by FTMM, test pits performed in 2015 as part of this program, and an examination of historical aerial photographs.

Historical test pits and soil borings were reexamined for consistency with the 2015 landfill delineation landfill waste criteria. Waste material observed in the historical test pits included wood, cinders, asphalt, ash, ceramic plates, slag, brick, glass, broken bottles, cans, wires, plastic, concrete, and metal pieces. At select landfills, some historical test pits that were previously designated to contain landfill debris did not appear did not appear to meet the criteria to be considered landfill solid waste. These historical test pits were re-categorized as having miscellaneous singular pieces of debris or scattered debris that was not contiguous, and this debris of *de minimus* quantity is not representative of landfill solid waste. At seven of the nine landfills (FTMM-02, FTMM-03, FTMM-04, FTMM-05, FTMM-12, FTMM-18, and FTMM-25) one or more boundaries were revised from the 2010 landfill boundaries. Both the 2010 and 2015 landfill boundaries are shown on the figures in the landfill-specific appendices.

### 3.2 METHANE GAS SURVEY

Methane gas was detected at a total of 18 gas sampling locations at seven of the nine FTMM landfills, and 11 of those sampling locations exceeded 25 percent of the methane LEL. The eighteen locations were at landfills FTMM-02 (3), FTMM-03 (2), FTMM-04 (2), FTMM-08 (2), FTMM-12 (4), FTMM-14 (4), and FTMM-25 (1). When methane gas was detected at a sampling location, step outs were performed to determine the extent of the methane gas. At the nine FTMM landfills, none of the landfill gas readings at sampling locations (including step outs) on the perimeter of the landfill boundaries had methane detections, nor were greater than 25 percent of the methane LEL. This demonstrates that landfill gases are not migrating off-site at the nine landfills.

Based on a review of NJDEP 7:26-2A, an active or passive venting system at the nine FTMM landfills is not necessary. The regulations state that the detection of 25 percent of the LEL of combustible landfill gases, at the perimeter of the sanitary landfill property, or any concentration of any landfill gases within any structures shall trigger the construction of an induced draft or active venting system. Passive gas venting systems may be designed and constructed initially as a preventive measure against sanitary landfill gas migration however, since there is currently no evidence of landfill gas migration, active or passive gas venting measures are not required at this time.

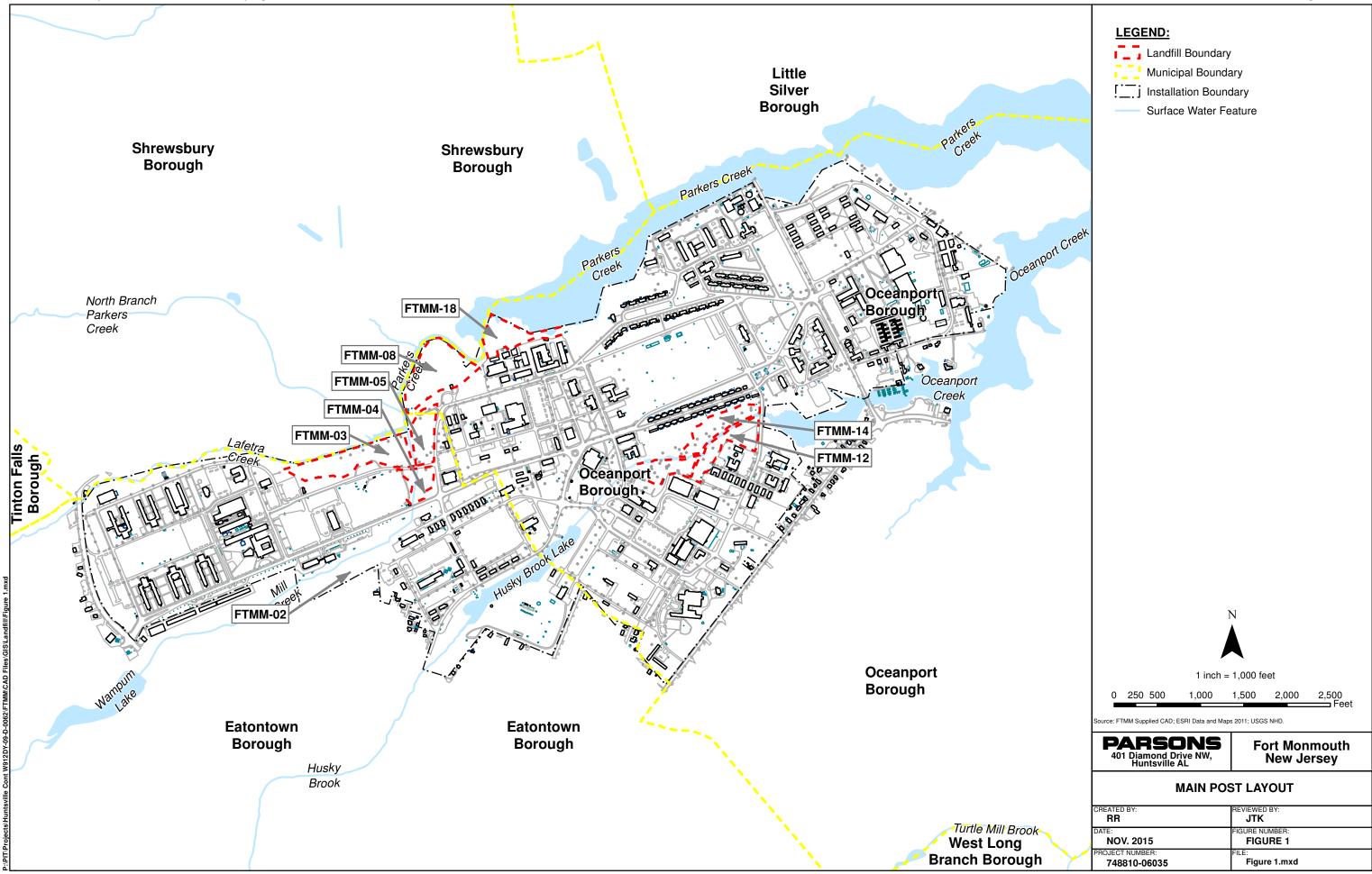
### 4.0 REFERENCES

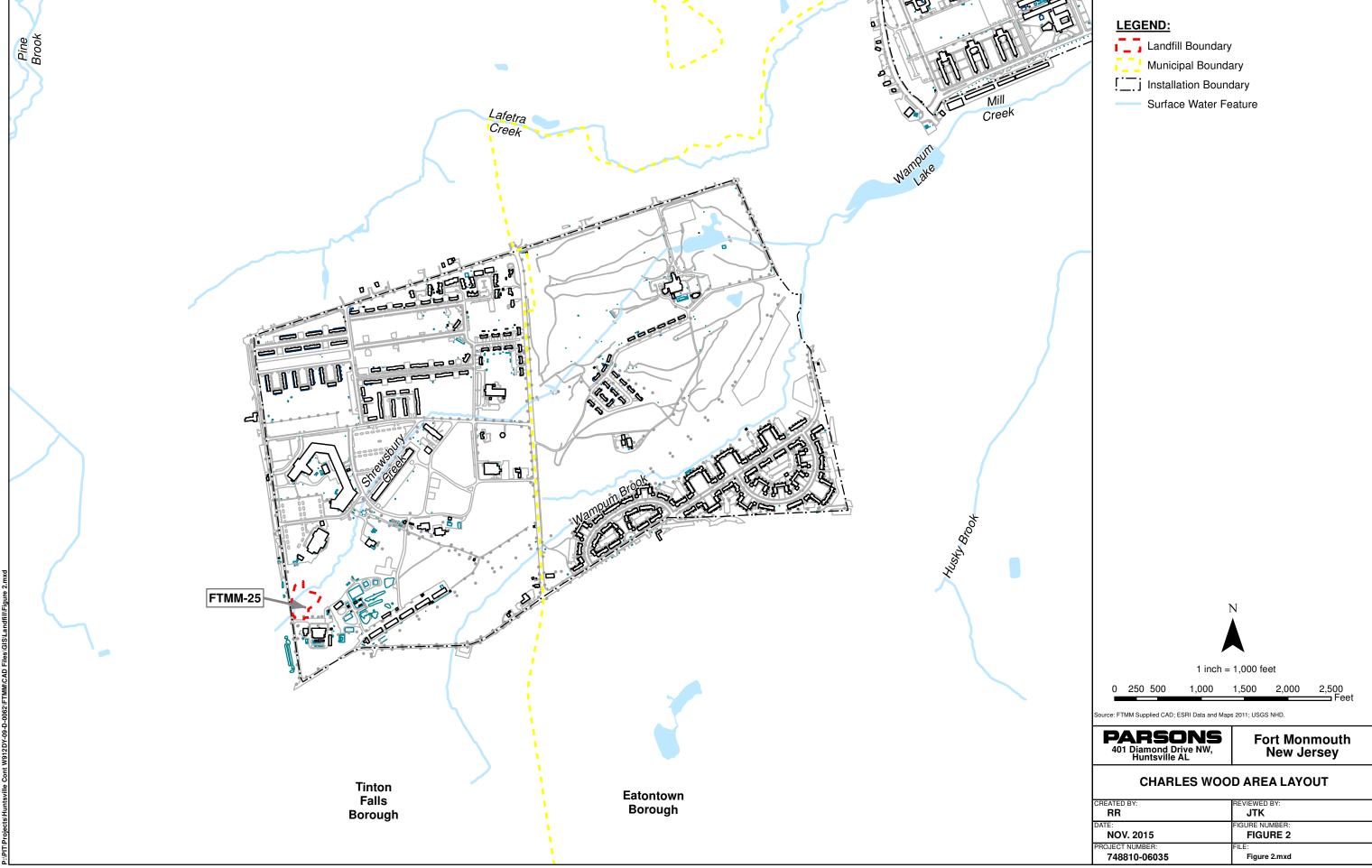
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- New Jersey Department of Environmental Protection. *Landfill Investigation Technical Guidance*, September 2015.
- New Jersey Department of Environmental Protection. *Technical Requirements for Site Remediation*, July 2013.
- Parsons. Remedial Investigation Report for Site FTMM-04, Fort Monmouth, Oceanport,
  Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and
  Support Center, Huntsville, Alabama. August 2014.
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- Parsons. Remedial Investigation Report for Site FTMM-12, Fort Monmouth, Oceanport,
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- Parsons. Remedial Investigation Report for Site FTMM-14, Fort Monmouth, Oceanport,
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  Support Center, Huntsville, Alabama. July 2015.
- Parsons. Remedial Investigation Report for Site FTMM-18, Fort Monmouth, Oceanport,
  Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and
  Support Center, Huntsville, Alabama. October 2015.

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1	APPENDIX A
2	FTMM-02: LANDFILL BOUNDARY REFINEMENT AND
3	METHANE GAS SURVEY RESULTS

# APPENDIX A: FTMM-02 Landfill Boundary Refinement and Methane Gas Survey Results

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A2	Methane Gas Survey Results

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### LIST OF ATTACHMENTS

Attachment	<u>l itle</u>
A-A	Test Pit Logs

### 1.0 LANDFILL BOUNDARY REFINEMENT SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries will be discussed in further detail in the Remedial Investigation (RI) Report for FTMM-02 that will be issued under separate cover. These changes are reflected on **Figure A1**. The historical information review identified data gaps in the 2010 landfill boundaries, specifically at the southwestern boundary and at the southern part of FTMM-02 directly along the former railroad line which needed to be addressed during the landfill boundary refinement field activities. In addition, subsequent to the preparation of the RI Report for FTMM-02, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. Some historical test pits (16C1, 19, 20, 22, 24, and 24A) did not appear to meet the criteria to be considered landfill solid waste. The designation of these historical test pits was modified on **Figure A1** to indicate landfill solid waste was not present.

Test pits during the landfill boundary refinement were advanced along the 2010 landfill boundaries to refine the landfill extent, and to address the data gaps identified along the southern boundary. To form a more comprehensive view of the landfill, additional test pits were performed in other areas of the landfill including: 1) in the western and southwestern corner of FTMM-02 after landfill solid waste was found in that area to better define the horizontal limits of the landfill; 2) in the areas of historical test pits 14 through 17 in the eastern and southeastern area of the landfill to confirm the contents and categorization of those historical test pits; and 3) in the interior of the landfill since there was limited test pit data in this area. Test pits were advanced at a total of 36 locations at FTMM-02 as part of the landfill boundary refinement activities on August 17, August 18, August 28, and August 31, 2015. Historical (2010) and the 2015 test pit locations are provided in **Figure A1**.

Logs for the 2015 test pits are provided in **Attachment A-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table A1**.

Observations of the 2015 test pits along the northern boundary bordering Mill Creek either did not contain landfill solid waste or contained miscellaneous debris such as asphalt, aluminum, paper, plastic, glass, wire, rusted metal, and silt fence. The miscellaneous singular pieces of debris and scattered debris that was not contiguous was categorized as debris of *de minimus* quantity and did not meet the criteria to be considered as part of the delineated landfill. These observations were consistent with the information contained in the Construction Closeout Report (Princeton Hydro, 2011) documenting that the 2009 creek slope re-grading along the FTMM-2 northern creek boundary indicating no landfill debris and only surface debris was found during those activities. Therefore, the FTMM-2 northern landfill boundary was revised as shown on **Figure A1**.

In the western corner, landfill solid waste at least two feet in thickness was observed in M2TP2 and M2TP18, and additional step-out test pits were performed. As a result, the landfill boundary was extended (as shown on **Figure A1**) to the west to incorporate the landfill solid waste found in M2TP23 and M2TP24, and south to the abandoned railroad bed to capture the landfill solid waste found in M2TP19, M2TP20, and M2TP21, and M2TP22.

The 2015 tests pits performed in the eastern and southeastern area of the landfill (M2TP28, M2TP29, M2TP34, M2TP35, and M2TP36) confirmed the presence of landfill solid waste consistent with the historical test pit logs. Therefore, no change in the landfill delineation was made along this boundary.

Based on historical aerial photographs in conjunction with 2015 test pit data, the southern boundary of the landfill was moved north to correspond with the northern edge of the abandoned raised railroad bed where the former railroad bed was constructed prior to any historical record of landfilling in this area. The historical photographs depict the progression of suspected filling activities that occurred to produce the FTMM-02 landfill. The landfill clearly post dated the construction of the raised railroad bed in these photographs, and this physical boundary formed the southern boundary of the landfill. The southern boundary was further refined based on the 2015 test pits which confirmed the presence of landfill solid waste (M2TP9 and M2TP22), or contained scattered debris that is not contiguous (M2TP6 and M2TP11).

**Figure A1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of fourteen (14) landfill gas readings (including one QA/QC sample) were measured at thirteen soil gas locations at FTMM-02 as part of the methane gas survey. Sampling was conducted on July 31, August 3, and August 4, 2015. Methane was detected at three locations (M2SG2, M2SG3, and M2SG4). Two of the locations (M2SG2 and M2SG3) exceeded 25 percent of the methane LEL. These two locations were located on the interior of the landfill The five step out locations (M2SG9, M2SG10, M2SG11, M2SG12, and (west-central). M2SG13) were measured based on the methane detections. Soil gas locations on the perimeter (including step outs) of the landfill did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-02. The methane gas survey indicate the area within the landfill where methane was found above 25 percent of the LEL is limited. The methane detections are most likely attributed to methane gas generating conditions at the landfill, and to natural methane gas generating conditions from the decomposition of organics in this area (FTMM-02 is covered with dense patches of phragmites which may also indicate natural methane gas generating conditions). The landfill gas readings are summarized in **Table A2.** The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are provided in Figure A1.

### 3.0 REFERENCES

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

U.S. Army Office of the Assistant Chief of Staff for Installation Management. 2012. M-2 Landfill (FTMM-02) Remedial Action Progress Report, U.S. Army Garrison Fort Monmouth, Main Post, Fort Monmouth, New Jersey. March 2012.

### **TABLES**

Table A1 Landfill Boundary Refinement Summary

Table A2 Methane Gas Survey Results

## Table A1 Landfill Boundary Refinement Summary Site FTMM-02

## Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments		
M2TP1	Y	1	Solid waste including asphalt, aluminum cans, paper, misc plastic, glass indicative of landfill.		
M2TP2	Y	1	Solid waste including rusty meal, aluminum, pantyhose, glass jars, bottles, rope, lots of misc plastic indicative of landfill.		
M2TP3	N	2	Debris of de minimus quantity; not landfill.		
M2TP4	Y	1	Solid waste including burned lumber, ash, misc plastic, wire, broken glass indicative of landfill.		
M2TP5	N	2	Debris of de minimus quantity; not landfill.		
M2TP6	N	2	Debris of de minimus quantity; not landfill.		
M2TP7	N	3	No solid waste observed; not landfill.		
M2TP8	N	2	Debris of de minimus quantity; not landfill.		
M2TP9	Y	1	Solid waste including wire, glass jars and bottle, misc plastic, burned lumber, metal cans, broken ceramic plates indicative of landfill.		
M2TP10	N	2	Debris of de minimus quantity; not landfill.		
M2TP11	N	2	Debris of de minimus quantity; not landfill.		
M2TP12	N	3	No solid waste observed; not landfill.		
M2TP13	N	2	Debris of de minimus quantity; not landfill.		
M2TP14	N	3	No solid waste observed; not landfill.		
M2TP15	Y	1	Solid waste including wood chips, metal, concrete indicative of landfill.		
M2TP16	N	2	Debris of de minimus quantity; not landfill.		
M2TP17	N	2	Debris of de minimus quantity; not landfill.		
M2TP18	Y	1	Solid waste including misc plastic, glass jar and bottles, photographic film, broken glass, metal wire, paper, wood, concrete indicative of landfill.		
M2TP19	Y	1	olid waste including tire, glass bottle, paper, misc. plastic, metal, film indicative of landfill.		
M2TP20	Y	1	solid waste including old trash can, glass bottles, misc plastic ,rusty metal, paper indicative of landfill.		
M2TP21	Y	1	Solid waste including paper, glass bottles, misc plastic indicative of landfill.		
M2TP22	Y	1	Solid waste including lumber, misc plastic, glass bottles and jars, paper, hubcap, comb, indicative of landfill.		
M2TP23	Y	1	Solid waste including drywall, plastic, glass bottles, misc plastic indicative of landfill.		
M2TP24	Y	1	Solid waste including glass bottles/jars, misc plastic, shoe sole, metal pipe indicative of landfill.		
M2TP25	N	3	No solid waste observed; not landfill.		
M2TP26	N	3	No solid waste observed; not landfill.		
M2TP27	Y	1	Solid waste including glass bottles, rusted mteal, misc plastic indicative of landfill.		
M2TP28	Y	1	Solid waste including burned wood, plastic bag, misc plastic, glass bottlems, broken glass, paper, nylons, plastic, misc metal indicative of landfill.		
M2TP29	Y	1	Solid waste including misc plastic, plastic bags, glass bottles, broken glass, plastic bottles, metal wire, fabric, rusting metal indicative of landfill.		
M2TP30	N	2	Debris of de minimus quantity; not landfill.		
M2TP31	Y	1	Solid waste including ash, terracotta tile, wood, fabric, concrete indicative of landfill.		
M2TP32	Y	1	Solid waste including ash, burned wood, broken glass, misc metal, misc plastic, metal wire indicative of landfill.		
M2TP33	N	3	No solid waste observed; not landfill.		
M2TP34	Y	1	Solid waste including concrete, wire, ash, coal indicative of landfill.		
M2TP35	Y	1	Solid waste including terracotta tile, broken glass, glass bottles, broken concrete, brick indicative of landfill.		
M2TP36	Y	1	Solid waste including ash, coal, slag, terracotta tile, blue tile indicative of landfill.		
M2TP37	Y	1	Solid waste including ash, coal, burned wood, brick, misc. plastic, concrete, small pieces of metal, glass bottles indicative of landfill.		

#### Category notes:

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

Table A2 Methane Gas Survey Results Site FTMM-02

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

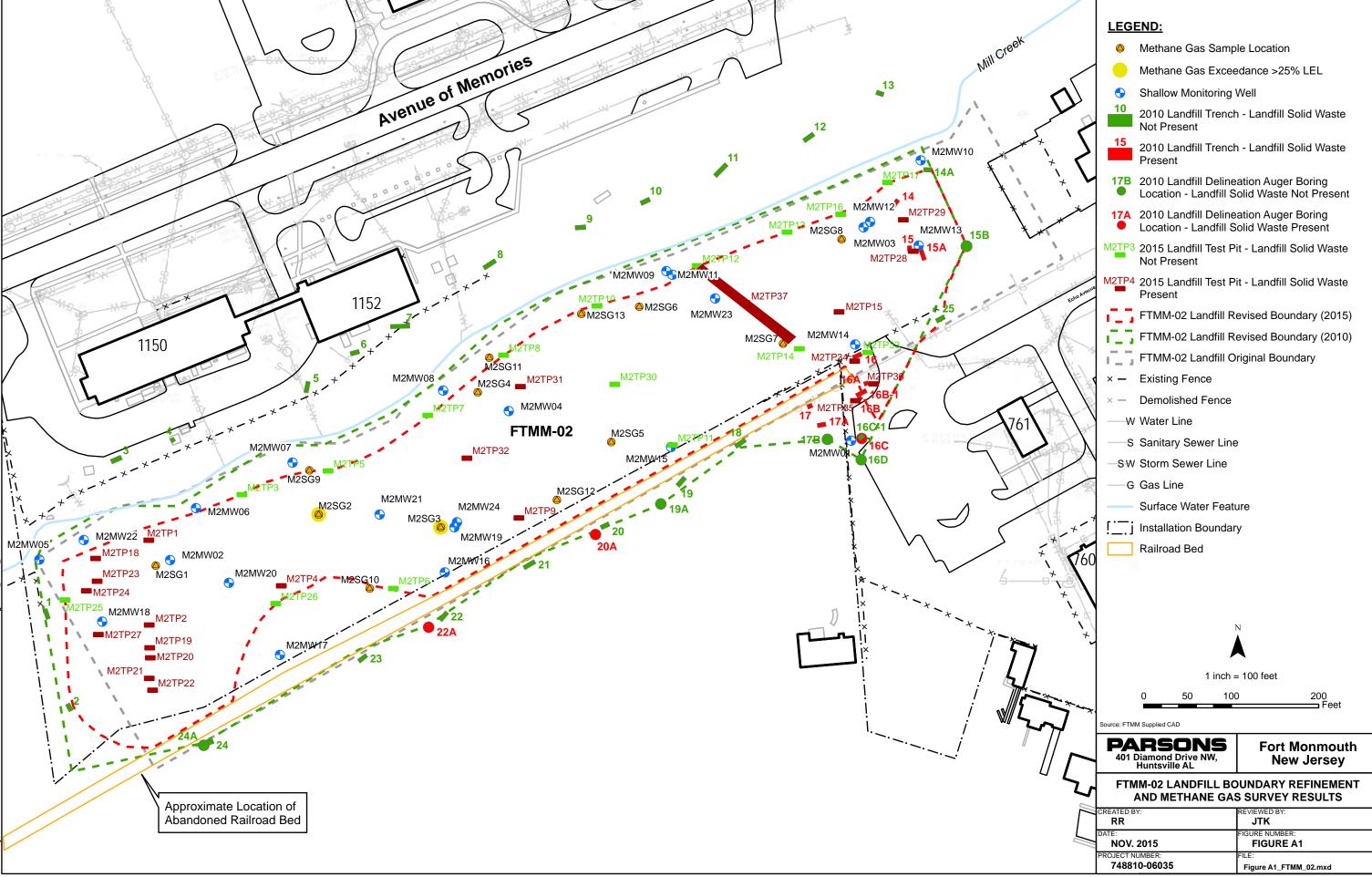
Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M2SG1	8/3/2015	0.0	0.0	5.0	16.4	
M2SG2	7/31/2015	14.5	OOR	15.3	1.2	
M2SG3	8/3/2015	8.8	OOR	8.0	1.4	
M2SG4	7/31/2015	1.2	24.0	4.5	9.9	
M2SG5	7/31/2015	0.0	0.0	1.1	19.8	
M2SG6	7/31/2015	0.0	0.0	4.4	16.6	
M2SG7	8/3/2015	0.0	0.0	5.6	15.2	
M2SG8	7/31/2015	0.0	0.0	4.9	15.6	
M2SG8QA	7/31/2015	0.0	0.0	3.8	15.8	QA Sample
M2SG9	8/4/2015	0.0	0.0	3.1	17.6	Step out
M2SG10	8/4/2015	0.0	0.0	6.5	15.3	Step out
M2SG11	8/4/2015	0.0	0.0	0.8	19.8	Step out
M2SG12	8/4/2015	0.0	0.0	2.1	18.5	Step out
M2SG13	8/4/2015	0.0	0.0	1.1	20.1	Step out

### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

### **FIGURES**

Figure A1 Landfill Boundary Refinement and Methane Gas Survey Results



### **ATTACHMENTS**

Attachment A-A Test Pit Logs

				7	TES	ST PIT FIELD	) ]	LOG	PAGE 1 OF	
		PAR	SONS			CLIENT:		TEST PIT NO.: M2TPI		
PROJECT: LOCATION	I:	FT	MM nd fill	M2				JOB NUMBER: 74881 GROUND ELEV: INSPECTOR: P.IU 400		-
TEST PIT DAT	`A							CONTRACTOR: AWT		_
LENGTH		нто	DEPTH		EX	CAVATION METHOD	_	START DATE: 081815		_
le'	18		4'					COMPLETION DATE: 08/8/5	0925	-1
GROUNDWAT		TA	211		7	1 1 7	-	CHECKED BY:		-1
DATE / TIM DEPTH TO			N	A	X		-	LOCATION SKETCH-	A	$\dashv$
MONITORING				/			-1	LOCATION SKETCH: Circle	Ī	
INSTRUMEN			TECTOR	BACKGRO	DUND	TIME/DATE	$\neg$	9 17	Í	- 1
Multi-rae		voc/	co/425	Calibra	ted	081815 0730		499	North	
Plus			L/OXY	Passe	L			* 1		
REMARKS:								\ \		- 1
		c	AMPLE	STRATA		CAMDII	E DE	NTS	EXCAVATION	$\dashv$
		Ť	AMPLE	SIKAIA		Shiri Li	LUL	SCRI HOR	EFFORT	
DEPTH (FT)	voc	NO.	DEPTH						E - Easy	
									M - Moderate	- 1
	-					-1	_		D - Difficult	=
. —		-		}		- 2'				4
1				-	- 1	3/4 gravel for	10	oad		-
2				1	-	3/4 gravel for it fence banis		61.01		4
				-	- 5	11t tence barre	er	602		7
3					- h.	-4'				
		- 1			-			1 1 - +		]
4				4		Sandy loam n	M	xed w/ was e,	1	4
. —	1	- 1		-	_ 4	n cluding: asph	ىلم	xed w/ waste, to aluminum cans stic, glass, etc. w/mothed yellow, green	,	4
5	- 1	- 1		-	- 4	paper, mide.p	la	stic, glass, etc.		+
6	1	- 1	1	H	-	dkbrown-black	=, W	U mottled yellow, green	,	-
*					n	rulti-meter re	40	Cina: D	-	7
7	- 1					, ,,,				
			1		_					]
8				_	-					_
				-	-					-
9				+	-					-
10			1	-	-					$\dashv$
10-		- 1		-					1	+
11		1	1							1
			1							
12										]
	1									1
13										4
				-						4
14				+						+
15										1

										PAGE I OF	
					TEST	Γ PIT FI	ELD	LOG			
		PAR	SONS			CLIENT:		TEST PIT NO.:	M2TP2		
PROJECT:		FI	MH ndfill	1 M2		**		JOB NUMBER: GROUND ELEV: INSPECTOR:	748816 R.M.Don		_
TEST PIT DA	TA				7.104 V 101 V			CONTRACTOR:	AWT	ala	_
LENGTH	WI	DTH	DEPTH			ATION METHOD		START DATE:	081815/	1015	_
(Q'			4'	mini-	escav	ator		COMPLETION DATE	081815		_
GROUNDWAT DATE / TIN		IIA		111	T	1	7 .	CHECKED BY:			_
DEPTH TO		2	14	IA				LOCATION SKETCH		<b>A</b>	
MONITORING	DATA		france	*				LOCATION SKETCH			
INSTRUME		,	TECTOR	BACKGR		TIME/DATE	5				
multi-r	al		COHOS	-	7	06/8/5/	0730			North	
plus		LEI	loxy	pas	Gen			! []			
REMARKS:								NTS			
		S	AMPLE	STRATA			SAMPLE D	ESCRIPTION		EXCAVATION	_
										EFFORT	
DEPTH (FT)	voc	NO.	DEPTH							E - Easy	
										M - Moderate D - Difficult	
					- 0-	I					$\neg$
1							. /	, -11			
	1				_ bu	own, silte	loam	, NOW		1	
2		1					~				
					- 5+	HA, W/WA	ate in	cluding 4	usting		4
3				-	- inox	60 alum	inum	Dandha	. (		+
4					- Ola	100,	1 11	cluding us, pandyhers, rope, s	100		-
7				-	- 9	os jars !	DOUL	es, rope,	10189		+
5		1			- mi:	sc. Plasti	C				7
		- 1			_						]
6		1		_	_ mul	lti-rae re	adin	0.10			1
. —		- 1		-	_		(	7.0			+
7			- 1	-	-			<b>O</b>			+
8			1	1	_						$\forall$
				1	-						7
9	- 1	- 1	1	$\perp$	_						]
			1		_						1
10		- 1		_	-						4
		1	1	H	-						+
11				-	-					19	$\dashv$
12				-							1
			- 1								
13											1
				L							4
14	1			+	-						-
15											1

	TEST PIT FIEL	D LOG	PAGE 1 OF
PARSONS	CLIENT:	TEST PIT NO.: M2TP2	
PROJECT: FTUM LOCATION: Landfille	2	JOB NUMBER: 7488   1	
TECT DIT DATA		INSPECTOR: LUCDO	
TEST PIT DATA  LENGTH WIDTH DEPTH  Le' /B" 4'	EXCAVATION METHOD	CONTRACTOR: AWT   START DATE: 00\9\5   COMPLETION DATE: 08 5 5	0054
GROUNDWATER DATA		CHECKED BY:	
DATE / TIME		LOCATION SKETCH	
MONITORING DATA		LOCATION SKETCH:	_
	CKGROUND TIME/DATE		
Multi Rae VOC COHOS C	Pal. 021815/0930		North
REMARKS: LEY OXY ]	11,000	S silt fer	u, waste
ALMAKS.		NTS	,,,,,,
DEPTH (FT) VOC NO. DEPTH	SAM	PLE DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1	SAA, increased to orange sorted sorted sorted approx. 1.5'   pit; 314 grathisarea waste applead silt fence @ 5   Includes alass	y sandyloam,  sine sand grading sand, med., well  note graves road  ogs @ S. end og  nel for road in  us just below S. end of pit.  ijar, misc. glastic, abuninum can,	

			T	EST PIT	FIELD	LOG		PAGE 1 OF	
	PAR:	SONS		CLIENT:		TEST PIT NO.:	M2TP2	+4	
PROJECT:	F	ПИМ				JOB NUMBER:	748810		
LOCATION:	Lo	and fil	1112			GROUND ELEV:			
						INSPECTOR:	12.149m	ald	
TEST PIT DATA	*		,			CONTRACTOR:	AWT		
	WIDTH	DEPTH		EXCAVATION MET	HOD	START DATE:		2950	
10'	18"	4.'	mini	excavato		COMPLETION DATE	08/8/5		-
GROUNDWATER I	DATA			7	7	CHECKED BY:	<u> </u>		
DATE / TIME DEPTH TO WAT	TED	N	1/4	///	1/	LOCATION SKETCH			
MONITORING DAT		1 4			<u> </u>	- fer		- 1	
INSTRUMENT		TECTOR	BACKGROUT	ND TIM	E/DATE	T	7		
Multi Rae		100/HZS		081815				North	n
Plus		Noxy	Passed		lu -	l	7		
REMARKS:		7 1							
						NTS		7	
	S./	AMPLE	STRATA		SAMPLE D	ESCRIPTION		EXCAVATION	
DEPTH (FT) VOC	NO.	DEPTH						E - Easy	
DETIN(11)	. No.	DEFIN						M - Moderate	
								D - Difficult	
			_	0-2.5					-
1			+	butum cil	Ha Dam	0 1.	1 (0.11)		4
,	1 1	1	H	13000011, 51	( 9 10 m)	Varge Tree	100ts (3+")	1	4
2			+	2,5-4.5	7	large tree d, burned i , wire, be			-
3		1	-	waste - b	lart sa	d bused	' ba.		7
			1	ash misc	nlad:	, - 1	umen,		7
4				,	Plastic	, wire, be	okenglass		]
							O		
5		1							-
	1	1	-						$\dashv$
6	1 1		+						+
7		1	-						-
		1							7
8			$\perp_{\nu}$	nu Oti-100	loading:	A-			]
		ŀ	L'	nulti-rae	raction ing.	U		(	
9			4						4
—			-						-
10			+						-
11			-						-
		1	+						-
12									
13									1
			_						4
14			+						+
15			-						-
							1		-

			TE	ST PIT FIEL	D LOG		PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.:	M2TP5	
PROJECT:	FI				JOB NUMBER:	74981	D
LOCATION	i: Las	dfill 1	42		GROUND ELEV:		
TECT NY D. C	D. N				INSPECTOR:	R.McDa	nold
TEST PIT DAT	WIDTH	DEPTH	E	XCAVATION METHOD	CONTRACTOR: START DATE:	091915/	119737
Co'	19"	4.5'		excavator	C12-45-0, 214-0, 41-0	E: 08/8/5	1
GROUNDWAT	TER DATA				CHECKED BY:	<u> </u>	<del></del>
DATE / TIM	ИЕ	1-1	IA /	1			
DEPTH TO		111	114 /		LOCATION SKETCH		1
MONITORING						1	
Multi-		COH,5	Cal.	081815/0730			North
Plus		1 0x4	passed	1010,0,010100		Ruento	140/01
REMARKS:	1 1005	1 1				!} waste	
					NT	S	T
	S	AMPLE	STRATA	SAM	PLE DESCRIPTION		EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate
							D - Difficult
. —			F 0	-1.5			-
1			-	brown silty so	endy loam		-
2				5-4.5	U		
			Τ,		baca. d	1: -	
3				5AA increasi	gonna gr	haring	
			-			×, 0	1 -
4			+	well sorted,			1 -
5			<b>-</b>	. Some waste in	icluding m	is c. plastic,	1 -
				Coke bottle, sm metal.	all hits of ru	isted	
6				and solly, sin	0 0,13-6		
			F .	Waste appea	as most con	centrated	_
7			+ '	was appear	11 +	- 4 -	-
8				@ S. end of pi	+, tapening,	ro ro	
				wrote @ N.	end		
9							
			- h	nulfi-ral readi	ing: A		_
10			+ '	A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	J		-
11			-	7 7 1		X.	-
"——			- 0	manhale w/	Vent Stack,	sign	-
12			L	manhale w/ post immediat	thy west o	1 TP5	
				F	1	0	
13							_
,		7	F				-
14			+			-	-
15							

		TEST PIT FIEL	D LOG	PAGE 1 OF 1
PAR	SONS	CLIENT:	TEST PIT NO.: M2TP1	e
	MMM and fill h	12	JOB NUMBER: 7499 GROUND ELEV:	
				Donald
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	CONTRACTOR: AWAY	
u' 3'	7.	minivexcavator	COMPLETION DATE: 08191	
GROUNDWATER DATA		777	CHECKED BY:	
DATE / TIME	0835			
DEPTH TO WATER	4'		LOCATION SKETCH:	<b>†</b>
MONITORING DATA			_	
Multi-Rae Voi		REGROUND TIME/DATE all. 081915/0920 PASSEL		l North
REMARKS:	1 /		310' S. Te	ince
	SAMPLE STRA	TA SAMPI	LE DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH	5.5.4.1	LE PLACE HOW	EFFORT E - Easy M - Moderate D - Difficult
1		le long exposed  underground  "I"-cross- section  multi-vae read	ing: 0  a bottom of testpit  prox. 10' from	

	TEST PIT FIELI	DLOG	PAGE 1 OF
PARSONS	CLIENT:	TEST PIT NO.: M2TP	7
PROJECT: FTM M LOCATION: Land Fill I	12	JOB NUMBER: 7488 GROUND ELEV: INSPECTOR: 12.MG	
TEST PIT DATA  LENGTH WIDTH DEPTH  O' 18" 4.5'  GROUNDWATER DATA  DATE / TIME	EXCAVATION METHOD Migniple (avator)	CONTRACTOR: AVIT	5/0817
Multi-rae VOC/CO/H,S Co plus LEZ/CH4	ACKGROUND TIMEDATE PUBLISHED 081815/0730	LOCATION SKETCH:	. North
REMARKS:		NTS	
DEPTH (FT) VOC NO. DEPTH	RATA SAMP	LE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	brown silty sa 1.5-4.5 brange sand med.grained, No waste enco multi-gas meter		ist

DEPTH (FT) VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E - Easy M · Moderate D · Difficult   - 0-3.5 Sifty sandy /oam, brown, wot zone  - 3.5 - 4 SAA, top of watte a r4'. Waste includes brick, thisc, plastic, - glassottle, plastic cap, 5m. pieces of conacts  oxidized (rusted) C old 1  - multivae reading: 6  - multivae reading: 6				T	EST PIT F	IELD	LOG	PAGE 1 OF
PROJECT: LOCATION  M2 Landfill  GROUND ELEY  TEST PIT DATA  LENGTH WIDTH DEPTH  LENGTH WIDTH  DEPTH OWARR  DATE/TIME  DEPTH OWARR  DATE/TIME  DEPTH OWARR  MONITORING DATA  PLUS  REMARKS:  SAMPLE DESCRIPTION  BACKGROUND  TIMEDATE  MONITORING DATA  REMARKS:  SAMPLE DESCRIPTION  BACKGROUND  TIMEDATE  MONITORING DATA  STRATA  SAMPLE DESCRIPTION  BY AND DEPTH  DEPTH OT)  NOC NO DEPTH  DETHOT)  NOC NO DEPTH  DATE/TIME  DEPTH OT)  NOC NO DEPTH  DETHOT)  NOC NO DEPTH  DETHOT)  NOC NO DEPTH  DETHOT)  NOC NO DEPTH  DATE/TIME  DETHOT)  NOC NO DEPTH  DETHOT  NOC NO DEPTH  NOC NO DEPTH  DETHOT  NOC NO DEPTH  DETHOT  NOC NO DEPTH  NOC NO DEPTH  DETHOT  NOC NO DEPTH  NOC NO DEPTH  DETHOT  NOC NO DEPTH  DETHOT		PAR	SONS		CLIENT:		TEST PIT NO.: M2TP8	3
TEST PIT DATA  LENGTH WIDTH DEPTH EXCAVATION METHOD  LENGTH WIDTH DEPTH EXCAVATION METHOD  GROUND WATER DATA  DATA TIME  DEPTH TO WATER  MONTORNO DATA  STRINBATE  DEPTH TO WOC NO. DEPTH  DEPTHOTO VOC  NO. DEPTH  DEPTHOTO VOC  NO. DEPTH  DATA  SAMPLE  STRATA DATE  DECATION SKETCHE  LOCATION SKETCHE	PROJECT:	FT	им					
TEST PIT DATA  LENGTH WIDTH DEPTH EXCAVATION METHOD  () (6) 4' PMIN-EX  GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  MONITORNO DATA  STRAINST  DEPTH TO WATER  MONITORNO DATA  STRAINST  DEPTH TO WATER  SAMPLE DESCRIPTION  EXCAVATION  DEPTH  BETORT  E - Pay  M. Modelare  D. Difficult  D. Diffi	LOCATION:	M	2 Lan	dfill			The second reference of results of the second secon	
LENOTH WIDTH DEPTH EXCAVATION METHOD START DATE (B) 10/5 07/55 (GROUNDWATER DATA DATE (TIME DEPTH TO WATER DATA DEPTH TO WATER DATA DEPTH TO WATER MONTORING DATA  INSTRUMENT DETECTOR BACKGROUND TIMEDATE CLUCK DEPTH OF NOTH PLANE STRATA SAMPLE DESCRIPTION  REMARKS:    SAMPLE STRATA   SAMPLE DESCRIPTION   EXCAVATION EFFORT							INSPECTOR: [2,149]	mald
GROUNDWATER DATA  GROUNDWATER DATA  DATE THATE  DEPTH TO WATER  MONITORING DATA  SIRRINGIN DELICTOR  PLUS LEVICHA PASSEL  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  SAMPLE STRATA  SAMPLE DESCRIPTION  BECKANATION  EFFORT  E-Easy  M. Modernic  D. Difficult  1  3.5 - 4  SAM, top g waste and,  waste includes beick, invisc, plastic,  glissottle, plastic cap, sm. pieces g conacts  Oxidized (rusted) Color  multivae reading: 5  multivae reading: 5  multivae reading: 5  multivae reading: 5	TEST PIT DATA							
CROUNDWATER DATA  DATE (TIME  DEFIT TO WATER  MONITORING DATA  INSTRUMENT  MALFI RAL  SSAMPLE  STRAYA  SAMPLE  STRAYA  DEFITHOFT  VOC  NO.  DEFTH  THEDATE  MALFIRE  STRAYA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. F. Esp.  M. Moderner  D. Difficult  1  2  3,5-4  SAM, top of waste and your and waste and your and you						D		
DATE/TIME  DEPTH TO WATER  MONTORING DATA  PILLY RAZ VOC/CO/N25 (alibration) OBIO 15/0730  PILLS  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Fazy  M. Moderne D. DATE:  3 SAM, top of wate and wate and wate includes buck, imisc, plastic,  grandly plastic cap, Sm. pieces of conacts  Oxidized (rusted) Color  Multivae reading: D  Multivae reading: D  Multivae reading: D		1	4.	mi	M-ex		1	0015
DEPTH TO WATER  MONTORNO DATA  NSTREMENT  PLUS  LEVIC Ha  PASSEL  SAMPLE  STRATA  DEFTH FT)  VOC  NO.  DEFTH  STRATA  DEFTH FT)  VOC  NO.  DEFTH  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E - Easy  M. Moderae  D. Deffield  1  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E - Easy  M. Moderae  D. Deffield  Sample Description  EFFORT  E - Easy  M. Moderae  D. Deffield  Sample Description  EFFORT  E - Easy  M. Moderae  D. Deffield  Sample Description  EFFORT  E - Easy  M. Moderae  D. Deffield  The Date of the Color of the		DATA	Α.	111	1 /1 /	7	CHECKED BY:	
MONITORING DATA  INSTRUMENT  MALL DEFECTOR  BACKGROUND  TIMEDATE  MULTI RAL  VOC/CO/M-S Calbration  Plus  LEW/CH4  Passed  SAMPLE STRATA  DEFTHIFT)  VOC  NO. DEFTH  DEFTHIFT)  VOC  NO. DEFTH  DEFTHIFT)  VOC  NO. DEFTH  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Fary  M. Moderate  D. Dafficult  2  3.5 - 4  SAA, top of waste (20 v4'  Waste in cludes buick, muisc, plastic,  glassottly, plastic cap, Sm. pieces of conasts  Oxidized (rusteal) Color  Multivae reading: D  Multivae reading: D		TER		HA		17	LOCATION SKETCH	
INSTRUMENT DETECTOR BACKGROUND TIMEDATE PULLY READ VOC(10.1/1.5) (Abbratis) 091015/0730 Plus Levi(Ha Pamed  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT E. Easy M. Moderate D. Difficult  1				4	1			<b>—</b> Î
Multival Mading: 0  Morth Plus Levicha Paned  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT E-Easy M-Moderate D-Difficult  3.5-4  SAA, top of waste (a) n4' wate includes brick, imisc, plastic, glassottle, plastic cap, Sm. pieces of conacts  Oxidized (rusted) Color  multival Mading: O  Morth  EXCAVATION EFFORT E-Easy M-Moderate D-Difficult  Matte includes brick, imisc, plastic, glassottle, plastic cap, Sm. pieces of conacts  Oxidized (rusted) Color  multival Mading: O			TECTOR	BACKGROU	JND TIME/DA	TE		
Plus Levi(Ha Passet  SAMPLE STRATA  DEFTHIFT) VOC NO. DEFTH  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E Easy M. Moderate D. Difficult  2  3.5 - 4  SAAA, top of wastl@ n4'  watte includes brick, misc, plastic, glassottle, plastic cap, Sm. pieces of concepts Oxidized (rusted) Color  multivae reading: D  multivae reading: D	Multi Ras		***					North
DEPTH (FT) VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E - Easy M · Moderate D · Difficult   - 0-3.5 Sifty sandy /oam, brown, wot zone  - 3.5 - 4 SAA, top of watte a r4'. Waste includes brick, thisc, plastic, - glassottle, plastic cap, 5m. pieces of conacts  oxidized (rusted) C old 1  - multivae reading: 6  - multivae reading: 6	Plus						] []	
DEFTH (FT) VOC NO DEFTH  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E-Bay  M. Moderate  D-3.5  Sifty sandy foam, brown, wot zone  3,5-4  SAA, top of waste and, waste includes brick, misc, plastic, glastoothe, plastic cup, sm. pieces of conaets  oxidized (rusted) Color  multi-vae reading: D-  Multi-vae	REMARKS:					7		
DEFTH (T) VOC NO. DEFTH  DEFTH (T) VOC NO. DEF	Т Т	_				CAMPAGE		Towns
DEPTH(PT) VOC NO. DEPTH    C - Silty sandy   0 am, brown, wot zone		S	AMPLE	STRATA		SAMPLE	DESCRIPTION	
M. Moderate D. Difficult  1	DEPTH (FT) VC	c No	DEPTH					
D-Difficult  1								
3,5-4  3,5-4  SAA, top of waste@n4'.  waste includes brick, misc. plastic,  glassottle, plastic cap, Sm. pieces of conacto  oxidized (rusted) Colon  multivae reading: 6								
3,5-4  SAA, top of waste@n4!  waste includes brick, misc. plastic, glassothe, plastic cap, Sm. pieces of conacto  oxidized (rusted) Color  multi-vae reading: 0-  multi-vae reading: 0-				_	0-3.5	,	1	_
3,5-4  SAA, top of waste@n4!  waste includes brick, misc. plastic, glassothe, plastic cap, Sm. pieces of conacto  oxidized (rusted) Color  multi-vae reading: 0-  multi-vae reading: 0-	1			+	Silty sand	y loan	n, brown, wot zone	_
3.5-4  SAA, top of waste @ n4'.  Waste includes brick, misc, plastic,  glassottle, plastic cup, Sm. pieces of conacts  Oxidized (rusted) Color  multi-vae reading: 5-  8  9  10  11  22  3  4	,			-		J	,	-
6	*			+	3.5-4			-
6	3		- 1		SAA, top &	2 Was	tears'	_
6					waste incl	des be	ick miss planting	
6	4	1 1			glastotti, ne	die co	Cm pigga page +	
6		1 1			o - orice, pra	sticcup	, sm. pieces of conacto	_
6	5			+	oxidized,	(rusted)	Col81	_
7	,			F				1 4
	6			+	Al:			1 -
	7				multival Ma	iding:	6	1 1
				+		U		1 1
	8			工				
				L				
	9		1					_
	. —	1 1	- 1	-				-
	10			+				1 -
	,	1 1		-				1 -
3				+				
3	2							
	3			$\perp$				
	4			-				-
	5			-				-

		T	EST PIT FIEI	D LOG			rade 1 or 1	
P	ARSONS		CLIENT:	TEST PIT	NO.:	M2TP9		
PROJECT:	ETM M Otand F	il M2		JOB NUMBE GROUND EL INSPECTOR:	EV:	748810 K.M.Don	ald	_
TEST PIT DATA				CONTRACTO	OR:	AWI		
LENGTH WIDT	н рертн		EXCAVATION METHOD	START DATE	3:	081915		_
6' 18"	Al	mini	excavator	COMPLETIO	N DATE			
GROUNDWATER DATA	4			CHECKED B	Y:			_
DATE / TIME	1.1	1		-				
DEPTH TO WATER	1 1/1	14/		LOCATION S			1	
MONITORING DATA					fen	>16'	_	- 1
INSTRUMENT	DETECTOR	BACKGROU			T		1	- 1
	20/CO/H25	cal.	1 081915 0720				North	
	EL OXY	passe	4	_		>8'		
REMARKS:					−fæ NTS	vice -	_	- 1
	SAMPLE	STRATA	SAN	APLE DESCRIPTION			EXCAVATION	
							EFFORT	
DEPTH (FT) VOC	NO. DEPTH						E - Easy	
							M - Moderate	- 1
	-		0 - 11				D - Difficult	-
		-	0-1'	0	_			$\dashv$
'		+	brown silty.	loan, loo	W			-
2		-	0					-10
		+	1-4'					4
3			SAA, waste m	xed in. h	Jast	e includes		٦
		T	Wile alass mia	11 + hottle.	na i	50 3/2-1:		7
4				or i bolicos,	1001	sc. plastic,		]
			buried lumb	ey, meta	l Ca	ens,		
5		4	SAA, waste mi wile, glass goja burned lumb broken ceras Send of pit is	nic plate				_
		_		- 1				4
6	1 1	+	send of pit is	approx. &	3/1	from		4
_		-	boundaryfen	C.	U		ĺ	$\dashv$
7		+	,					-
8		-	, m. (112 a 112	d'i				+
°+		+	· multi-rae lla	ring: 0				$\dashv$
9				O				7
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		T						
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12		1						
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13								-
		_						4
14		+						+
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			TES	T PIT FIEL	DLOG	FAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: M2TP	11
PROJECT: LOCATIO	4	MM ndfill	M2			10 onald
TEST PIT DA	TA				CONTRACTOR: AWT	
LENGTH	WIDTH 3/26*	DEPTH 3'		AVATION METHOD	START DATE: 081914	The second secon
T'		) )	minie	xcavator	COMPLETION DATE: () 8/9/4	2
GROUNDWA' DATE / TIN		* 11	1	1 7	CHECKED BY:	
DEPTH TO		M	AX	1	LOCATION SKETCH:	4
MONITORING	G DATA				- fence -	
INSTRUME		TECTOR	BACKGROUND	TIME/DATE		
Multi-R		CO/H25	cal.	081915/0720		North
Plus	LEL	Oxy	Dassell	,	invis fence	
REMARKS:			1		NIS	
	S	AMPLE	STRATA	SAMP	LE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			8	0.0		D - Difficult
1			- 0-	-0.8	1	
				brown silty lo waste inclu	am, dry	
2				waste inclu	des asphabt	1 ]
			Fa	1 41		
3		1		3-3'		1 4
4			-	SAA, no aspha	A, large pieces of luding one @ 3	
'			十	consiete inc	luding one @ 3	1 -
5				e	1-11 aine Stranging	
				some metal	(old pipe, Strapping	
6			+ m.	ulti-rae readin	0 . 6	
			L /***	W. True readin	7.0	1 -
7			+		9	-
8			-			
*						
9						
			T			
10						
			-			
11			-			1 -
12		1	H			-
12			+			-
13						1 -1
			<del></del>			1
14						1 1
15			Ė			

		TEST PIT FIELD	LOG	PAGE 1 OF
PARS	SONS	CLIENT:	TEST PIT NO.: M2TP12	
PROJECT: ETM LOCATION: LOCATION:	1M ndfill M2		JOB NUMBER: 7488 GROUND ELEV:	10
TEST PIT DATA		And the state of t	INSPECTOR: K. MC CONTRACTOR: AW	Donald
LENGTH WIDTH	DEPTH 70	EXCAVATION METHOD		1540
GROUNDWATER DATA DATE / TIME	1/16		CHECKED BY:	
DEPTH TO WATER	N/A	TUUV	LOCATION SKETCH:	<b>A</b>
Multi-Rae voc/	co/H2S (	ROUND TIME/DATE  081715/1200  Sed		North
	AMPLE STRATA	SAMPI E	NTS DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH STRATA			EFFORT E - Easy M - Moderate D - Difficult
1		-0-2.5-Silty, Bandy Noot zone. Sor 2.5-4 SAA, branch Sl. darker Nodebris Multi-lae read	est Stumps,	

		TEST PIT FIEL	D LOG	PAGE 1 OF
PARS	SONS	CLIENT:	TEST PIT NO.: M2TP	13
PROJECT: F	TMM		JOB NUMBER: 7488	10
LOCATION: 1	andfill M2		GROUND ELEV:	
				) on ald
TEST PIT DATA  LENGTH WIDTH	DEPTH	EVCAVATION METHOD	START DATE: 1817	NT NIA20
10' 18"	1-1-	EXCAVATION METHOD	COMPLETION DATE: 0817	
GROUNDWATER DATA	5,- 7.0.1	CI Excava . C.	CHECKED BY:	19
DATE / TIME	NIA		<	
DEPTH TO WATER	19/47		LOCATION SKETCH:	<b>†</b>
MONITORING DATA				
1 41 4	TECTOR BACKG			1
	0/H25 (a)		2	North
	oxy Pass	le I		
REMARKS:			NTS	
SA	AMPLE STRATA	SAMP	LE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
_				M - Moderate D - Difficult
1			alty loam alty coal (former moc. other debuis to, paper) brown sand unterfilter fabric  Multikal: O	

				7	TEST PIT FIE	LD LO	)G	
		PAR	SONS		CLIENT:	TES	ST PIT NO .: M2TBP	14
PROJECT LOCATIO			44-Lau 2TP14		(02)	GRO	NUMBER: 7488 UND ELEV: ECTOR: R.M.D.	onald
TEST PIT DA	TA		*			CON	TRACTOR: AWT	
LENGTH		IDTH	DEPTH		EXCAVATION METHOD	STAR	RT DATE: 091715	5
6	1.	5′	31	mini e	xcavator	СОМ	PLETION DATE: 08 171	5
GROUNDWA	TER DA	ATA				CHEC	CKED BY:	
DATE / TI	ME							
DEPTH TO	WATE	R			Notencountere	LOCA	ATION SKETCH:	o pole
MONITORING	G DATA	1					Π	Bor
INSTRUME Multi Ra			ETECTOR	BACKGRO	UND TIMEDATE 09.1715/12	07)		North
Macri	~	10011	43/0.4/09	cal. pas				
REMARKS:					4		NTS	
		s	AMPLE	STRATA	S	AMPLE DESCR	RIPTION	EXCAVATION
								EFFORT
DEPTH (FT)	voc	NO.	DEPTH					E - Easy
								M - Moderate D - Difficult
					1-2 - 1 a a m b	iono, n	1/3-4" angular	_
1				-	0-2 - Loam, b Cobbles, root 3	<i>f</i> .	75, 25	-
-				+	cooper, no. 3			4
2								-
					- green gray so.	ud 0-		-
3					2-3' green gray sas plastic, some	a Hales	y, oridation on	
				-	- profile, time	000000	€ .	
4				-	•			
5				-	TD=3'bgs No waste en			-
'-				+	· · · · · · · · · · · · · · · · · · ·	· - + -	. 1	_
6					10 was u en	counter		-
								<del>-</del>
7					Multi-neter: D	- (no in	dicationor	-
8			1	F	waste or deco			
				+	water	(	<i>7</i> .	_
9		1		4				;-
10				F				
~				+				-
11				上				-
	İ			_				
12								
13				F				-
								-
14								-
15				F				

TEST PIT FIELD LOG CLIENT: M2TP15 PARSONS TEST PIT NO .: 748810 FTMM JOB NUMBER: PROJECT: GROUND ELEV: LOCATION: R.McDonald INSPECTOR: AWT TEST PIT DATA CONTRACTOR: LENGTH WIDTH 1305 DEPTH EXCAVATION METHOD START DATE: 081715 1811 4' min excavator COMPLETION DATE: 061715 GROUNDWATER DATA CHECKED BY: DATE / TIME LOCATION SKETCH DEPTH TO WATER MONITORING DATA INSTRUMENT DETECTOR BACKGROUND TIME/DATE Multi Rap Plus Voc/coltys/chylory Concrete! North REMARKS: SAMPLE DESCRIPTION EXCAVATION SAMPLE STRATA EFFORT E - Easy DEPTH (FT) VOC NO. DEPTH M - Moderate D - Difficult 6-1.5 - Silty brown sandy root zone 1.5-2.2 Woodchips/mulch (decomposing) 2.2-4 dk brown silty and w/clay, decomposing lbent piece of metal organise mather \* 2.5' will piece of concrete @ South end of test pit. 10 S. End of pit@ approx. mulch/woodchips start approx. 12 debuis: 2 smallpieces misc. plastic, 13 1-4" X4' piece of steel, 1/2 brick Multi-rase readings &

18 strides

		TEST PIT FIEL	DIOC		PAGE 1 OF
DAD	SONS	CLIENT:		1107011	
PROJECT: F	TMM undfill M		JOB NUMBER: GROUND ELEV:	74881C	
TEST PIT DATA  LENGTH WIDTH  O' O"  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER  MONITORING DATA  INSTRUMENT DE	NIA	EXCAVATION METHOD  11 LY CA VA TOT  GROUND TIME/DATE	INSPECTOR:  CONTRACTOR:  START DATE:  COMPLETION DATE:  CHECKED BY:  LOCATION SKETCH:	R.MY) on AWT 081715 081715	<b>1</b>
		libration 08/7/5/120 passed	NTS		North
DEPTH (FT) VOC NO.	AMPLE STRAT	SAMP	LE DESCRIPTION		EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1		Silt fence fall  Silt fence fall  land - fallic  w gran  2 5 3,5  mustand brown  Sandy soil. V  Pepsidan  *No groundwa  * peadings on	to grayish g uisc. plastic tes	neen	

			TES	ST PIT FIELI	LOG	PAGE 1 OF			
	PAR	SONS		CLIENT:	TEST PIT NO.: M2TP/	TEST PIT NO.: M2TP17			
PROJECT:	FT	MM			JOB NUMBER: 749 Q				
LOCATION	Lo	indfil	IM2		GROUND ELEV:				
					INSPECTOR: 12.W4)	onald			
TEST PIT DAT.	A				CONTRACTOR: AWT				
LENGTH	WIDTH / f\'	DEPTH		CAVATION METHOD	START DATE: 091715				
le'		3'	mini-ex	cavator	COMPLETION DATE: UG171	5			
GROUNDWAT DATE / TIM		1		7	CHECKED BY:				
DEPTH TO V		M	A		LOCATION SKETCH:				
MONITORING	Carlo				Vin va B	Ī			
INSTRUMEN		ETECTOR	BACKGROUND	TIME/DATE	vip rap				
Multi- Ro	al Voc	14,51	Calibration	081715/1200		North			
Plu	15 CH4	coluer	Dassed						
REMARKS:		•			1				
<del></del> T		SAMPLE	STRATA	CAMA	E DESCRIPTION	EXCAVATION			
		AMP LE	SIRVIA	SAWIT	L DESCRIPTION	EFFORT			
DEPTH (FT)	VOC NO.	DEPTH				E - Easy			
						M - Moderate			
	_				-11 5- 1 ( 2 : 6	D - Difficult			
			- 6	-0.8- blown 8	71ty Sand-topsoil	-			
1	1 3	12	+ 0	8-3		-			
2			- in	454.11	t gray-guin pieces of plastic, t no reading on	1 70			
				as laid brown	+ gray-green	1 7			
3				of mall-	Pieces of Blastic				
				slight odo bu	t no leading				
4			1	multi-rae	in Jan	1 -			
			-	Conucle Ilean	Do - 11 10/61	-			
5				mustand blok	on to North/Stream,	1 1			
6			F 4	gray-green to	south.)				
		1							
7			1 ,	* N. end of pit	is approx. 46+				
			-	couth of strong	mrio-rap	1 -			
8		1	+	South of Stream		-			
0			F		0	-			
1			+ 1	readings on m	ulti-ral = 0	1 1			
10				O					
			T						
11						1 ]			
			-	, a					
12		+	+			-			
13			-						
13			+			-			
14									
						1			
15						1 1			

DATE/TIME DEPTH TO WATER DOINTORING DATA  NOTIONING DATA  NOTI			(ID)ID (	AND REPORTED TO	1.00		PAGE 1 OF
PROJECT: LEADER LAND THE LECTION BETTER DEPTH DESCRIPTION  EST PIT DATA  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE  19			TES	T PIT FIELL	LOG		
EST PIT DATA  ENGTH WIDTH DEPTH EXCAVATION METHOD START DATE  10 10 4 1 MAIN-EXCAVATON METHOD START DATE  ROUNDWATER DATA  DATE TIME  DEPTHITO WATER  HONTORING DATA  NISTERIANT  DEPTHITO WATER  HONTORING DATA  NISTERIANT  DEPTHITO WATER  DEPTHITO WATER  LONG MAIN DETECTOR  DEPTHITO WATER  DEPTHITO WATER  LONG MAIN DETECTOR  DEPTHITO WATER  DEPTHITO WATER  LONG MAIN DETECTOR  DEPTHITO WATER  DOLL MAIN DETECTOR  NORTH  DEPTHITO WATER  DOLL MAIN DETECTOR  NORTH  DEPTHITON  EXCAVATION  EFFORT  E - Easy  M. Moderate  D. Defficient  D. Deficient  D.	PA	RSONS		CLIENT:	TEST PIT NO.:	M2TP18	& (faitheath
LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE USES 15 0928  10 1 16 4 1 10 10 10 10 10 10 10 10 10 10 10 10 1			2		GROUND ELEV:		
LENGTH WIDTH DEPTH EXCAVATION METHOD  10 1 10 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TEST PIT DATA					AN/1	naioi
ROUNDWATER DATA  DATE / TIME  DEPTH TO WATER  CONTIGENCY  DISTRIMENT  DETECTOR  BACKGROUND  TIMEDATE  MULTI ROUND SKETCH:  CONTIGENCY  PULS  C/4/CO/LES  PULS  SAMPLE  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Easy  M. Moderate  D. Difficult  2  2-4  SAA, N mixed wata Includes:  misc. plastic, glass jan, glass bottles,  Photographic film brokin glass,  metal wire, pape, woord, concacte.  Multi-Fae reading: O		DEPTH	EXC	AVATION METHOD		0818151	0928
ROUNDWATER DATA  DATE/TIME DEPTH TO WATER  IONITORING DATA  INSTRUMENT DEPTH OF WATER  IONITORING DATA  INSTRUMENT DEPTH OF WATER  IONITORING DATA  INSTRUMENT DEPTH OF US  CITY TO DETECTOR  BACKGROUND TIMEDATE  MALK ROL  VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E. Easy M. Moderate D. Difficult  The Date of Control of Control  The Date o		41			COMPLETION DAT		
DEPTH TO WATER  LONING DATA  PARTHUMENT  DETECTOR  BACKGROUND  TIMEDATE  WILL ROLL  PLUS  CH4/CO/CET  POWCE  SAMPLE  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Easy  M. Moderate  D. Difficult  2  1  5A4, W mixed wata Includes  misc. plastic, glass jar, glass bottles,  Photographic Film broken glass,  hetal wire, pa pa, woord, concacte.  Multi-fae reading:  Month  Control SKETCH:  Control  North  EXCAVATION  EFFORT  E. Easy  M. Moderate  D. Difficult  The provided water  North  EACH AND  NORTH  NORTH  EXCAVATION  EFFORT  E. Easy  M. Moderate  D. Difficult  The provided water  Photographic Film broken glass,  hetal wire, pa pa, woord, concacte.	ROUNDWATER DATA					00.010	011-
NONTORING DATA  INSTRUMENT DETECTOR BACKGROUND TIMEDATE  MULTIPAL VOC/PLS Calibration O DIBIS/0730  Plus (14 CO/CEC Posses)  EMARKS:  SAMPLE STRATA  DEPTH VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Easy  M. M. Moderate D. Difficult  2  3  - 0-2'	DATE/TIME	1,1	٨	11/			
North Role (Vol/No. Calbration ODIBIS/0730  Plus (M4/Colett Power Power ODIBIS/0730)  EMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E- Easy M- Moderate D- Difficial  1	DEPTH TO WATER	N	A				4
Multi-Fae reading: 0  North Plus (Hy Co/LET Possed)  North  North  North  North  North Plus (Hy Co/LET Possed)  North  N	MONITORING DATA				] ~ cu	ek ~	
PILS (14 COLUT POSSES)  EMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EFFORT  E. EASY  M. Moderate  D. Difficult  1  SAM, IN mixed wasta Includes:  misc. plastic, glass jan, glass bettles, photographic Film public glass, hetal wire, pa pa wood, concrete.  multi-pae reading: 0		DETECTOR I	BACKGROUND	TIME/DATE			
EMARKS:    SAMPLE   STRATA   SAMPLE DESCRIPTION   EFFORT   E-Easy   M-Moderate   D-Difficult				081815/0730		Tend	North
DEPTHIFT VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E - Easy  M - Moderate  D - Difficult  2  2'-4'  SAA, W mixed waste Includes:  misc. plastic, glass jac, gass bottles,  Photographic Film, brokin glass,  hetal wire, za par woord, concrete.  Multi-Tal reading: O	Plus ICH	4/00/12	fassed	,		)	
DEPTH (FT) VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E · Easy M· Moderate D · Difficult  2 2' - 4'  SAA, W   mixed wasta Includes: misc. plastic, glass jan, glass bottles, Photographic film, brokin glass, hetal wire, 7a pa, woord, concacte.  Multi-fae reading: D	EMARKS:				NO	1	
DEPTH (FT) VOC NO. DEPTH  FT) VOC NO. DEPTH  DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH  DEPTH (FT) VOC NO. DEPTH (FT)		CAMPLE 6	CIBATA	CAMDII			EVCAVATION
DEPTH OF VOC NO DEPTH  - 0-2' brown silty, sandy loam, roots 2'-4' - 5AA, W mixed waste Includes: - misc. plastic, glass jan, glass bottles, - Photographic Film, broken glass, - hetal wire, pa pay wood, concrete.  - multi-rae reading: O		SAMPLE	STRAIN	SAMI LI	DESCRIPTION		1550 CONTRACTOR - 0500
M-Moderate D-Difficult  1	DEPTH (FT) VOC NO	DEPTH	1				
D-Difficult  1	DEFINITION NO.		1				
brown silty, sandy loam, roots  2'-4'  5AA, W mixed wasta Includes: misc. plastic, glass jan, glass bottles, Photographic film, broken glass, hetal wire, paper wood, concrete.  multi-rae reading: 0							
brown silty, sandy loam, roots  2'-4'  5AA, W mixed wasta Includes: misc. plastic, glass jan, glass bottles, Photographic film, broken glass, hetal wire, paper wood, concrete.  multi-rae reading: 0			- 0-	2'-			
5AA, W mixed waste Includes: misc. plastic, glass jan, glass bottles, photographic film, broken glass, hetal wire, pa pa, wood, concrete.  multi-rae reading: O	1		+	brown Silfy sand	4 loam, root	D	-
5AA, W mixed waste Includes: misc. plastic, glass jan, glass bottles, Photographic film, broken glass, hetal wire, pa pan, wood, concrete.  multi-rae reading: O			F		1		-
multi-rae reading: 0	2				0		-
multi-rae reading: 0			- 5	SAA, w mixed w	ata Inglude	0:	1 -
multi-rae reading: 0	3		-	ice dastic co	- 00	1 44 0	-
multi-rae reading: 0	. —		- "	Isc. plastic, geas	spar, gass	601100,	-
multi-rae reading: 0	4		+ P	notegraphic Film	ng broken gl	ass,	-
multi-rae reading: 0	. —		- h	retal wire, pap	a, wood, ce	marete.	-
multi-fae reading: D	·		+				-
multi-fae reading: D	6		-	* 171			-
			+ m	Wett-rae reading	·O		-
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			T	EST PIT F	IELD	LOG		PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.:	M2TP1	1 (20'S & TP:
PROJECT:	Fī	744				JOB NUMBER:	748810	
LOCATION		ndfil	1M2			GROUND ELEV:		+
						INSPECTOR:	P.M. Don	ald
TEST PIT DAT	T					CONTRACTOR:	ANT	,
LENGTH	IB"	DEPTH 18"	200	EXCAVATION METHOD		START DATE:	081615	
GROUNDWAT		10	110	ini Excavato	IL	COMPLETION DATE CHECKED BY:	0818	5   5
DATE / TIM		. (1/1)		- 0 /	7 _	CHECKED BT:		
DEPTH TO	WATER	MIN	-		V	LOCATION SKETCH:		4
MONITORING	DATA					П	TP2	
INSTRUME		ETECTOR	BACKGROUN	ND TIME/DA	TE		٠.	
Multi-R		CO H25	cal.	081815	10780		20'	North
Plus	LEL	Oxy	Pusse	d			TP19	
REMARKS:						NTS		
		SAMPLE	STRATA		SAMPLE D	ESCRIPTION		EXCAVATION
								EFFORT
DEPTH (FT)	VOC NO.	DEPTH						E - Easy
								M - Moderate D - Difficult
			-	0:0.5 - bro	wn sil	tyloam		-
'								-
2				0.5-15		183		-
				0.0 1.3 -1	wasti			
3				tire, glas	u bottl	es, pager, n	nisc.	
			L	Dlastic, 1	misc. n	et as, fil	m	-
4			+	, , ,	1.			-
5			+	0.5-1.5-1 tire, glas plastic, i multi-rae	reads	ng.t		-
3			+			Ü		-
6			-					-
		1						
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15			上				1	7

				,	<b>TES</b>	T PIT	FIELD	LOG		PAGE 1 OF /	_
	6	AR	SONS			CLIENT:		TEST PIT NO.:	M2TP2	0 (40'5 9)	2
PROJECT:	-	FI	MM	II M2				JOB NUMBER: GROUND ELEV: INSPECTOR:	748816 R.M.D.		_
TEST PIT DAT	ΓA							CONTRACTOR:	ANT	na si	_
LENGTH	WID		DEPTH			VATION MET	HOD	START DATE:	08/8/5		
5'	18	3"	3.5'	mir	riex	cavator		COMPLETION DATE	00/8/8	5/1121	
GROUNDWAT		A						CHECKED BY:			_
DATE / TIN			- N	1/4	-		1				_
DEPTH TO			1	1/1	1			LOCATION SKETCH	•	1	
MONITORING	Van Tale					1000			TP19		
INSTRUME	0 1	-	CO/H2S	BACKGR	DUND		15/0780		20'	North	
Multi-	Kar	<u>VOU</u>	16	Pu:	sed	0812	15/0100		1-2-	North	
Plus REMARKS:		LEL	-Joxy	1					11/20		
KEWAKKS.			U					NTS			
		5.	AMPLE	STRATA			SAMPLE D	DESCRIPTION		EXCAVATION	
										EFFORT	
DEPTH (FT)	voc	NO.	DEPTH							E - Easy	
										M - Moderate	- 1
										D - Difficult	-
. —					_0-1	.5					$\forall$
'+		- 1		-	-						+
2		1			-						7
-				_	-1.5-	-3.5					1
3					- 0	naste i	ncluding	old trasho	an.	1	7
		- 1			- v	112 1-14	H	colastic	,	1	7
4		1			- ye	NK) 1001	to vario	, , , , ,			
			1		- n	usty n	era, pa	per, erc.			
5				_	_	.61		old trashe c. plastic, per, etc. ding: O			1
					- rn	ul 17-	rae rea	ding: O			4
6				-	-			O		İ	4
		- 1	1	-	-						4
7		- 1	1	-	-						+
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10			1	ŀ	-					8	1
				1	-					).	7
11											
12					_						
									I		1
13				1					l		1
				-							4
14				+							4
				-							4
15	-										4

			ישוים	ST PIT FIEI	DIOC		PAGE 1 OF	-
						11	. /.	_
	PAR	SONS		CLIENT:	TEST PIT NO.:	MIZTPZ	<i>l</i> (	
PROJECT:	FT	MM		JOB NUMBER:	748810			
LOCATION	v: 1a	ndfis	UM2		GROUND ELEV:			
		0			INSPECTOR:	R.14400	rald	_
TEST PIT DAT	ΓΑ				CONTRACTOR:	AWT	,	_
LENGTH	WIDTH	DEPTH		CAVATION METHOD	START DATE:	081815		
5′	18"	2'	Mini &	xcavator		E. 081815		
GROUNDWAT		. //			CHECKED BY:			-
DATE / TIN		NA		~~~	LOCATION SKETC	4-		
MONITORING			10		- LOCATION SKETCH	· Propagation of	Ī	
INSTRUME		TECTOR	BACKGROUND	TIME/DATE		TP 26		
Multi-R		100/Hs	Cal.	08/815/0780	5	>	North	
Plus	LET	111	passed			1-22.		
REMARKS:		1 1				TP21		
					NT	S		
	S.	AMPLE	STRATA	SAM	MPLE DESCRIPTION		EXCAVATION	
DEPTH (FT)	VOC NO.	DEPTH					E-FORT	
DEFIN (F1)	VOC NO.	DEFIN					M - Moderate	- 1
							D - Difficult	
			1 6	)-(				4
1			+	brown silte	yloan			4
. —			-	biown silte 2 waste inc glass bottle mlti-rae rea	0			$\dashv$
2			+1-	2 waste ins	lindia	01		+
3			-	,	pay	1.	1	+
1			<del></del>	glass bottle	0, m, 69. pla	517C	1	1
4				0				7
			In	mlti-rae rea	ding: D			]
5		- 1	Τ,				ł	]
6		1						-
			-				l	4
7			+					+
			-					+
8		1	+					+
9	1 1		-					7
			+					1
10								7
11							1	J
							1	
12								1
			_					1
13			-					-
			-					-
14			-					-
			-					-
15	1 1							-

	CHARACTER TOTAL STREET	DIOC	PAGE 1 OF
	TEST PIT FIEL	D LOG	
PARSONS	CLIENT:	TEST PIT NO.: M2TP	22
PROJECT: FTMM LOCATION: Land fi	1142	JOB NUMBER: 7488  GROUND ELEV: INSPECTOR: 12.M9)6	
TEST PIT DATA		CONTRACTOR: AWT	racq
LENGTH WIDTH DEPTH	EXCAVATION METHOD	START DATE: 081814	5
5' 18" 2.5	mini-ex.	COMPLETION DATE: 08 1915	5
GROUNDWATER DATA		CHECKED BY:	
DATE / TIME	A	LOCATION CUETCU	
DEPTH TO WATER  MONITORING DATA		LOCATION SKETCH:	1
INSTRUMENT DETECTOR	BACKGROUND TIME/DATE		
MultiRae VOC/co/425	Cal. 081915/0730	)12'	North
Plus LELIOXY	Passed	7 TP22	
REMARKS:		NTS HITT / FR	nu
SAMPLE	STRATA SAMI	PLE DESCRIPTION	EXCAVATION
			EFFORT
DEPTH (FT) VOC NO. DEPTH			E - Easy
			M - Moderate D - Difficult
	0-1		
1	+ brown silty,	sandy loam. Wet	-
2		0	-
	+1-2.5		-
3	I waste-lumbe	, misc. plastic, glass per, hub cap,	
	- bothlest jars, pa	per, hub cai	_
4	+ comb birding	, , , , ,	_
5	- 60000	5	-
<u> </u>	+ 2This win also		-
6	I (NISISINAIM	saea, gound is	
	I saturated.		_
7	+		_
	multi-rae rea	ding: 0	-
<u> </u>	+	0	
9	I 'Cannot move	further south	
	1		_
0	- due to steep	nece	-
	F		-
	士		
2			]
	_		
3	+		1 -
4			1 +
5			

	T	EST PIT FIEL	DLOG		PAGE 1 OF
PAR	SONS	TEST PIT NO.:	M2TP:	23/20'SWA	
	MM indfillM2		JOB NUMBER: GROUND ELEV: INSPECTOR:	748817 R.M.D.O	
EST PIT DATA			CONTRACTOR:	AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE:	081815	1210
5' 18"	3' mi	ni-ex.	COMPLETION DATE	081815	<u> </u>
ROUNDWATER DATA	17.1		CHECKED BY:		
DATE / TIME	I MA	1			
DEPTH TO WATER	1 1 1 1 1		LOCATION SKETCH:	i ne nee	
IONITORING DATA			-	b or	tale
	TECTOR BACKGROUN		TF23		
	oration VOC/CO/Y				North
EMARKS:	THE I TOLIOX	91		Top	18
EMARKS.			NTS		•
Si	AMPLE STRATA	SAMP	LE DESCRIPTION		EXCAVATION
					EFFORT
DEPTH (FT) VOC NO.	DEPTH				E - Easy
					M - Moderate D - Difficult
1		0-1.5 Silty Sandy trice roots 1.5-3 waste-gypsn glass bottles, multi-rae reas	mboard (dry misc.plast	n, lots of	

					DELOTE BYTE PRESE	TOC		PAGE I OF
					FEST PIT FIELD	LOG		
		PAR	SONS		CLIENT:	TEST PIT NO.:	M2TP	24
PROJECT:		7-	TMM			JOB NUMBER:	748810	)
LOCATIO	N:	10	endfi	11 M2		GROUND ELEV:		
						INSPECTOR:	R.14430	rald
TEST PIT DA	ГА					CONTRACTOR:	AWT	
LENGTH		DTH	DEPTH		EXCAVATION METHOD	START DATE:	091815	
5'	1.	5'	3'	min	i-ex.	COMPLETION DATE	081815	
GROUNDWA	TER DA	ATA				CHECKED BY:		
DATE/TII	ME		N	1/A	177			
DEPTH TO	WATE	R	10	171		LOCATION SKETCH:		1
MONITORING	DATA					) · Pipe in	704	
INSTRUME		_	TECTOR	BACKGRO		16		l.
MultiR		_	pation	-			1702	North
Plu	Δ	I Y	assed	LEI/	0×91	J9 TD24	TP23	
REMARKS:						NTS		
		S	AMPLE	STRATA	SAMPLE	DESCRIPTION		EXCAVATION
					***************************************			EFFORT
DEPTH (FT)	VOC	NO.	DEPTH					E - Easy
								M - Moderate
								D - Difficult
					- sitty sandy la roots, modest	am bronor	, true	-
1				-	- woots modest	_ '	250	-
				-				-
2				-	-1.5-3'			-
,				1	- wasti gus both	les jous, misc	plastic,	-
3				-	- wasti glass both Sole of a shoc, m	2 + 50	1	-
4				1	- 2000	0.74		-
'-					- (-)	mino mat	51	-
5				ı	- metal pipe co tree voots app - this pit (see pi	madias of the	,0	
					tree voots app	LOX. 5/4 N	10%	1 1
6			1		11 /2		$\mathcal{O}$	1 ]
					this pit (see pi	crucy		1 ]
7	1		1					
			1		multi-rae readin	9:0		
8					_	3		1 4
				-	-			-
9		- 1		+	-			-
				+	-			-
10				+	_			-
			1	+	-		¥	-
11	- 1		- 1	+	-			-
		- 1	1	-				-
12				+				-
13				-	<del>.</del>			-
13				+				-
14			1	-				-
				+				-
15							1	]

				r	TEST PIT FIELD	LOG		PAGE 1 OF	7
		PAR	SONS		CLIENT:	TEST PIT NO.:	M2TP2	5	
PROJECT: LOCATION	PROJECT: FTMM  LOCATION: LANGE   M 2						748810 R.1490		_
TEST PIT DAT	ГА					CONTRACTOR:	ANT		
LENGTH		DTH	DEPTH		EXCAVATION METHOD	START DATE:	08/8/5		
61	1 19	34	4'	m	inivex.	COMPLETION DATE:	081815		_
GROUNDWAT	TER DA	TA				CHECKED BY:			
DATE / TIM	-		N	H-A	177				_
DEPTH TO			1 1 2	IM	VVV	LOCATION SKETCH:	- out fall	1	
MONITORING						4	- out fall - pipe		
M. O.: O			TECTOR	BACKGR		1 - 5	1	1	
Multi-Ra Pluso			0/425	Colibra	0 0 1	1 - 205	TP2	4 North	
REMARKS:	-	IEL	loxy	Pass	C I	TP25 \	117		
REMARKS:						NTS			
		S	AMPLE	STRATA	SAMPLE	DESCRIPTION		EXCAVATION	
								EFFORT	- 1
DEPTH (FT)	voc	NO.	DEPTH					E - Easy	- 1
								M - Moderate	- 1
					2 1 1			D - Difficult	$\dashv$
,					-0-4				$\dashv$
'				-	- ak brown sil.	ty loam lot	501		-
2						0	0		7
				-	- de brown sil	. thee root	5		7
3					- 0				J
					NoWaste				
4				_	No Waste				4
					- Surface debr multi-rae veac	isinarea			4
5				-	- 5000				4
					- mus Oti-vas vas	ling. A			$\dashv$
6			- 1	-	- The Very	20114			$\forall$
7	1			ł		O			4
'-				-	-				-
8					-				7
		- 1		7	-				7
9					-				
10	- 1								
		- 1		1	-				_
11				_	-				-
				-	•				4
12				-	•				$\dashv$
12			İ	-					+
13				+					-
14				H					-
				-					-
15									1

			7	TEST PIT FIELI	LOG		PAGE I OF
	PAR	SONS		CLIENT:	TEST PIT NO.:	M2TP2	Lle (20'SSWf
PROJECT:	FT	MM			JOB NUMBER:	7488	16
LOCATION:		nd fil	1 M2		GROUND ELEV:		
					INSPECTOR:	R.MYDO	riald
EST PIT DATA					CONTRACTOR:	ANT	
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD	START DATE:		5/0848
Le'	18"	4'	mini	-excavator	COMPLETION DATE		5
ROUNDWATER	DATA				CHECKED BY:		
DATE / TIME		11	1	11/			
DEPTH TO WA	TER	NI	M		LOCATION SKETCH		4
IONITORING DA	TA					TP4	
INSTRUMENT		TECTOR	BACKGRO		120'		
Unlti-Rae	VOC	100/H2S	Cal. p.	9586 081915/0720			North
Plus	LEI	10x4	/		]   TP2	O	
EMARKS:							
— T	T -	AMPLE	STRATA	CAMPI	E DESCRIPTION NTS		EXCAVATION
	S	AMPLE	STRATA	S/Mrl.	DESCRIPTION		EFFORT
DEPTH (FT) VO	C NO.	DEPTH					E - Easy
DEFIN(FI)	10.	Derin					M - Moderate
							D - Difficult
				0'-4'			
1			1	0-4		,	
	1 1			brown, sandy, s moister/darke	silty loam,	duy,	
2			_	- moister/darke	1 and de oth.	()	
			-		· volution		
3	1 1		-	<b>-</b> 4			1 -
			_	* No waste			1 4
4							
<b>—</b>			-				1 -
5		1	+	· multi-rae lea	dina: a		1 -
		1	-	· much fue	0		1 -
· <del></del>		- 1	+	•			1 -
. —	1 1	- 1	-				1 -
-	1 1		+				1 -
	1 1		-			90.	-
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			TI	EST PIT FIELI	) LOG	PAGE I OF
	PAR	RSONS		CLIENT:	TEST PIT NO.: M2TP	27
PROJECT:	F	ПИМ			JOB NUMBER: 7488	10
LOCATION		undfil	142		GROUND ELEV:	
TRATE DE D					INSPECTOR: 12.14 %	onald
LENGTH	WIDTH	DEPTH	Ι	EXCAVATION METHOD	contractor: AWT start date: 08191	5
6'	18"	3'		excavator		5/09/5
GROUNDWAT	TER DATA				CHECKED BY:	- 10115
DATE / TIN	ИЕ		11			
DEPTH TO	WATER		171		LOCATION SKETCH:	*TP23 1
MONITORING					- MW18	
INSTRUME		DETECTOR	BACKGROUN		The state of the s	1
multi-1		CO HZS	Cal.	081915/0720	- 3	North
REMARKS:	1 100	yay	h-1130-		- ' - ^ ·	
	,				.TRA	
		SAMPLE	STRATA	SAMPL	E DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			L	0-1,5'		
1			+	mown silty	nam dur	1 -1
,			-		1000111, 0	1 -1
2			+	1.5-3'	•	1 -
3				SAA W waste	- glass bottles.	1 1
				warsted meta D	glass bottles, misc. plastic	
4				,	Marc. Plastic	
			-	Boil becomes	rust-colored, sand	4
5			+			7   -
6			-			
°+		1 1	+ 1	multi-vac read	ing: 0	1 1
7					O	
			T			
8						
			-			1 4
9			+			1 -
10	1		F			1 -
"-			-			1 1
11						
			T			
12						
			-			1 4
13						-
14			-			-
"-			+			1 1
15						

	7	TEST PIT FIEI	LD LOG	PAGE 1 OF
PARS	100 Sec SMITTE	CLIENT:		TP28
	MM ndfillM2		JOB NUMBER: 748 GROUND ELEV: INSPECTOR: 2 MG	
TEST PIT DATA  LENGTH WIDTH  LE' 2'  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	DEPTH Mini-	EXCAVATION METHOD  EX CON A TO	CONTRACTOR: AWT	15/1221
Multi-Rae Voc/	COH25 Cal pa		NIS NIS	• И W North 5A 13
DEPTH (FT) VOC NO.	DEPTH STRATA	SAI	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		1.5-2'.  orangish bus dry, med-Gra glavel  2-4'  waste inclu plastic bags, glass bottles,	sindy loans dry	β

Q

			I	EST PIT FIELI	LOG	FAGE 1 UF
	PAR	SONS		CLIENT:	TEST PIT NO.: M2T7	29
PROJECT:	F	ПИМ			JOB NUMBER: 74881	0
LOCATION	No. of Contract of	nd GI	1112	100	GROUND ELEV:	
					INSPECTOR: 12.144	onald
TEST PIT DAT	TA		<del></del>		CONTRACTOR: HWY	
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD	START DATE: 0828	
le'	2'	4'	min	i-excavator	COMPLETION DATE: 0829	15
GROUNDWA? DATE / TIN			L		CHECKED BY:	
DEPTH TO	1000	NI			LOCATION SKETCH:	A
MONITORING	G DATA	1 1 1			oTP17	
INSTRUME	ENT DI	ETECTOR	BACKGRO			
Multi-1		100/H25	Cal.pa	886 082815 09 15	1	North
Plus	1 4	Yoxy			J 7729	
REMARKS:		0			NTS	
200 4 10 4 10 4 10 10 10 10 10 10 10 10 10 10 10 10 10		SAMPLE	STRATA	SAMPL	E DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
				Λ		D-Difficult
1				0-15'		-
				brown silty	andy loan	
2				brown silty, s dry, root zone	1	
				ary, not zone	U	1 4
3				15.71		
, —			-	1.3 - 7	lots of misc plastic, lass bottles, bloken bottles, metal aire, g metal	-
7			+	waste incor.	rots of misc. plastic.	
5				plastic bays, g	lass bottles by lan	1
				alam allestick	bottler w. 1 n	
6				4	and of alle	
			L	Fabric, Mistre	g meral	
7			+			_
8			-	TD-111-01		-
-			+	TD=4'bgs		1 -
9				m. Ati was los l'	, A	
				multi-vae leadi	ing = 0	
10		1			U	
			_			
11			+			-
			L			1 -
12			+			-
13						
			+			1 1
14						
			T			
15						

		TEST	F PIT FIEL	DLOG		PAGE 1 OF
DAR	SONS		CLIENT:	TEST PIT NO.:	M2TP:	217
PROJECT: F	TMM and fill		CLICIT.	JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 R.14920	0
Multi-Rae Voc	N/A	EXCA MINI-LA BACKGROUND  AL. POLSSES	TIMEDATE 082815/09 (5	CONTRACTOR: START DATE: COMPLETION DATE CHECKED BY: LOCATION SKETCH:	AWT 002815 082815	-
	DEPTH S	TRATA	SAM	NTS PLE DESCRIPTION	.∏ TP30	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		+ 'P' / L F	st bucket (	sandy loan land w/ dep 02.5  cete ~ 2' X 3' top 8") other misc	in	

100				T	ES'	F PIT FIE	LD	LOG	PAGE 1 OF
	F	PARS	SONS			CLIENT:		TEST PIT NO.: M2 TP3	ĺ
PROJECT:		FT	MM					JOB NUMBER: 748810	
LOCATION	۷.	le	indfil	1M2				GROUND ELEV:	
								INSPECTOR: R.M.SOM	iald
TEST PIT DAT	T			T	2015-1			CONTRACTOR: AWT	1.7 7
LENGTH 5.5'	WID		DEPTH 4'	min		vation method		START DATE: 1983115 COMPLETION DATE: 1993115	10-15-3
GROUNDWAT	1	-	7	110111	1 - XM	avaioi		CHECKED BY:	
DATE / TIM		-	6.1	1	11	0/	7		
DEPTH TO	WATER		N	A	1		1	LOCATION SKETCH:	4
MONITORING	DATA							·M2TP8	
INSTRUME		-	TECTOR	BACKGRO		TIME/DATE		-44'	1
Multi-Ro		. 1	OH2S	Cal. Da	558e	003115 073	U		North
Plus		LE	HOXH					M21731	
REMARKS:			1					NTS	
		S/	AMPLE	STRATA		SA	MPLE D	DESCRIPTION	EXCAVATION
									EFFORT
DEPTH (FT)	VOC	NO.	DEPTH						E - Easy
									M - Moderate D - Difficult
					0-	<i>j</i> !			
1		- 1						1. 1	_
				_	bu	52011 81/19, X	jano	dy loam, some	-
2		Î			- gr	owel 0		0	-
3		1		-	-0				-
1		1		-	-1'-	4'			-
4		-			0	Λ Δ	r .	AG	
			0			AH, waste	inc	c. Stight edon, ys above background	
5					1	le, wood, fa	bri	c, Slight edon,	_
				-	· 6	ut no ceao	lina	s above backgioning	A -
6				-	08	multi-met	E1 (	0	1 -
7				-	_		~ .		-
	1				(24	10 No. 10		2.1	_
8					b	lacie to dk	· que	enish-grey sand,	1 ]
					Sil	ty, some cla	ay,	med Find,	
9						Asorted, we			
		1		H		. 30,000,000	•		1 -
10				-	M	- 1/1001			1 -
n			1	F	112.	= 4 bgs			-
		1	ĺ	+	200	041.001.0	1.	<b>A</b>	
12			1		mu	Otival rea	ain	2=0	
				T				O	
13									
				_					1 -
14				+					-
15				F					-
			1						-

		TEST PIT FIELD	LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: 142T	032
	MM ndfill Mi	Z	JOB NUMBER: 7488 GROUND ELEV:	
			INSPECTOR: R.MY	onald
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD		5/08/0
ie' 20"	4' mir	i-excavator	COMPLETION DATE: 083115	<u></u>
GROUNDWATER DATA		Ta 0 0	CHECKED BY:	
DATE / TIME	NIA	11/1/	LOCATION SYSTEM	
MONITORING DATA			LOCATION SKETCH:	1
AND THE PROPERTY OF THE PROPER	TECTOR BACKG	ROUND TIME/DATE	701	
	colH25 cal D			North
	JOXY	3860 0 00110 10 100	TP32	140/0/
REMARKS:				
				TP 9
S	AMPLE STRATA	SAMPLE	DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH	1		E - Easy
				M - Moderate D - Difficult
1		21-11	note loam, some roll top 18" nwards  ned wood, broken etal, misc. plastic	

		TEST PIT FIELI	DLOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: M2TP3	3
	MM und Fill il	12	JOB NUMBER: 7488/( GROUND ELEV: INSPECTOR: R./U4)	2
Multi-Rae Voci	TECTOR BACK	EXCAVATION METHOD  NI-LX CON A TO  GROUND TIMEDATE  PASSED 083115 0730	CONTRACTOR: A717 START DATE: 083/15/ COMPLETION DATE: 093/15 CHECKED BY: LOCATION SKETCH:	
DEPTH (FT) VOC NO.	DEPTH STRAT	SAMPI	LE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		1.5'-4'		

		TEST PIT FIEL	D LOG	PAGE 1 OF
PARS	SONS	CLIENT:	TEST PIT NO.: M2TP3	34-
PROJECT: F-T	MM adfill Mi		JOB NUMBER: 74810 GROUND ELEV:	2
TEST PIT DATA  LENGTH WIDTH  5.51 / 8"  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER  MONITORING DATA  INSTRUMENT DET	DEPTH  4.1 Min  NACCECTOR BACKG	EXCAVATION METHOD  I SKC & V at OI  ROUND TIME/DATE	INSPECTOR: P.M.4) CONTRACTOR: AWT START DATE: DG3115 COMPLETION DATE: D83115 CHECKED BY:  LOCATION SKETCH:	9 de 1
	LOXY Cal.	assed 0831 5 0730	- trasline -	North
DEPTH (FT) VOC NO.	MPLE STRATA	SAMI	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		Lt. brown side gravel, dry,  3'-4' Waste incl.  ash, coal  TD=4' bays  multi-rae read		

				7	TEST PIT FIELD	LOG	PAGE 1 OF
	8	PARS	SONS		CLIENT:	TEST PIT NO.: M2TP	35
PROJECT:		FI	MM			JOB NUMBER: 7488/0	
LOCATION: Land FILL M2				11 M2	GROUND ELEV:		
	-					INSPECTOR: RMGD	suald
TEST PIT DA	T					CONTRACTOR: AWT	1/20//
LENGTH	WID 22		DEPTH A	ing i	EXCAVATION METHOD	START DATE: 023/15	10919
GROUNDWA			4	mun	i-excavato	COMPLETION DATE: 093/15	
DATE / TII		A	1//	1	1000	CHECKED B1:	
DEPTH TO			14/	4/	000	LOCATION SKETCH:	+/ 4
MONITORING	G DATA					LOCATION SKETCH:  TP34  TP 93	ater
INSTRUME			TECTOR	BACKGRO		1 /	
Multi-R			100/HS	cal.p	assed 0903115/0730	+ Gas line -	North
Plus		It	yoxy			17735	
REMARKS:			·				
		SA	AMPLE	STRATA	SAMPLE	E DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	voc	NO.	DEPTH				E - Easy
							M - Moderate D - Difficult
					-0-4'		
1		- 1					
. —	1			-	- Ut brown sil	ty sandw/ siquel	(
2				-	- mand day 1.	D Jam.	1 1
3		- 1		-	- mes, any, has	A	1 -
		- 1	- 1	1	· waste from 3	'-4' incl.	
4			1		tenacotta tile	hysten alass.	
		- 1	1		- alous bottles	ty sand w/ gravel,  -4', incl.  broken glass, sicken concrete,	
5				+	- Just Bollies	sicun contra	1 -
6			1	-	- beick.		1 -
•		1	1	-	-		1 -
7							
			1		- Th - 411- 4		
8					TD = 4' bgs		1 -
				-	·		1 -
9				+	multi-rae plus	leading: 0	1 -
10			1			Ü	
		1					
11						X	1 ]
			1	_			
12				+			1 -
12				-			1 -
13				+		Ÿ.	
14							
15			1				

	TEST PIT FIEL	D LOG	PAGE 1 OF
PARSOI	CLIENT:	TEST PIT NO.: M2TP 3	36
PROJECT: FTA	IM FILM2	JOB NUMBER: 74881  GROUND ELEV: INSPECTOR: R.M.C.)	10
TEST PIT DATA  LENGTH WIDTH D	EPTH EXCAVATION METHOD	contractor: AWT start date: 083113	
6' 18" GROUNDWATER DATA	4' miniexcavator	CHECKED BY:	
DATE / TIME DEPTH TO WATER	HALL	LOCATION SKETCH:	4
MONITORING DATA  INSTRUMENT DETECT  Multi-Rae VOCCE t  Plus LELICX  REMARKS:	S Cal. passed 083115/0730	TP TP Got TP35 Got TP35 TP36	North
	,	NTS	
DEPTH (FT) VOC NO. DI	SAMI	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	3-4'	end, Mag, tenacotta enon silty sand, ed, well-sorted	

			TEST PIT FIELD	LOG	PAGE 1 OF
	PARS	SONS	CLIENT:	TEST PIT NO.: M2TP.3	7
PROJECT:	FT	им		JOB NUMBER: 748810	)
LOCATION:	La	ndfi	11 M 2	GROUND ELEV:	
				INSPECTOR: RMYDO	nald
TEST PIT DATA			T	CONTRACTOR: AWT	
	DTH -0"	DEPTH 4'	EXCAVATION METHOD	START DATE: 0828/5	Lucia
GROUNDWATER DA		7	mini-excavator	COMPLETION DATE: 082815'	11150
DATE / TIME	IIA	. 1		CHECKED B1:	
DEPTH TO WATER		N	HX 1/1	LOCATION SKETCH:	A
MONITORING DATA				MWII, MM2TP12	T
INSTRUMENT		TECTOR	BACKGROUND TIME/DATE		
Multi-Rae	vocto	OlH25	trefe 082815/0915		North
Plus	ite	loxy	Cal passel	] 0%///	
REMARKS:		, 1	,	M 2 TP 14	- 1
	SA	AMPLE		DESCRIPTION	EXCAVATION
			S A'	A	EFFORT
DEPTH (FT) VOC	NO.	DEPTH	100	N	E - Easy
			14	TPIZ	M - Moderate D - Difficult
1			- brown, silty so  Gravel in areas  Gravel in areas  Ary roots to 2.  -2.5'-4'  rand mixed w  includes ash, co  brick, misc. pla  small pieces of  bottles.  *Nend is clean  MWII.  -4D=4' bys  multi-rae readin	levaste. Waste al, burned wood, stic, concrete, metal, glass until 5' Not	
15			Ī	U	=

				TE	ST PIT	FIELD	LOG		TAGE 1 OF	
		PAR	SONS		CLIENT:		TEST PIT NO.:	MZTP3	7	
LOCATION: Landfill M2					JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: R.M.Donald					
TEST PIT DAT	A						CONTRACTOR:	AWT		_
LENGTH		OTH "	DEPTH		XCAVATION METH	HOD	START DATE:	082815		_
130'		0"	4'	mini-e/	cavato		COMPLETION DATE	082815	11150	_
GROUNDWAT		ГА	<del>                                     </del>	1/4			CHECKED BY:			_
DATE / TIM			I	VAX	1	$\sim$	LOCATION SKETCH:			_
MONITORING			1 / V	1///			WW11, 142	17912	1	
INSTRUMEN		DE	TECTOR	BACKGROUND	TIME	/DATE	· / //			
Multi-Ra			elH25	VOCIC		5/0915	1 1		North	
Plus	·	100	LOXU	Cal. Jasse		10113	8, 11		140181	
REMARKS:			10/19	100	.1		1//	W127714		
							NTS	M2TP/4	<b>-</b>	
		S	AMPLE	STRATA		SAMPLE D	DESCRIPTION		EXCAVATION	
1 1				S	A <sup>1</sup>			A	EFFORT	
DEPTH (FT)	VOC	NO.	DEPTH	las T				1	E - Easy	1
				1141				TP12	M - Moderate D - Difficult	- 1
					1004011	,				
1					genuall -2,5'	7				]
		- 1		L 1	5-1	U				]
2		- 1					. 0			1
		- 1		F	brown 1	Ultu sa	ndy loan	L.		4
3				1 + i	91-01.	1	ndy loan gravel 19 5'	na d		4
					grave in	areas of	goine 1	prop(.		+
4	- 1			1 +	drex 100	ts to 2.	5			$\forall$
5					•					$\dashv$
3				1-2	,5'-4',	,				$\forall$
6		- 1			sand n	rixed w	eo aste. Wa	ste		7
				一 十 .	, .		0 1	1 word		7
7				<i>[</i>	cludes s	ash, coo	I, baine	#		
					built n	ice Nas	Hic conc	rece,		
8		- 1			Brick, 10	C15C. 101000	itic, conc	211		1
				-	small pi	eces of	metal, gl	.024		4
9				-	bottles.		, ,			+
		- 1		-		•	1.1 -1 1			+
10				+ *	N. end 1	clean u	untils'N	07)		+
11				_	MWII.					+
"-				+	10(11)					$\dashv$
12				-	111					7
				十年	D=4' ba	X				
13						•		*		
			1	Lm	ulti-ral	reading	x =-6			
14				1			0			1
				-			170			-
15				+						4

## APPENDIX B FTMM-03: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

# APPENDIX B: FTMM-03 Landfill Boundary Refinement and Methane Gas Survey Results

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B1	Landfill Boundary Refinement Summary
B2	Methane Gas Survey Results

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Figure No.	<u>Title</u>
B1	Landfill Boundary Refinement and Methane Gas Survey Results

#### LIST OF ATTACHMENTS

Attachment	<u>little</u>
B-A	Test Pit Logs

#### 1.0 LANDFILL BOUNDARY REFINEMENT SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries will be discussed in further detail in the Remedial Investigation (RI) Report for FTMM-03 that will be issued under separate cover. These changes are reflected on **Figure B1**. The historical review did not identify any data gaps with respect to landfill delineation. In addition, subsequent to the preparation of the RI Report for FTMM-03, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. None of the historical test pits that contain landfill solid waste (e.g., debris) were recategorized.

Test pits during the landfill boundary refinement were advanced along the 2010 landfill boundaries to refine the landfill extent. Additional step-out test pits were unable to be performed at this landfill due to heavy vegetation consisting of dense brush and trees. Test pits were advanced at 24 locations at FTMM-03 as part of the landfill refinement activities on August 20, 2015. Historical (2010) and additional test pit locations are provided in **Figure B1**.

Logs for the test pits excavated in 2015 are provided in **Attachment B-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table B1**.

Observations of the 2015 test pits along the northern boundary bordering Lafetra Creek contained miscellaneous scattered debris such as asphalt, concrete, plastic, rusty metal, paper, broken ceramic, glass, and wires or did not contain solid waste. The miscellaneous singular pieces of debris and scattered debris that was not contiguous was categorized as debris of *de minimus* quantity and did not meet the criteria to be considered as part of the delineated landfill. These observations were consistent with the information contained in the Construction Closeout Report (Princeton Hydro, 2011) documenting the 2009 creek slope flattening and riprap installation along the FTMM-03 northern and eastern creek boundaries indicating no landfill solid waste was found during those activities. Therefore, the FTMM-3 northern landfill boundary was revised in line with the 2015 test pit locations as shown on **Figure B1**.

Test pits M3TP22, M3TP23 and M3TP24 along the eastern side of the landfill contained landfill solid waste, and the eastern landfill boundary was relocated between these test pits and the Mill Creek western bank. On the western and southern sides of the landfill, the 2015 test pits (M3TP2, M3TP4, M3TP6, M3TP16, and M3TP18) performed did not contain landfill waste, but due to Site conditions limiting additional test pit advancement in the western side, the landfill boundaries on the western were not revised. The landfill boundary on the southern side was generally maintained, but was revised slightly due to no waste observed in M3TP16 and M3TP18 (**Figure B1**). Additional information on the landfill along these boundaries may be collected during the construction of a planned cap on this landfill.

**Figure B1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

#### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of thirteen (13) landfill gas readings (including one QA/QC sample) were measured at twelve soil gas locations at FTMM-03 as part of the methane gas survey. Sampling was conducted on July 28, July 29, and July 30, 2015. Methane was detected at two locations (M3SG1 and M3SG2). Only one of these locations (M3SG1) had a recorded concentration that exceeded 25 percent of the methane LEL. The three step out locations (M3SG11, M3SG12, and M3SG13) were measured based on these methane detections. The collective methane results indicate the area within the landfill where methane was found above 25 percent of the LEL is very limited. Soil gas locations on the perimeter (including step outs) of the landfill did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-25. The methane detections most likely are attributed to natural methane gas generating conditions from the decomposition of organics in this area of the landfill. FTMM-03 is covered with dense vegetation and patches of phragmites which may also indicate natural methane gas generating conditions. The landfill gas readings are summarized in **Table B2**. The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are shown on **Figure B1**.

#### 3.0 REFERENCES

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

#### **TABLES**

Table B1 Landfill Boundary Refinement Summary

Table B2 Methane Gas Survey Results

### Table B1 Landfill Boundary Refinement Summary Site FTMM-03

#### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	y Comments		
M3TP1	N	3	o solid waste observed; not landfill.		
M3TP2	N	3	No solid waste observed; not landfill.		
M3TP3	N	3	No solid waste observed; not landfill.		
M3TP4	N	3	No solid waste observed; not landfill.		
M3TP5	N	3	No solid waste observed; not landfill.		
M3TP6	N	3	No solid waste observed; not landfill.		
M3TP7	N	2	Debris of de minimus quantity; not landfill.		
M3TP8	Y	1	Solid waste including glass bottles, misc plastic, rusting metal, concrete block, ash, asphalt shingles indicative of landfill.		
M3TP9	N	3	No solid waste observed; not landfill.		
M3TP10	N	3	solid waste observed; not landfill.		
M3TP11	N	3	solid waste observed; not landfill.		
M3TP12	N	2	bris of de minimus quantity; not landfill.		
M3TP13	N	3	o solid waste observed; not landfill.		
M3TP14	N	2	Debris of de minimus quantity; not landfill.		
M3TP15	N	3	No solid waste observed; not landfill.		
M3TP16	N	3	No solid waste observed; not landfill.		
M3TP17	N	2	Debris of de minimus quantity; not landfill.		
M3TP18	N	2	Debris of de minimus quantity; not landfill.		
M3TP19	N	2	Debris of de minimus quantity; not landfill.		
M3TP20	N	2	Debris of de minimus quantity; not landfill.		
M3TP22	Y	1	Solid waste including ash, concrete, broken bottles, rusted metal, misc. plastic, concrete indicative of landfill.		
M3TP23	Y	1	Solid waste including ash, concrete, rusted metal pieces indicative of landfill.		
M3TP24	Y	1	Solid waste including asphalt, brick, broken terracotta tile, rusting metal indicative of landfill.		
M3TP25	N	2	Debris of de minimus quantity; not landfill.		

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

#### Table B2 Methane Gas Survey Results Site FTMM-03

#### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M3SG1	7/29/2015	2.7	54.0	10.8	3.1	
M3SG1QA	7/29/2015	2.5	50.0	10.5	3.8	QA Sample
M3SG2	7/29/2015	0.6	11.0	11.1	4.3	
M3SG3	7/28/2015	0.0	0.0	2.0	19.1	
M3SG4	7/29/2015	0.0	0.0	0.9	20.8	
M3SG5	7/29/2015	0.0	0.0	1.4	19.8	
M3SG6	7/29/2015	0.0	0.0	3.5	17.2	
M3SG7	7/29/2015	0.0	0.0	0.8	20.6	
M3SG8	7/29/2015	0.0	0.0	4.5	17.4	
M3SG9	7/29/2015	0.0	0.0	2.6	18.7	
M3SG10	7/30/2015	0.0	0.0	0.1	21.5	Step out
M3SG11	7/30/2015	0.0	0.0	0	21.7	Step out
M3SG12	7/30/2015	0.0	0.0	0	21.6	Step out

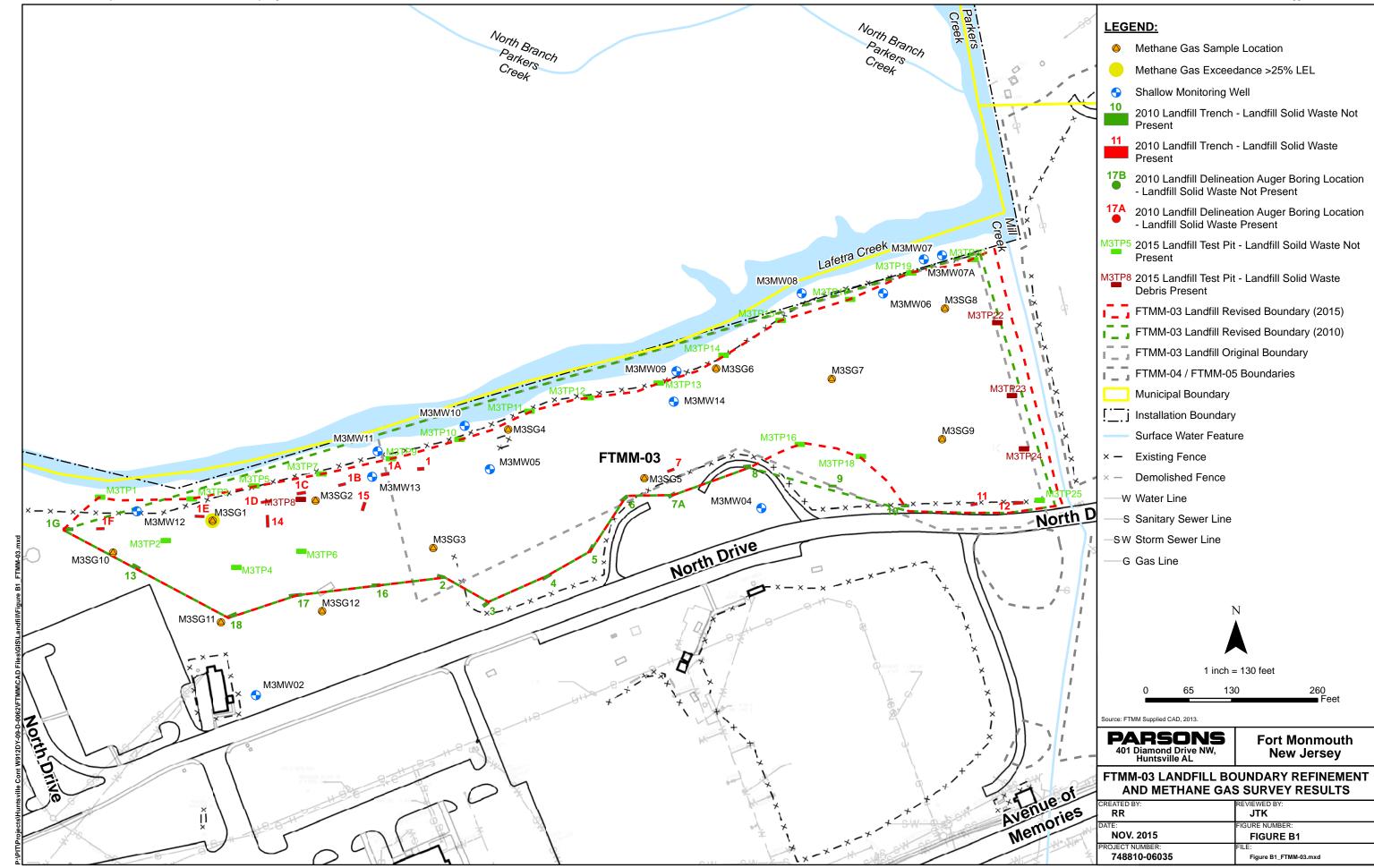
#### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

#### **FIGURES**

Figure B1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix B



#### **ATTACHMENTS**

Attachment B-A Test Pit Logs

	TEST	PIT FIELD LO	OG		
PARSON	IS CL	IENT:	EST PIT NO.:	M3TP1	
	M Ufill M3	GR0 INS	NUMBER: OUND ELEV: PECTOR:	748810 P.McDon	
	EPTH EXCAVAT	TION METHOD STA	NTRACTOR:  RT DATE:  MPLETION DATE:  CKED BY:	082015	0809
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  DETECTO  MULTI-YEL VOLCO  REMARKS:		TIME/DATE 162015   07/5	ATION SKETCH:  Welk-  NTS		North
DEPTH (FT) VOC NO. DE	STRATA	SAMPLE DESCR	RIPTION		EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- 100 - 0.8'- - 5a - No!	to brown silty of the some of yellowish had, hard, dry to waste fir ne reading	some c	si Hy lay	

			TES	ST PIT FIELD	LOG	
	PAR	SONS		CLIENT:	TEST PIT NO.: M3TP	2
PROJECT: LOCATION	7	MM nd fill	143		JOB NUMBER: 74981 GROUND ELEV: INSPECTOR: 12.14400	D
TEST PIT DAT	ГА				CONTRACTOR: AVVT	
LENGTH	WIDTH	DEPTH		CAVATION METHOD	START DATE: 082015	5/1350
U'	18"	41	mini-en	rcavata	COMPLETION DATE: 082015	1
GROUNDWAT	TER DATA				CHECKED BY:	
DATE / TIM	ИE	1.4	11	7/		
DEPTH TO	WATER	10	IA		LOCATION SKETCH:	<b>†</b>
MONITORING	DATA				- fence	
Multi-K	Par Voc	TECTOR CO/H2S LOXY	Cal pas	TIME/DATE SEE 062015/0715		North
REMARKS:		7029			วี่	
					NTS	
	S	AMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
1				nows silty narrasing san damp, tree i orange sand e 4' D=4' bgs No Waste neti-rae readi	Sandy loam, d w/ depth, oots , med, well-sorted	
15			4			]

		TEST PIT FIELI	LOG	rage 1 or
PAR	SONS	CLIENT:	TEST PIT NO.: M3TP3	3
	MM ndfill M	3	JOB NUMBER: 74891  GROUND ELEV: INSPECTOR: R. M. C. D. C.	
TEST PIT DATA  LENGTH WIDTH	DEPTH	EXCAVATION METHOD	CONTRACTOR: AWT START DATE: 00001	5/0820
GROUNDWATER DATA	4' m	niegravator	COMPLETION DATE: 0820	715
DATE / TIME DEPTH TO WATER	NIX		LOCATION SKETCH:  Lafetra Creek	1
	collis cal	GROUND TIME/DATE - 0802015/07/5		North
DEPTH (FT) VOC NO.	AMPLE STRAT	A SAMPL	E DESCRIPTION	EXCAVATION EFFORT E - Easy
1		ned brown of granel, thin granel, thin 3 dry to sl. m.  TD=4' No Waste multi-rae read	Silty Learn, little lager of group -3.5, Friable, -oist	M - Moderate D - Difficult

		TES	T PIT FIELD	LOG	PAGE 1 OF
P	ARSONS		CLIENT:	TEST PIT NO.: M3TP2	4
PROJECT: LOCATION:	FTMM Land F	i 11 M3		JOB NUMBER: 748610 GROUND ELEV: INSPECTOR: P. M. C.	
TEST PIT DATA  LENGTH WIDT  Le' 18"			AVATION METHOD	CONTRACTOR: AWT START DATE: 082015	1400
GROUNDWATER DATA	4'	mini-e	XCAVAJOI	CHECKED BY:	5
DEPTH TO WATER MONITORING DATA	IN	A		LOCATION SKETCH:  fence	
INSTRUMENT MULTI-PAR V PIUS REMARKS:	DETECTOR  OCICOHIZS  LELIOXY	BACKGROUND CW.	OGZOIS 0715		North
To the second se	CAMPU F	CTD 4.T.4	CAMDIE	NTS	EVCAVATION
DEPTH (FT) VOC	SAMPLE NO. DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			Si)ty sandy loa nown, loose, ce No Wate 1 ulti-vae read	m, yellowish phesive	

No. of the contract of the con	TEST PIT FIE	CLD LOG	
PARSON	CLIENT:	TEST PIT NO.: M3TP5	
PROJECT: FTMM LOCATION: Land	1611 M3	JOB NUMBER: 7468/0 GROUND ELEV: INSPECTOR: 2,M9)ON	ald
TEST PIT DATA		CONTRACTOR: AWT	
LENGTH WIDTH DEF	mini-ex cavator	START DATE: 082015 0  COMPLETION DATE: 082015	844
DATE / TIME DEPTH TO WATER	VIA	LOCATION SKETCH:	
MONITORING DATA		- Letetra Creek -	_ 1
INSTRUMENT DETECTOR  MULTI-RAE VOC COL  PILLA LELJO  REMARKS:	125 Cal. passed 082015/07	- Electrical	North
CAMPIC	CTD.T.	AMPLE DESCRIPTION EXC	AVATION
DEPTH (FT) VOC NO. DEPT		EFFC E - E M - N	ORT
1	brown silty friable, lot some interl sand, me black sand No Waste multival		

		PAGE 1 OF
	TEST PIT FIELI	) LOG
PARSONS	CLIENT:	TEST PIT NO.: M3TP U
PROJECT: FTMM LOCATION: Land	711 M3	JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: L. MAD TO 2 8 8
TEST PIT DATA  LENGTH WIDTH DEPTE	I EXCAVATION METHOD	CONTRACTOR: AINT START DATE: 0820 5  4
6' 20" 4' GROUNDWATER DATA	mini-excavator	COMPLETION DATE: 082015 CHECKED BY:
DATE / TIME DEPTH TO WATER	A	LOCATION SKETCH:
MONITORING DATA		- fence
Multi-ral VOC CO Hz	S Cal. 082015/0715 Passed	North
REMARKS:		NTS (general
DEPTH (FT) VOC NO. DEPTH	STRATA SAMPL	EXCAVATION  EFFORT  E - Easy  M - Moderate D - Difficult
1	brown si try  dry, lots grow  1-4  brangish bro  med., hell soit  TD=4' BGS  No Wasto  multi-rae rea	loam, friable, otstorganic matter own siltysand, ied, olamp  ding: 6

			TE	ST PIT FIEL	D LOG	TAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: M3	TP7
PROJECT:	FI	MM			JOB NUMBER: 74	6810
LOCATION		end fi	11 M3		GROUND ELEV:	
					INSPECTOR: R.W	19 on ald
TEST PIT DAT	A				CONTRACTOR: AW	T
LENGTH	WIDTH	DEPTH		XCAVATION METHOD		015/0856
10'	20"	4'	mini-e	Kenvator	COMPLETION DATE: 097	10/5
GROUNDWAT DATE / TIM		. 1	1 1		CHECKED BY:	
DEPTH TO		N	/A	7/	LOCATION SKETCH:	
MONITORING			7 - F		- Lafetra C	reeka
INSTRUMEN	NT DE	TECTOR	BACKGROUND	TIME/DATE	eip-rap	91
Multier	ae voc/	Co/H25	cal.	082015/07/5		North
plus	LE	2/0x4	passe	1	- Electrice	J
REMARKS:					Fence-	
	S	AMPLE	STRATA	SAMP	PLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			_ ^	-1.5'		D Dimitus
1					1 1	
			_	0/4 gravel for	gravel road, in m. Sitt fence fabrid	
2				gray grityloan	m. Sitt fence fabrid	@1.5' _
, —			F,	-1 . 1		_
3			+"	5-5 	· la me some su	sted -
4			F	Black Land	y layer, some in Bly desphalt or a ecoging organic man cown sand, med. He granel	sh
				metal - possi	ecoing organic mas	the
5		1	<u></u>	1-4'	0) ) / ( ) /	
			L	yellowishb	cown sand, med.	,
6			-	well sorted, li	He gearer	
,			F 7	D=4' bgs	· ·	
'			-	/\	ado but	
8				slight methan		J
			T	nulti-rae una	ding=+ (backgr	dud -
9			$\perp$			1 ]
		1	_			1 1
10						
,,			-			
11			+			1 +
12			-			1 1
			_			
13			上			
14						
			-			
15			+			

	,	TEST PIT FIELI	LOG	TAGE 7 OF
PAR	SONS	CLIENT:	TEST PIT NO.: M3TP9	}
	MM ndfil M3		JOB NUMBER: 748810 GROUND ELEV: INSPECTOR: R.M.G.	
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 082015	1423
6! 18"	41 mir	ni-excavator	COMPLETION DATE: 082015	
GROUNDWATER DATA			CHECKED BY:	
DATE / TIME	NIA	MAN		
DEPTH TO WATER	IVIA	AVVV	LOCATION SKETCH:	7
MONITORING DATA			- Pence eM3TP	+
	ETECTOR BACKGR	1	1	
	co H25 cal.p.	assed 082015 0715		North
REMARKS: Could no	Lloxy   Hocate Stak	e, Pit placement base	M3SG2	
on map			NTS	
S	AMPLE STRATA	SAMPL	E DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
				M - Moderate D - Difficult
		n-n'		
1		0-2'	- 1 1	
		- deprovosity -damp, loose	sandy doam,	
2		-dama loose	O	
3	_	-2'-9'		1 -
		- SAA W waste	incl. 7-up bottle,	1 -
4———	-	- 511	H. misc plantis	1 -
		_ other grass bo	nes, misc. plastic,	1 +
5	-	- rustingmeta	I, concrete block,	1 +
		- ash, asphalt	incl. 7-up bottle, ttles, misc. plastic, l, concrite block, shingles	1 1
+		11)- 1	3	1 1
7		TD= 4' bgs		1 7
	1 7		1.	]
8		multi-rae les	wy: 0	
		_	Q	
9	-	_		
		_		1 -
10	-	-		-
		_		-
11	1 +	-		-
12	1 1	-		-
"	1 +	_		1
13	1 1	-		
		-		
14		• <u>•</u>		7
		-		
15		-		

		TEST PIT FIELD	LOG	PAGE 1 OF
PARE	ONS	CLIENT:	TEST PIT NO.: 43TPG	7
PROJECT: FTA	NU nd GUM3		JOB NUMBER: 746810 GROUND ELEV: INSPECTOR: 2.MC)	4.4
Multi-rae voc/	TECTOR BACKGR	1 -1 1 -1 -1	CONTRACTOR: AUT START DATE: 082014 COMPLETION DATE: 08201 CHECKED BY:  LOCATION SKETCH:  LAFetra Creek  Lectrical de  Flence NIS	5 0913 5 North
DEPTH (FT) VOC NO.	DEPTH STRATA	SAMPLI	NTS E DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 0-1.5' gravel for grave - 811+ Gence & 1.5  - 1.5'-2' black organic - 2'-4' orange sand - TD=4' bgs - No Waste - multi-vae read	matter, decaying , med, well sorted	

			Т	EST PIT FIEL	DIOC		PAGE 1 OF
				ESI III LIEL	D LOG	4	
		RSONS		CLIENT:	TEST PIT NO.:	MBTP	0
PROJECT LOCATIO		TH M and fi	11 143		JOB NUMBER:  GROUND ELEV: INSPECTOR:	74881 R.M.D.	
TEST PIT DA	ATA				CONTRACTOR:	AWI	nala
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD	START DATE:	082015	10929
le'	2'	4	min	i-excavator	COMPLETION DATE	082015	5
GROUNDWA			1.		CHECKED BY:		
DATE / TI		IN	A/		LOCATION SKETCH		
MONITORIN					- Late		
INSTRUM	IENT	DETECTOR	BACKGROU			Cuc	
Multi	-	C/CO/H2S	Cal.pa	550 082015/07/3			North
Plu	s IL	taloxy	1				
REMARKS:		- 1			NTS	nce -	
		SAMPLE	STRATA	SAM	PLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO	. DEPTH					E - Easy
							M - Moderate D - Difficult
			-	0 - 1.5'			_
1	-		1 +	3/4 granel Com	manulland	Mailt	-
2	1		h	3/4 gravel for	guna roma	, w/ 8711	1 -
				1.5'-4'			
3				black decor	M NOSTLA BACA	1.	1 ]
	-		-	matter slid	t in the	11-00	1 -
4	1 1		+	black decommenter, slight but no reading plus.	in menage	1:	1 -
5	1			I remain	ngs on mu	ti-ral	1 1
			T	plus.			
6	- 1		+	A7 . 1 . (			-
7	1		-	No Waste			1 -
'			+				-
8			上				]
			-				
9			+				-
10			-				1 -
			十				
11							
			-				_
12			+				-
13			-				-
14			<u>_</u>				-
15			上				

			r	<b>FEST PIT FIELD</b>	LOG	TAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.:	37711
PROJECT:	-	FTMM and fill	М3		GROUND ELEV:	49810 1900ald
TEST PIT DA	ТА			The second secon	CONTRACTOR:	WT
LENGTH	WIDTH			EXCAVATION METHOD		2015/0949
(e'	2.5	1 41	min	ri-excavator	COMPLETION DATE: 08	20151
GROUNDWA'		<del>                                     </del>	( )	1	CHECKED BY:	— mana apar
DATE / TIN		1	1 /	1.///	LOCATION SKETCH:	
MONITORING				10-	Lafetra	r creek
INSTRUME		DETECTOR	BACKGR	OUND TIME/DATE		
Multi-	Rae VI	oc/co/H2S		082015/07/5		North
plu	0	tel Oxy	pas	sed 1		
REMARKS:		. 1			- fenc	1
		SAMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC N	O. DEPTH				E - Easy
						M - Moderate D - Difficult
				- 0-1.5'		
1			_	= 3/4 gravel for -1.5-2, silt-fence organic matter,	o lood	cilt -
,				- 19 grand for	DISI	_
2			-	-1.5-21 811 tence	GO 1. 5	-
3				- magnic matter	decaying, black	_
			-	- 0.1.0.00	0 0	_
4				2-4		
				yellowish brown well soited, &	1 Sand, med.	_
5			-	- well soited	He grand	_
, —					That y	-
6				- 4'=TD		2-
7			İ	-		-
			7	No Waste		
8				- multi-	1.	
				multi-rae rea	angio	
9			-	_	O	1 -
10			H	-		-
			-	•		-
11			Ī	-		_
12				- 1 A		
			-	-		
13			+	4		
14			F	,		
"			-	•		
15				•		

<i>y</i>				PAGE 1 OF
		TEST PIT FIELD	LOG	
PARS	DNS	CLIENT:	TEST PIT NO.: M3TP/2	2
PROJECT: FTA	1M nd fill M3	3	JOB NUMBER: 7488 GROUND ELEV: INSPECTOR: 2,1149)	muld
TEST PIT DATA	211200		CONTRACTOR: AWT	7402/
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 082015	77
CROUNDWATER DATA	4 min	11-excavator	COMPLETION DATE: 0820	15
GROUNDWATER DATA DATE/TIME	1110		CHECKED BY:	
DEPTH TO WATER	N/H =		LOCATION SKETCH:	, 4
MONITORING DATA			- Lafetra Cree	c.~
Multi-Rae Voc/Ci	CTOR BACKGR	082015/0765	fence	North
REMARKS:			NTS	
DEPTH (FT) VOC NO.	DEPTH STRATA		DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 1.5-2'  - black decompose  - slight methane  - no abore-backge  - 4-gas meter  - 2-4'  - orangesh brown so  - well sorted. Was	te in this layer, broken pieces of	

			T	EST PIT FI	ELD I	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: M3TP/	3
PROJECT:	FI	им				JOB NUMBER: 748810	)
LOCATION		ndfi	11 113			GROUND ELEV:	
						INSPECTOR: RIMO	mald
TEST PIT DAT	ΓA					CONTRACTOR: HWT	1
LENGTH 7'	WIDTH 3/	DEPTH	lag i in i	EXCAVATION METHOD		START DATE: 09.2015	1022
GROUNDWAT		4	MIINIT	excavator		COMPLETION DATE: 0820151 CHECKED BY:	
DATE / TIM		6.1.7	Λ			CHECKED B1:	
DEPTH TO	WATER	M	A			LOCATION SKETCH:	4
MONITORING	DATA				e	- Lafetra Creek-	
INSTRUMEN		TECTOR	BACKGROUN				
Multi-r		co/H2S	cal.	1 082015/0	715		North
REMARKS:	Itel	loxy	passe			-fence	
REMARKS:						NTS	
	S	AMPLE	STRATA		SAMPLE DE	ESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
				0-1.5'			_
1			+	mayol Go	Garne	0,001(31.)	_
			-	gill silt	Jenco	lroad (3/4),	-
2			+	8117, 8111	Jone	(40 1.5)	-
3			-	1.5'-2'			1 7
					W1		
4			1	blackd	cayou	e organicmatter	
_			-	(doots, bear	iches, et	te.) coarse silty	1 -
5			+	sand loos	e '	0	1 -
6			-	30-1-11			
			1	2'-4'			
7				olive brow	on silt	y sandtgravel,	1 ]
		- 1	-	loose, well-	arado		1 -
8		- 1	+		N N		1 -
9			1	ad-puplish	1 Coal	se sand + gravel	1 -
			+			U	1 1
10				TD=4'			]
			-	NoWaste			_
11			+	- Anna			-
12			F 3	nultipae lea	ding:	=0	-
			+		()		-
13							
			T				]
14							
16		1	-				-
15			+				-

	7	TEST PIT FIEI	LD LOG	FAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: M3T	P14
	NUM Nel Gill M3		JOB NUMBER: 7499 GROUND ELEV:	310
TEST DIT DATA				sonald
LENGTH WIDTH	DEPTH Mini-	EXCAVATION METHOD	CONTRACTOR: AWT START DATE: 0920 COMPLETION DATE: 0920	5/1037
GROUNDWATER DATA DATE / TIME	1 !		CHECKED BY:	
DEPTH TO WATER	NA		LOCATION SKETCH:	, <u>†</u>
MONITORING DATA			Lafetra C	reek -
Multi-rae Voc	WHYS Cal p HOXY troyed @ thin		· 143566	North
	AMPLE STRATA DEPTH		MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		1.5'-4'		]

			T	EST PIT F	ELD:	LOG	PAGE 1 OF
	PA	RSONS	1/ 1/2	CLIENT:		TEST PIT NO.: M3TP	15
PROJECT:	F	THUM				JOB NUMBER: 7488	10
LOCATION	N:	andfr	11.113			GROUND ELEV:	
						A -	onald
TEST PIT DAT	C - Consumer of Parties	DEPART		EVOLULTION METHOD		CONTRACTOR: ANT	IIIA
LENGTH 7'	WIDTH	DEPTH	mini	excavation method		START DATE: 082015	91100
GROUNDWAT			7711741	WILLOW WIOT		CHECKED BY:	
DATE / TIN	МЕ	1	11	/1/	7		
DEPTH TO	WATER	I N	171 1			LOCATION SKETCH:	, 1
MONITORING	101					- Lafetra Cree	k-
Multi-		C CO H2	BACKGROUN	D TIME/DAT			North
Dlu		ELLOXY	passe	7 7 7	113		North
REMARKS:		100		× 1		-fence -	
			AND PROPERTY AND ADDRESS OF THE PARTY OF THE			NTS	
		SAMPLE	STRATA		SAMPLE D	ESCRIPTION	EXCAVATION EFFORT
DEPTH (FT)	VOC NO	DEPTH					E - Easy
		10-13035					M - Moderate
							D - Difficult
1			-	0-1,5'			-
1-			+	Carniel	for an	avelload 3/s	1
2				doznala	201	evelread, 3/4, some silt cic@1.51	
			T	Coarse an	qwar,	AUMISIT	
3			-	171 11 TEN	cetab	UCO 1.51	
. —			H	1.5'-2'			-
4			-	black-a	Kbior	on decaying, possible ash, I piec	1 -
5				organica	matter	, Possible ask, I piec	e T
				is ted in	etal		
6			+ 4	1-4			1 4
_ —			F	med be	own A	siltysand, med-	1 -
1			-	coarse pur	ellsoi	ted, some	
8							1 1
			T			vel, damp	
9				TD=41 bgs			
			-	0			-
10			+	No Wast			-
11		1 1	-	multi-rae	read	ing=A	1
				muti-rac	700		]
12							]
13			.——				
14			F				-
-			+				-
15							

			TES	T PIT FIELD	LOG	PAGE 1 OF
	PAR	SONS	/ to 1	CLIENT:	TEST PIT NO.: M3TP	16
PROJECT:	Ŧ,	MUM			JOB NUMBER: 7488	316
LOCATION:	La	indfi	11M3		GROUND ELEV:	70
	Chical Can				INSPECTOR: 12, MCV	onald
TEST PIT DATA		т	•		CONTRACTOR: AWT	
LENGTH	WIDTH	DEPTH		AVATION METHOD	START DATE: 082015/	1329
le'	18"	41	minisex	cavator	COMPLETION DATE: 082015	
GROUNDWATER DATE / TIME	RDATA				CHECKED BY:	<del></del>
DEPTH TO WA	ATER	N	HA		LOCATION SKETCH:	
MONITORING D.	The second second	<u> </u>				T
INSTRUMENT	DE	TECTOR	BACKGROUND	TIME/DATE		
Multi-Ra		CO H25	cal.	082015/0715		North
Plus	I LE	Hoxy	passed	1	- wood fence -	navina.
REMARKS:		U			NTS	
	S	AMPLE	STRATA	SAMPLE I	DESCRIPTION	EXCAVATION
XX Virginia Virginia						EFFORT
DEPTH (FT) V	OC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
2 3 4 5 6 7 8 9 9			-	brown 31/4 damp, color de some interbed D=41 bgs Vo Waste hulti-rae red	larkens w/depth dedorange sand	
11						
15			_			=

			Т	TEST PI	T FIELD	LOG	PAGE 1 OF	
	PARS	SONS		CLIENT:		TEST PIT NO.: M3TP17		
PROJECT: FTMM LOCATION: Land Fill M3				JOB NUMBER: 748810 GROUND ELEV:				
TEOD NEW DATE.						INSPECTOR: R.M. C.	mala	
LENGTH	WIDTH 21	DEPTH	ion in i	EXCAVATIONA		START DATE: 082015  COMPLETION DATE: 082015		
GROUNDWATER		<u>T</u>	VIIIII	encava 10	31	CHECKED BY:		
DATE / TIME	<i>D.</i>	111	Λ	17/	7	Oliberta Div.		
DEPTH TO WA	TER	NI	H/	10		LOCATION SKETCH:	4	
MONITORING DA	ATA					- Lafetra Cieck		
INSTRUMENT		TECTOR	BACKGRO		TIME/DATE		1	
Musti-Race		col Hos	Cal.		015/07/5		North	
REMARKS:	LEL	- CX4	Pass	Cal		- Fience -	man realizable communication	
REMARKS:		)				NTS		
	S	AMPLE	STRATA		SAMPLE I	DESCRIPTION	EXCAVATION	
						*	EFFORT	
DEPTH (FT) VO	DC NO.	DEPTH	1				E - Easy	
			- 1				M - Moderate D - Difficult	
1				15-1		some decaying possibly ash gone.  with rachading=6	1 -	

		TES	T PIT FIEL	D LOG		rage 1 or
PAR	SONS		CLIENT:	TEST PIT NO.:	M3TP	18
PROJECT: FTMU LOCATION: Land fill M3				JOB NUMBER: GROUND ELEV: INSPECTOR:	748811 R.M9)av	
TEST PIT DATA  LENGTH WIDTH  () ' / / / / / / / / / / / / / / / / / /	рертн 4' м		avation method (cavato)	CONTRACTOR: START DATE: COMPLETION DATE: CHECKED BY:	AWT 082015	
Multi-Rae voc/	co/Hzs co	GROUND 1.	TIME/DATE 0820/5/07/5	LOCATION SKETCH:		North
REMARKS:	40, 11 4			NTS		7
DEPTH (FT) VOC NO.	AMPLE STRA' DEPTH			PLE DESCRIPTION		EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 0	4' dk brown so a few piece. 0 = 4' bgs weti-rae rea	ity sandylo of coal ding= 0	an.	

f

		TES	T PIT FIE	LD LOG	PAGE 1 OF
PAR	SONS		CLIENT:	TEST PIT NO.:	
	MM ndfill	МЗ		GROUND ELEV:	M3TP19
TEST PIT DATA				INSPECTOR:	AWT
LENGTH WIDTH	DEPTH 41		EAVATION METHOD  XCA VA (0)	START DATE: COMPLETION DATE:	082015/1126
GROUNDWATER DATA		,		CHECKED BY:	
DATE / TIME DEPTH TO WATER	N	A		LOCATION SKETCH:	<b>A</b>
MONITORING DATA				Lafet	ra Creek -
Multi-Rae VOC	CO H2	Eal. Passed	TIME/DATE 092015/67		North
PIW LE	yoxy	proper		- fenc	2
				NTS	
DEPTH (F1) VOC NO.	DEPTH	STRATA	S.A	AMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		1.5	bionon silte zone 1-4' ash, cons some gras 1=4'bgs ultimae rea	loam, dry, souted me	etal,

		TEST PIT FIELD	D LOG	PAGE 1 OF 7
PAR	SONS	CLIENT:	TEST PIT NO.: M3TP	20
PROJECT:	TUM		JOB NUMBER: 748 61	D
The state of the s	ndfill M	3	GROUND ELEV:	
			INSPECTOR: RMCDO	nald
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 082015/	1136
7' 2'	41 r	ini-excavator	COMPLETION DATE: 082015	
GROUNDWATER DATA			CHECKED BY:	
DATE / TIME	MIA	MA	TO CONTROL OF THE PARTY OF THE	
DEPTH TO WATER MONITORING DATA	10/1/		LOCATION SKETCH:	1
	TECTOR BAC	GROUND TIME/DATE	- Lafetra Creek	
	COLHIS Ca	082015/07/3	5	- North
plus LE		SSEd		North
REMARKS:	1 - 1 - 1			E STATE OF THE STA
			N15	
SA	AMPLE STRA	SAMPI	LE DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH			EFFORT E - Easy
DEFIN(FI) VOC NO.	DEFIN			M - Moderate
				D - Difficult
1		brown silty  dry. Some last  1'-9'  SAA, increases  a bottom, was  tire (3' diamete  mottled gray  4'=TD  multi-rae rea	loam, cootzone, ge (8+") stones  (sand, Al. moist te including in) reparate green-rust coloring  ading = 6	

			,			PAGE 1 OF	
		TES	T PIT FIELD	LOG			
PA	ARSONS		CLIENT:	TEST PIT NO.:	M3TP2	2	
PROJECT:	-TIUM i and fi	11M3		JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.1490	neld	_
TEST PIT DATA  LENGTH WIDTE  Q <sup>i</sup> 20"  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	4i		avation method (cavator	CONTRACTOR: START DATE: COMPLETION DATE CHECKED BY: LOCATION SKETCH	AVVT 0820151 0820151		
MONITORING DATA						Mi	
	DETECTOR DC Ce H <sub>2</sub> S	Cal. Passed	082015 0715	NT		Ceelc	
	SAMPLE	STRATA	SAMPLE D	DESCRIPTION NTS	5	EXCAVATION	$\dashv$
DEPTH (FT) VOC N	O. DEPTH					EFFORT E - Easy M - Moderate D - Difficult	
1			novon si Hyleam	Isand, ush, con a susting. Concert	caste ete, quetal,		

	v.		TE	ST PIT FIE	LD		PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: M3TP2	23
PROJECT: LOCATION:		MM	МЗ			JOB NUMBER: 74981 GROUND ELEV:	0
TEST PIT DATA						INSPECTOR: R.M.D.C. CONTRACTOR: A.W.T.	
LENGTH  (Q'  GROUNDWATER	WIDTH  20" R DATA	DEPTH 41		xcavation method		START DATE: <u>U82015</u> COMPLETION DATE: <u>U82015</u> CHECKED BY:	11229
DATE / TIME DEPTH TO WA MONITORING DA		NI,	A		7	LOCATION SKETCH:	7
INSTRUMENT MULTI-RA Plus REMARKS:	e voc	TECTOR  CO H <sub>2</sub> S YOXY	Cal- passed	082015/0	715	NTS	North Creeke
DEPTH (FT) V	OC NO.	AMPLE DEPTH	STRATA	SA	MPLE DI	ESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1				5'-4'	to it is both	andy loam, dry,  canel, waste ncholes ash,  tom of hole,  metal.  ding = 0	

	TEST PIT FIEL	D LOG		PAGE 1 OF
PARSONS	CLIENT:	TEST PIT NO.:	M3TP2	4-
PROJECT: FTMM LOCATION: LANAGI	143	JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.W. Yon	
TEST PIT DATA  LENGTH WIDTH DEPTH  (L <sup>1</sup> 20 <sup>+1</sup> 4 <sup>1</sup> GROUNDWATER DATA  DATE/TIME	EXCAVATION METHOD  MINIPLEXCAVATO	CONTRACTOR: START DATE: COMPLETION DATE: CHECKED BY:	AWT 082015/1	
MONITORING DATA  INSTRUMENT DETECTOR  Plus LELLOXY  REMARKS: No Stake on h based on map.	BACKGROUND TIME/DATE  Cal: 0970/5/07/5  PASSED  1. Side of Creek, pit placem			North North
DEPTH (FT) VOC NO. DEPTH		PLE DESCRIPTION		EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	brown silty  range sand  Sand is hard  2' 4'  brown silty  Sand is hard  2' 4'  as phalt, bu  tile, rusting  TD=4' bgs  multi-raeread	waste inclick, brokent. metal		

	TE	ST PIT FIELD	LOG	1.102 7 01
PAR	SONS	CLIENT:	TEST PIT NO.: M3TP	25
	MM Id Fill M3		JOB NUMBER: 74981 GROUND ELEV:	
TEST PIT DATA			INSPECTOR: R.M9.  CONTRACTOR: AMT	onald
LENGTH WIDTH  5.5 20"  GROUNDWATER DATA		CCAVATION METHOD	START DATE: 082015 COMPLETION DATE: 082015 CHECKED BY:	1305
DATE / TIME DEPTH TO WATER	NIA	1	LOCATION SKETCH:	1 1
	TECTOR BACKGROUND  COHUS Cal-  LOXY PASSED	TIME/DATE 082015/07/5	Fence —	Will North
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH	SAMPLE I	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		brown silty & friable, dry  5'-4' orange silty well sorted, & Cementation - I minial coho Ceremic mue D=4' bgs rulti-vaeread	sand, med, ow-moderate 1 bottle, I broken	

## APPENDIX C FTMM-04: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

# APPENDIX C: FTMM-04 Landfill Boundary Refinement and Methane Gas Survey Results

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1.0	LANDFILL BOUNDARY REFINEMENT SUMMARY	.C-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	.C-2
3.0	REFERENCES	.C-2

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C1 Landfill Boundary Refinement Summary

C2 Methane Gas Survey Results

### LIST OF FIGURES

Figure No.

C1 Landfill Boundary Refinement and Methane Gas Survey Results

### LIST OF ATTACHMENTS

Title

Attachment Title
C-A Test Pit Logs

### 1.0 LANDFILL BOUNDARY REFINEMENT SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. Based on the historical information review, the boundaries of Landfill FTMM-04 remain generally similar to how they were defined in 2010, however, the boundaries were refined in a few areas. The most significant refinement was made to the southern and eastern boundaries of the landfill since there was landfill debris in Test Pits 8, 11, 12, 15, and 16 that were previously shown on the maps as containing no debris. In the south-central portion of FTMM-04 near Test Pit 12, shallow soil borings B-53, B-54, and B-55 contained no debris. Therefore, the boundary of the landfill was moved east in this area, which is consistent with observations of the landfill boundary made during the 2015 review of a series of aerial photographs dated 1947, 1957, 1963, and 1969. Additionally, west of Mill Creek, the log of M4MW06 was reviewed, and found to contain no debris, and based on this the boundary was moved eastward to align with this monitoring well. These changes are reflected on **Figure C1**. In addition, data gaps in the landfill boundaries were identified to the north (Test Pits 4C and 5), to the east (Test Pits 8 and 16), and to the south (B-12, B-62, and B-63) to be addressed during the landfill boundary refinement field activities.

In addition, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. Some historical test pits (1, 4, 4A, 4D, and 4E) did not appear to meet the criteria to be considered landfill solid waste. The designation of these historical test pits was modified on **Figure C1** to indicate landfill solid waste was not present.

Test pits during the landfill boundary refinement were advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the report. To form a more comprehensive view of the landfill, additional test pits were performed in other areas of the landfill including: 1) step-out test pits to the west of Mill Creek after landfill solid waste was found in that area; and 2) in the interior of the landfill to the west and east of Mill Creek since there was limited historical test pit data in these areas. Test pits were advanced at 38 locations at FTMM-04 as part of the landfill delineation activities on August 19, August 31, and September 2, 2015. Historical (2010) and 2015 test pit locations are provided in **Figure C1**.

Logs for the test pits advanced in 2015 are provided in **Attachment C-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table C1**.

Observations of the 2015 test pits in combination with the historical test pit logs to the west of Mill Creek indicate pockets of landfill solid waste in the northwestern and southwestern corner of the landfill. Areas of landfill solid waste including ash, coal, concrete, and metal indicative of a landfill were found to be surrounded by test pits with no waste or test pits with scattered debris that was not contiguous (categorized as debris of *de minimus* quantity). These test pits around the areas of landfill solid waste did not meet the criteria to be considered as part of the delineated landfill. For example, at the pocket of landfill solid waste in the southwestern corner of the landfill, M4TP5 contains landfill solid waste, but is encircled by M4TP3, M4TP4, M4TP7, and historical test pits 1 and 1A which do not. Similarly, at the pocket of landfill solid waste in the northwestern corner of the landfill, test pits M4TP4, M4TP6, M4TP23, and

historical test pit 4C contain landfill solid waste, but are encircled by test pits 4F, M4TP1, M4TP14, M4TP15, M4TP24, and M4TP26 which do not. The 2015 test pits along the western shore of Mill Creek and in the central portion of the landfill (M4TP2, M4TP13, and M4TP27) did not contain landfill solid waste. These observations were consistent with the information contained in the Construction Closeout Report (Princeton Hydro, 2011) documenting that the 2009 creek slope re-grading along Mill Creek, indicating no landfill solid waste (e.g, debris) was found during those activities. Therefore, the landfill boundaries west of Mill Creek were revised accordingly to contain the pockets of landfill solid waste (**Figure C1**).

To the east of Mill Creek, the test pits along the perimeter contained scattered debris that was not contiguous or did not contain landfill solid waste (M4TP9, M4TP16, M4TP17, M4TP18, M4TP19, M4TP20, M4TP21, and M4TP22), therefore, the landfill boundaries were revised inward away from the roads bounding the eastern portion of the landfill to the north, east, and south (**Figure C1**). The test pits performed on the interior of the landfill east of Mill Creek contained landfill solid waste consistent with the historical test pit logs and borings.

**Figure C1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of eleven (11) landfill gas readings (including one QA/QC sample) were measured at ten soil gas locations at FTMM-04 as part of the methane gas survey. Sampling was conducted on July 27 and July 28, 2015. Methane was detected at two locations (M4SG1 and M4SG4), and only one location (M4SG4) exceeded 25 percent of the methane LEL. This location was located on the interior of the landfill east of Mill Creek. Four step out locations (M4SG7, M4SG8, M4SG9, and M4SG10) were measured based on the methane detections. Soil gas locations on the perimeter of the landfill (including step outs) did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-04. The methane gas survey results indicate the area within the landfill where methane was found above 25 percent of the LEL is very limited. The methane detections are attributed to methane gas generating conditions at the landfill. The landfill gas readings are summarized in **Table C2.** The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are shown on **Figure C1**.

#### 3.0 REFERENCES

Parsons. Remedial Investigation Report for Site FTMM-04, Fort Monmouth, Oceanport, Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and Support Center, Huntsville, Alabama. August 2014.

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

### **TABLES**

Table C1 Landfill Boundary Refinement Summary

Table C2 Methane Gas Survey Results

### Table C1 Landfill Boundary Refinement Summary Site FTMM-04

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

waste?		Category	Comments		
M4TP1	N	3	No solid waste observed; not landfill.		
M4TP2	N	3	No solid waste observed; not landfill.		
M4TP3	N	3	No solid waste observed; not landfill.		
M4TP4	Y	1	Solid waste including black ash indicative of landfill.		
M4TP5	Y	1	Solid waste including ash, asphalt shingles, wood, terracotta pipe indicative of landfill.		
M4TP6	Y	1	Solid waste including concrete, ash, rusted metal pipe, concrete pieces indicative of landfill.		
M4TP7	N	3	No solid waste observed; not landfill.		
M4TP8	N	3	No solid waste observed; not landfill.		
M4TP9	N	3	No solid waste observed; not landfill.		
M4TP10	N	3	No solid waste observed; not landfill.		
M4TP11	N	3	No solid waste observed; not landfill.		
M4TP12	Y	1	Solid waste including concrete pieces, some ash, some rusty metal indicative of landfill.		
M4TP13	N	2	Debris of de minimus quantity; not landfill.		
M4TP14	N	3	No solid waste observed; not landfill.		
M4TP15	N	3	No solid waste observed; not landfill.		
M4TP16	N	3	No solid waste observed; not landfill.		
M4TP17	N	3	No solid waste observed; not landfill.		
M4TP18	N	3	No solid waste observed; not landfill.		
M4TP19	N	3	No solid waste observed; not landfill.		
M4TP20	N	3	No solid waste observed; not landfill.		
M4TP21	N	2	Debris of de minimus quantity; not landfill.		
M4TP22	N	2	Debris of de minimus quantity; not landfill.		
M4TP23	Y	1	Solid waste including black ash indicative of landfill.		
M4TP24	N	3	No solid waste observed; not landfill.		
M4TP25	N	2	Debris of de minimus quantity; not landfill.		
M4TP26	N	3	No solid waste observed; not landfill.		
M4TP27	N	3	No solid waste observed; not landfill.		
M4TP28	Y	1	Solid waste including concrete indicative of landfill.		

### Table C1 Landfill Boundary Refinement Summary Site FTMM-04

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments		
M4TP29	Y	1	Solid waste including concrete, brick, coal, ash, burned wood indicative of landfill.		
M4TP30	Y	1	Solid waste including concrete, misc. metal, coal, burned wood indicative of landfill.		
M4TP31	Y	1	Solid waste including concrete indicative of landfill.		
M4TP32	Y	1	Solid waste including concrete indicative of landfill.		
M4TP33	Y	1	Solid waste including concrete, metal pipe, ash, coal, ceramic tile, wire, brick indicative of landfill.		
M4TP34	Y	1	Solid waste including brick, wood, ash, large concrete pieces indicative of landfill.		
M4TP35	Y	1	Solid waste including concrete indicative of landfill.		
M4TP36	Y	1	Solid waste including concrete, brick, ash, coal, burned wood indicative of landfill.		
M4TP37	Y	1	Solid waste including concrete, asphalt, coal ash indicative of landfill.		
M4TP38	Y	1	Solid waste including concrete, asphalt, slag, broken glass indicative of landfill.		

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

### Table C2 Methane Gas Survey Results Site FTMM-04

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M4SG1	7/27/2015	0.3	5.0	0.4	20.4	
M4SG1QA	7/27/2015	0.2	4.0	0.3	20.9	QA Sample
M4SG2	7/27/2015	0.0	0.0	0.8	20.8	
M4SG3	7/27/2015	0.0	0.0	0.1	21.7	
M4SG4	7/27/2015	5.5	OOR	5.2	2.3	
M4SG5	7/27/2015	0.0	0.0	0.0	21.2	
M4SG6	7/27/2015	0.0	0.0	8.8	13.9	
M4SG7	7/28/2015	0.0	0.0	2.5	19.5	Step out
M4SG8	7/28/2015	0.0	0.0	1.1	18.5	Step out
M4SG9	7/28/2015	0.0	0.0	0.9	20.5	Step out
M4SG10	7/28/2015	0.0	0.0	0	21.8	Step out

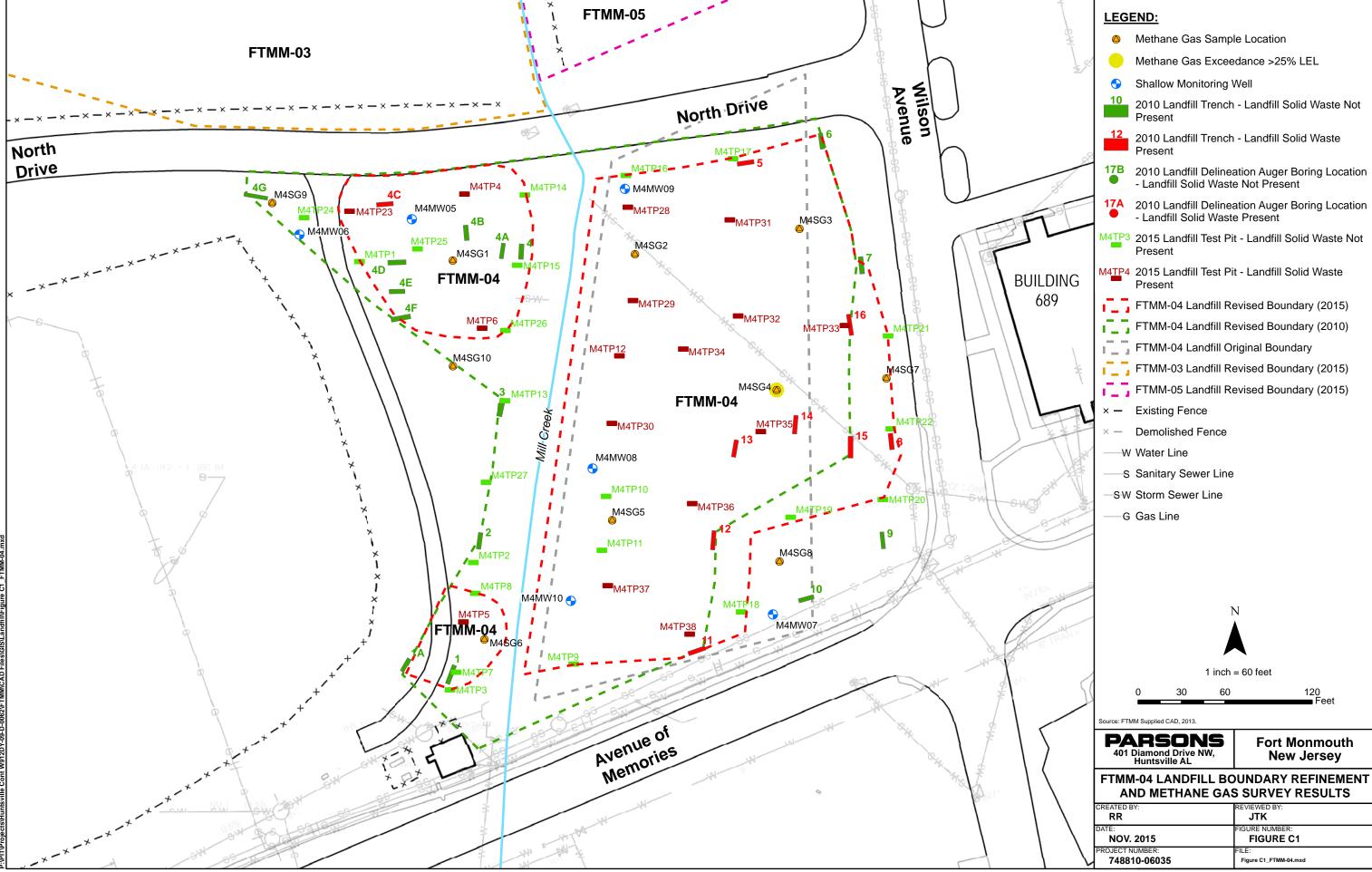
#### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

### **FIGURES**

Figure C1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix C Landfill Boundary Refinement and Methane Gas Survery Report for Nine Landfills



### **ATTACHMENTS**

Attachment C-A Test Pit Logs

					י ארצאר ווארא ווארא ווארא ווארא	TOO		PAGE 1 OF
					FEST PIT FIELI	LOG		
PARSONS CLIENT:						TEST PIT NO.:	MATP:	7_
PROJECT: FTMM LOCATION: LandfillMA					JOB NUMBER: GROUND ELEV:	74881		
TEST PIT DATA  LENGTH WIDTH DEPTH  5.5 / /8" 4'  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER  MONITORING DATA  INSTRUMENT DETECTOR  MULTI-PAL VOC CO H-5			TECTOR	EXCAVATION METHOD  MINI-EXCAVATION  BACKGROUND  TIME/DATE  Cal Dassed 0831/5/0730		INSPECTOR:  CONTRACTOR:  START DATE:  COMPLETION DATE  CHECKED BY:  LOCATION SKETCH:		
REMARKS:			777			NTS	F8	)
DEPTH (FT)	voc	NO.	AMPLE DEPTH	STRATA	SAMPL	E DESCRIPTION	TPB)	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1					to advade, mottled wand, damy	sand,		

		<b>FEST PIT FIEL</b>	LD LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MATP	1
	MM ndfi11M4		JOB NUMBER: 7488	D
TEST PIT DATA  LENGTH WIDTH	DEPTH	EXCAVATION METHOD	INSPECTOR: Q.M.S.  CONTRACTOR: AWT  START DATE: 061914	
GROUNDWATER DATA	41	-excavator	COMPLETION DATE: 081914	5
DATE / TIME DEPTH TO WATER MONITORING DATA	NIA		LOCATION SKETCH: North DI	P23
multi-rae VOC/	COH25 Cal.	1 - 1	20 TINTS	North
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH		PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 0'-4' - med oline b - lorm, med sa - some interbe - Sub angular - No Waste - multi-rae lea	nown silty, sandy and, dded orange sand cobbles 0-2'	

		TEST PIT FIELI	DLOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MAT	P3
	MM dfill 144		JOB NUMBER: 748	810
Location.	Oct III FC I			Donald
TEST PIT DATA			CONTRACTOR: AV	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD		7/5/1200
5' 18"	4' mi	ni-excavator		1915
GROUNDWATER DATA DATE / TIME			CHECKED BY:	
DEPTH TO WATER	NIA		LOCATION SKETCH:	
MONITORING DATA				Creek 1
INSTRUMENT DE	TECTOR BACK	GROUND TIME/DATE		
	. 1 2	libration 081915/072	00	North
	loxy   p	assed		7
REMARKS: Pit moved	approx. 10	N. of state due to	NTS	ontfall
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				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
				M - Moderate D - Difficult
1		- 0-1.5'- brown silte  1.5'-4' cohesine, han Nowaste  multi-rae reac	nown silty-sand	

				TE	ST PIT FI	ELD L	OG	-0.2k	PAGE 1 OF	
	THE CHOICE IN	PAR	SONS		CLIENT:		TEST PIT NO.:	MATP.	4	
PROJECT	·	FT	ММ			JC	OB NUMBER:	748810		
LOCATIO	N:		indfil	144		GI	ROUND ELEV:			_
		100				IN	NSPECTOR:	R.MCDO	nald	
TEST PIT DA	T		T				ONTRACTOR:	AWT	11.21	_
LENGTH		DTH 7	DEPTH 41		acavation method		FART DATE:  OMPLETION DATE:	081915	1034	
GROUNDWA				1 mini-e	xca va to		HECKED BY:	001915	)	_
DATE / TI		****	1 1 20	1	1	/				_
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PIM PIM	l nca	1 10	2/0x4			tue to		•		
elec	tric	ali	ine in a	ma.	c. 41 S. of stake a	, ,	NTS			
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									M - Moderate D - Difficult	$\Box$
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3					- waste -	black	ash + Sand	d.		7
					- Waste - orange sand moist	l+ grav	es (1-1.51)	)		
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A Committee of the Comm		TEST PIT FIE	LD LOG	PAGE 1 OF 1
PARS	ONS	CLIENT:	TEST PIT NO.: M4TP(	l
PROJECT:	ии		JOB NUMBER: 748610	
	ndfillt	14	GROUND ELEV:	
			INSPECTOR: R.M. CO.	snald
TEST PIT DATA		Manual Control of the	CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH 4'	EXCAVATION METHOD		1100
	4	mini-excavator	COMPLETION DATE: 091915	
GROUNDWATER DATA DATE / TIME			CHECKED BY:	
DEPTH TO WATER	NI	A	LOCATION SKETCH:	7 4
MONITORING DATA				1
INSTRUMENT DET	ECTOR	BACKGROUND TIME/DATE		Creek
	COLHS	Cal 2454 081915/0	720	North
Plus Ltd	JOXY			/
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				M - Moderate
				D - Difficult
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	PAR	SONS		CLIENT:		TEST PIT NO.:	MATP:	5
PROJECT:	Fr	ми				JOB NUMBER:	74881	D
LOCATION	N: _Lo	indfi	1144			GROUND ELEV: INSPECTOR:	R.MyDon	2000
TEST PIT DAT	ГА					CONTRACTOR:	AWT	
LENGTH	WIDTH	DEPTH		CAVATION METHO	OD	START DATE:	0601915	/1145
(e)	18"	41	MINI-L	xcavator		COMPLETION DATE:	091915	)
GROUNDWAT DATE / TIM		,,,	1	2		CHECKED BY:		
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MONITORING	DATA						į.	
INSTRUME		TECTOR	BACKGROUND	TIME/I	7	_	)	
multi-re		CO/ H2S	Calibratio	n 08191	5/0720	-		Creek North
plus	) LEI	loxy	passed				}	
REMARKS:		- 1				NTS		
	S	AMPLE	STRATA		SAMPLE D	ESCRIPTION		EXCAVATION
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DEPTH (FT)	VOC NO.	DEPTH						E - Easy
								M - Moderate D - Difficult
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3			-	orangi	Sh-bron	ion sandy	87/4	-
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				terraco.	Ha pripe			
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	-	TEST PIT FIEL	LD LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: M4	TP7
PROJECT: F LOCATION: La	MM nolfill MA		JOB NUMBER: 748 GROUND ELEV: INSPECTOR: 72.M	810 Donald
TEST PIT DATA			CONTRACTOR: AW	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD		15/1157
5.5' 18"	4' m	ini-excavator	COMPLETION DATE: 0819	(5'
GROUNDWATER DATA	l		CHECKED BY:	
DATE / TIME	NIA			
DEPTH TO WATER	1412		LOCATION SKETCH:	1
MONITORING DATA	TECTOR DACK	CROINID THE THE		1 1
Multi-Rae Voc	7 7 7 7	GROUND TIME/DATE  (1. Passe) 09/9/5/0	720	creek North
REMARKS:	1004			1
			NTS	
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH	SAM	PLE DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1		+1.5'-4'	loam grading to loam grading to lon silty sand, hard, hod. cohes ding: O	ine

	TE	ST PIT FIELD	LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: M4T	PB
	TMM andfill #14		JOB NUMBER: 7489 GROUND ELEV: INSPECTOR: R.M.	
LENGTH WIDTH  5' /6"  GROUNDWATER DATA	177	XCAVATION METHOD XCA VATO	CONTRACTOR: AWT  START DATE: U8 9  COMPLETION DATE: 09 9 15  CHECKED BY:	15/1132
DATE / TIME DEPTH TO WATER MONITORING DATA INSTRUMENT DE	ETECTOR BACKGROUND	TIME/DATE 04) 1915/0720	LOCATION SKETCH:	Creek North
Plus LE REMARKS:	AMPLE STRATA		NTS E DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH			EFFORT E - Easy M - Moderate D - Difficult
1	1.5	beonon sitty l beonon sitty l 5-4'  orangish-brone a fewtismall ( wood, I piece h multi-rae reading	oam, root zone, dre on sand, silty have (3') pieces & burne noken glass	1

	2.2.2		TES	ST PIT FI	ELD	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: M4 T	pg
PROJECT:		MM				JOB NUMBER: 74 9 6	10
LOCATION	N:	indfi	114			GROUND ELEV: INSPECTOR: 2, W9)	0 d
TEST PIT DAT	TA			and the second second		CONTRACTOR: AWT	onaco
LENGTH	WIDTH	DEPTH		CAVATION METHOD		START DATE: 09191	
(0.5'	2'	4'	1 Mini-1	excavator		COMPLETION DATE: DOI 9 15	5 '
GROUNDWAT DATE / TIM		1	1.	7		CHECKED BY:	
DEPTH TO	WATER	141	1			LOCATION SKETCH:	λ <b>↑</b>
MONITORING		TROMOR .				ζ,	2,1
Multi-		CO H25	BACKGROUND	081915/		i cele	Crack North
plu		Joxy	passed			5	. (
REMARKS:		, ]				- A Ve. of Men	nies-'
	S	AMPLE	STRATA		SAMPLE D	ESCRIPTION	EXCAVATION
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DEFIN(F1)	100	DEFIN					M - Moderate
				b!			D - Difficult
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3			v	ned., well-	sorted	1, moist	
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15							

	T	EST PIT FIEI	LD LOG	PAGE 1 OF
PAR	ISONS	CLIENT:	TEST PIT NO.: M4 TF	210
	TMM undfill M4		JOB NUMBER: 7488) GROUND ELEV: INSPECTOR: R.MDO	0
LENGTH WIDTH  5.5' / 6"  GROUNDWATER DATA  DATE / TIME	DEPTH 4' mini-	excavation method excavator	CONTRACTOR: AWT START DATE: 08/9/ COMPLETION DATE: 08/9/ CHECKED BY:	
Multi-Rae VOC	ETECTOR BACKGROU	1	LOCATION SKETCH:	North
DEPTH (FT) VOC NO.	SAMPLE STRATA DEPTH	SAN	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			am, loot zone, dry own silty sand, sorted, dry to 8l.	

		TEST P	IT FIELD	LOG	PAGE 1 OF
PAI	RSONS	CLIEN	Т:	TEST PIT NO.: MA	ITPII
PROJECT:	THN		70 100	JOB NUMBER: 74	9810
LOCATION:	and fil	144		GROUND ELEV:	
TEST PIT DATA				INSPECTOR: Z.V	4 Donald
LENGTH WIDTH	DEPTH 41	EXCAVATION		START DATE: 08	1915/1440
GROUNDWATER DATA	171	mini-excavi	2101	CHECKED BY:	119
DATE / TIME	1 11	1	7		
DEPTH TO WATER	11/14	t - 1		LOCATION SKETCH:	<u></u>
MONITORING DATA				1	
	DETECTOR	BACKGROUND	TIME/DATE	week	
	CO [H25]		915/0720	0/ 1	North
	2/oxy	passed			
REMARKS: FORGOT	to tal	ce photos.		NTS	
	SAMPLE	STRATA	SAMPLE I	DESCRIPTION	EXCAVATION
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DEPTH (FT) VOC NO.	DEPTH				E - Easy
					M - Moderate D - Difficult
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13		-			
		+			-
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		T			1 1
15					

	TEST PIT FIEL	D LOG
PARSONS	CLIENT:	
PROJECT: FTM (L LOCATION: Land F	1	JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: R.M. Donald
TEST PIT DATA  LENGTH WIDTH DEPTH  (o' / &" 4'  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER  MONITORING DATA  INSTRUMENT DETECTOR  WWLHI-RAL VOC CO   H2S		CONTRACTOR: AWT START DATE: 081915  COMPLETION DATE: 081915/1455  CHECKED BY:  LOCATION SKETCH:
Plus LEZ OXY REMARKS:	. passed	) NTS
DEPTH (FT) VOC NO. DEPTH	STRATA SAMP	PLE DESCRIPTION  EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1	SAA, gradin Sand, med., we has waste - Some ash, s	

	TE	ST PIT FIELD	LOG	PAGE 1 OF \$
PARS	ONS	CLIENT:	TEST PIT NO.: MATP/	3
PROJECT: FTA	M dfill M4		JOB NUMBER: 748810 GROUND ELEV: INSPECTOR: R.M. D.C.	)
TEST PIT DATA  LENGTH WIDTH  5' / 6"  GROUNDWATER DATA  DATE / TIME		excavation method excavator	CONTRACTOR: AWT START DATE: 08/9/5 COMPLETION DATE: 08/9/5 CHECKED BY:	5/1110
DEPTH TO WATER  MONITORING DATA  INSTRUMENT DETE  MULTI-YAL VOCC	ECTOR BACKGROUND OHZS Calibrat OXY DASSED	tion 001915/0720	LOCATION SKETCH:	Ecreek North
DEPTH (FT) VOC NO.	DEPTH STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 4	loam, dry wootzone on sandy sift, tely cohestive, of musting metal  to	

			TES	T PIT FI	ELD	LOG	ACCOUNT NAME OF THE PARTY OF TH	TAGE T OF	1
	PAR	SONS		CLIENT:		TEST PIT NO.:	MATP 1.	4	
PROJECT: LOCATION		744 nd fil	1 M4			JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 R.M.D.		
TEST PIT DAT	^A					CONTRACTOR:	ANT	70,000	
LENGTH	WIDTH	DEPTH	EXC	AVATION METHOD		START DATE:	0001911	5/1041	
(0,1	18"	41	mini-ex			COMPLETION DATE:	081915	7110-11	
GROUNDWAT	ER DATA			Y		CHECKED BY:			
DATE / TIM	IE .	11	١٨					Up to	
DEPTH TO	WATER	19	I A			LOCATION SKETCH:	100000000000000000000000000000000000000		<b>†</b>
MONITORING	DATA					- N.M	ive —	-	
INSTRUMEN	NT DE	ETECTOR	BACKGROUND	TIME/DATE					1
multi-ra		CO/H2S	Pal.	081915/03	720		=  cre	ek N	orth
plus	Lei	loxy	passed						
REMARKS: N	noved pit	t appro	X 4 5.08 St	takedue to fi	ber-	NTS	1		
F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AMPLE	STRATA			ESCRIPTION		EXCAVATION	ON
l i								EFFORT	
DEPTH (FT)	VOC NO.	DEPTH						E - Easy	
			1					M - Moderate	e
								D - Difficult	
1			- 0-	-1		1 1			=
			+ 1	nown silt	1, San	dy loan	•		٦
2			Ε,	,		dy loan			
		1	+1'-	4'				İ	
3				orange sa	nd me	ed, grained	little		
			L	210110	1.	0		1	
4				y doc-c					_
		1		1 waste		ed, grained,			_
5			+ 12	10 Wasa					4
			<u> </u>						4
6			+ m	ultipre ve	ading	1-D			4
7		ı	F			)			$\dashv$
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8									7
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9		62							
10									4
		1							
11									_
s2/(s			F						4
12		1	-						4
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14			-						-
17			+						-
15									]

	T	EST PIT FIEL	D LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: M4	TP15
PROJECT: FI	MM ndfill M4		GROUND ELEV:	2810 Donald
TEST PIT DATA  LENGTH WIDTH  5' /8"		EXCAVATION METHOD	CONTRACTOR: AV	VT 915/1054 11918
GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	NAA	1	CHECKED BY:  LOCATION SKETCH:	<b>^</b>
Multi-Rae VOC	TECTOR BACKGROUN  CO H25 Cal.  Passes	081915/0720	NTS	Que North
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH		PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
23		0-4' Silty sand 6-1', then It from 1'-4', 5 tight, Noh	y loam, brown for angish brown forme what cohesiste ading: 0	rom -
56		multi-ral M	ading to	
8				
10				
1213				
14				

			TES	T PIT FIELD	LOG	PAGE 1 OF 1
	PAR	SONS		CLIENT:	TEST PIT NO.: M4TP/	o
PROJECT: LOCATION:	•	111 and fi	11 114		JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: 2.M90	) (
TEST PIT DATA	A				CONTRACTOR: PWT	orena
LENGTH	WIDTH	DEPTH	EXC	AVATION METHOD		5/1313
6'	18"	4'	mini-ex	cavator	COMPLETION DATE: 061915	5
GROUNDWATI	ER DATA				CHECKED BY:	
DATE / TIM	E	ALL	1			
DEPTH TO V	WATER	IVI	4	1/1/	LOCATION SKETCH:	<b>↑</b>
MONITORING	DATA				- N. Drive -	-
INSTRUMEN	1	TECTOR	BACKGROUND	TIME/DATE	- 4	- 1
Multi-ra		CO/H2S	cal.	081915/0720	3	North
plus	LEI	-loxy	passed		4 0	
REMARKS:					NTS	
	SA	AMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH	1			E - Easy
						M - Moderate
<del>                                     </del>						D - Difficult
I ,			- <i>ò</i> -	4'		1 -
'-			+ 1	Moun eilte la	- n some gravel	1 -
2			- '		"	1
			+ 4	ery, slight ye	11 on coloring wage	4 7
3				2-1 la idealm	we sew sie us of	1 7
		1	T	5 4 isciones,	en, some gravel, low coloring w/depth okun ew pie ces of	1 ]
4				broken tena	cotta pi pe	
			_			
5			-			1 4
			- mu	ulti-rae readi	rg: O	1 4
6			+		Q	1 -
7			-			1 -
1			+			1 1
8						1
	1 1					7
9						
			T			1 ]
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11						1 4
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12			+			-
13			-			-
13			+			-
14			F			-
15			1			]

			TES	T PIT	FIELD	LOG		PAGE 1 OF	
	PAR	SONS		CLIENT:		TEST PIT NO.:	MATPI	7	
PROJECT:	F	тии				JOB NUMBER:	74881	D	
LOCATION	1: Lo	andfil	1 M4			GROUND ELEV:			_
						INSPECTOR:	R. MOOn	ild	
TEST PIT DAT	`A					CONTRACTOR:	AWT		_
LENGTH	WIDTH	DEPTH		AVATION METH	OD	START DATE:	081915/	1326	_
6'	18"	4'	mini-ex	cavator		COMPLETION DATE	081915		_
GROUNDWAT			V 4 1	<del></del>		CHECKED BY:			_
DATE / TIM		N	A	-	-	LOCATION SKETCH:			-
MONITORING					V		sive -		
INSTRUMEN		TECTOR	BACKGROUND	TIME/I	DATE				
multi-r	ae Voclo	co/H2S	Cal. passed	081919	5/0720			North	
plus	LEL	loxy			,				
REMARKS: P	it appr	ox. le	S. of stake	ed locatio	n blc	NTS			
61		AMPLE	STRATA			DESCRIPTION		EXCAVATION	-
						2001111011		EFFORT	
DEPTH (FT)	VOC NO.	DEPTH	1					E - Easy	
								M - Moderate	
			<del> </del>					D - Difficult	-
1			- 0-	4'		3 9			-
			十八	nown .	silty,	sandyloo	im,		
2				some al	avel Dd	ru 0			
				fan o	.01 - 1 -	sandy loo ry bu cotto pip	. 1		
3				1 wsn	can pec	es of mi	ken		-
. —			-	concret	e, tena	cotta pip	٤		-
4			+		,	1 1			+
5			F						$\forall$
			+ .m	Iulti-ra	e leadi	ng: A			1
6						0			
		- 1							]
7								1	4
			F						+
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9			F						$\forall$
			+						1
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12			+						+
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15			_						1

		TEST PIT FIELD	LOG	PAGE 1 OF *
PAR	SONS	CLIENT:	TEST PIT NO.: M4T	P18
	TMM endfill	14	JOB NUMBER: 7498  GROUND ELEV:	10
TEST PIT DATA			CONTRACTOR: 12.WG	Donald
LENGTH WIDTH 5,5' 18"	DEPTH W	excavation method		5/1920
GROUNDWATER DATA			CHECKED BY:	
DATE / TIME	¥ /			
DEPTH TO WATER	I W/	AVV	LOCATION SKETCH:	1
MONITORING DATA			_	
Multi-Rae Voc	100/Hs c	al. 000915 072		North
	loxy.	(2013 960)	- Ave. Juen	-1
REMARKS:	O		NTS OF CORC	ories -
S	AMPLE STR	SAMPLI SAMPLI	E DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy M - Moderate
1		brown silty sand grading to ora grading to ora silty sand, me little gravel No Waste  multi-rae read	dyloam, dry, ngish brown ed., well-sorted,	D- Difficult

			TES	ST PIT FIE	CLD	LOG		TAGE T OF	
	PAR	SONS		CLIENT:		TEST PIT NO.:	14 TP10	<u>}</u>	
PROJECT: LOCATION:	F	TMM	11 M4			GROUND ELEV:	48810 MDon	nle	_
TEST PIT DATA	A						WT		
LENGTH	WIDTH	DEPTH	EXC	CAVATION METHOD		1	1919 15	1400	_
5'	18"	4'	mini-ex	cavator			191915	1	
GROUNDWATI	ER DATA					CHECKED BY:			
DATE / TIMI	Е	NI	1	1					
DEPTH TO V	WATER	INI.	A			LOCATION SKETCH:		1	
MONITORING I	DATA				nim see		792		
INSTRUMEN		TECTOR	BACKGROUND	TIME/DATE		TF 19	-	- Wilson North	
multi-ro		(CO/H2S	cal.	08/15/0	720			- North	
plus	LET	loxy	passed	·				1	
REMARKS:		U				NTS			
	s	AMPLE	STRATA	5	SAMPLE D	ESCRIPTION		EXCAVATION	
				_				EFFORT	
DEPTH (FT)	VOC NO.	DEPTH						E - Easy	
			1					M - Moderate	
								D - Difficult	
			-0'-	4'					4
1			+ 6	nown silt	4.50	andy loam	de.		-
			F "		1-	andy loam ngish-brown sorted, Little	, or ag		4
2			+ 6	grading to	Jola	ngish-brown	sand,		4
				nedium, e	nell-	sorted, Little	grand.		$\dashv$
3			+	,			U		$\dashv$
4			F 1	Jo Waste					-
1			+ -						٦
5			F						٦
			1111	ulti-rae r	and i	· 0. 4			
6			- 100	ice. I was h	LABOR	9.0			٦
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DARCONC	TEST PIT FIEI		<u>ጉመ ላ ብ</u>
PROJECT: FTW LOCATION: Land	CLIENT:	JOB NUMBER: 746 GROUND ELEV:	TP 20 1810 1920 mald
TEST PIT DATA  LENGTH WIDTH DEPTH  5.5' 18" 4"  GROUNDWATER DATA  DATE / TIME	EXCAVATION METHOD  Mini-ly ca Vastor	CONTRACTOR: AV	VT 915/1400
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  DETECTOR  Multi-val  Voc Co Ha  Plus  LET Oxy  REMARKS:	BACKGROUND TIME/DATE Cal-jassed 09/915/69	LOCATION SKETCH:	Wilson North
DEPTH (FT) VOC NO. DEPTH	STRATA SAN	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- 0-4' - brown silte grading de - orangish be well sorted No Waste - Multi-rae 1	y sandy loam won ward to woon sand, medi Little gravel.	· · · · · · · · · · · · · · · · · · ·

			TE	ST PIT FIE	LD	LOG		PAGE 1 OF 1	
	PAR	SONS		CLIENT:		TEST PIT NO.:	14 TP2	ارا	
PROJECT:	FT	MM	011			JOB NUMBER:	748816		
LOCATION	i: La	ndfill	M4			GROUND ELEV:			
						A CONTRACTOR OF THE PROPERTY O	R.M9)0	mald	
TEST PIT DAT	WIDTH	DEPTH	E	KCAVATION METHOD		CONTRACTOR:	MUL	1 17 11 10	
lo!	1921	41		cavator		START DATE:  COMPLETION DATE:	081915	1340	
GROUNDWAT	ER DATA		74444 30 /4	.cv. viii (V		CHECKED BY:			
DATE / TIM	IE .	4	1						
DEPTH TO	WATER	1 1/1	71			LOCATION SKETCH:		1 1	
MONITORING	and Artist							1	
Multi-Y		COH, S	BACKGROUND	081915/072			M W	oilson   North	
plus		LIOXY	passed	1 0011131010			Ц	)	
REMARKS:									
		<del></del>				NTS		T	
	S	AMPLE	STRATA	SA	AMPLE DI	ESCRIPTION		EXCAVATION	
DEPTH (FT)	VOC NO.	DEPTH						E - Easy	
00,530,000,000,000								M - Moderate	
								D - Difficult	$\dashv$
			-0	-1.5' brown silty dry	1.00	104.1	0		-
-				prown sing	10 WM	, some gra	vel,		1
2									]
			1000	5-2'					1
3			+	SAA, Some	vast	e-ash,			4
4			-						$\dashv$
			+2	1-4',			la de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		1
5				1-4', orange sa Sl. morst, w	nd, 1	ned grained	1		1
		1	L.	Al. moist u	rell's	oited	16		1
6		1	-						4
7			- m	rulti-rae rea	dina	: 4			$\dashv$
			+ '	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	-0			1
8			Ι.		•				]
			- 7	Stake had h	seen	run over (	a ,		_
9			$+\mu$	us location. F	Pitpl	acement 1	pased		
10			F ',	~ ` ():	,	1TD12.			$\forall$
10		1	+ 0	nmap, in li	ne u	, 1 1122			1
11									
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13			-						+
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14									
									_
15			-						1

	TES	T PIT FIELD	LOG		PAGE 1 OF 1	
PARSO	ONS	CLIENT:	TEST PIT NO.:	M4 TP	22	
PROJECT: FTM	um .		JOB NUMBER:	748810	)	
	afill M4		GROUND ELEV:			_
			INSPECTOR:	R.MyDon	nald	
TEST PIT DATA			CONTRACTOR:	ANT	1005	
ENGTH WIDTH		Cavation METHOD	START DATE: COMPLETION DATE:	081915	1335	_
GROUNDWATER DATA	4 Million	(AUN IDI	CHECKED BY:	001115		-
DATE / TIME	N110	7				_
DEPTH TO WATER	NIA		LOCATION SKETCH:		1	
MONITORING DATA			1	. \		
INSTRUMENT DETEC	T T	TIME/DATE	1	wi	Ison	
Multi-Rae VOCICE	DXU passed	081915/0720			North	
REMARKS: Moved Di		M & Stake due to	ĺ			
19 trees + Ele	ectrical line	W. of Stake due to	NTS			
SAMI	PLE STRATA	SAMPLE I	DESCRIPTION		EXCAVATION	
DEPTH (FT) VOC NO.	DENTH.				EFFORT E - Easy	
DEPTH (FT) VOC NO.	DEPTH				M - Moderate	
					D - Difficult	
	- 0	-4'				-
1	1 +	ly our eilte 6	20000 450	00000		$\dashv$
2		lacce in the	own, son	e grave,		+
		brown silty l tree roots Some pieces of C				
3	1 4	Some pieces of	concrete in	top 18"		
		"		1		4
4———	1 +					$\dashv$
5		nulti-rae read	ing: 0			$\forall$
						٦
6						]
						-
7	1 +					-
8 -						$\dashv$
						7
9						]
						4
10	1 +					+
11	-					+
"	1 +					7
12						
	T			1		
13	1 +					4
,,	-					+
14	+					+
15						

Γ	TEST PIT FIELI	DLOG	PAGE 1 OF
PARSONS	CLIENT:		1.
PROJECT: FTM M LOCATION: Tandy		JOB NUMBER: 7499   GROUND ELEV: INSPECTOR: P. M90	D
TEST PIT DATA  LENGTH WIDTH DEPTH  5.5' 19" 4'  GROUNDWATER DATA  DATE/TIME	EXCAVATION METHOD  mini-excavator	CONTRACTOR: AWT  START DATE: D819151  COMPLETION DATE: 091915  CHECKED BY:	
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  MULTI-VAR VOC CO HAS  DIVA  REMARKS: 31 W 1) W	BACKGROUND TIME/DATE  Cal. 08/9/5/072  PASSED 4TP23	LOCATION SKETCH:  N. Drive  TP2  MWO 6  NTS	3 North
DEPTH (FT) VOC NO. DEPTH	STRATA SAMPI	E DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- 2'- 14	m, dry, little gravel gravel, well counded, ilty sand, Co herive, ing: +	

		TE	ST PIT FIEL	LD LOG	PAGE 1 OF
PAI	RSONS		CLIENT:	TEST PIT NO.: M4T	P25
PROJECT:	TMM			JOB NUMBER: 7488	10
LOCATION:	and fil	1 M4		GROUND ELEV:	
TEST PIT DATA				CONTRACTOR: AND	)onald
LENGTH WIDTH	DEPTH	EX	CAVATION METHOD		5/13/2
10' 18"	4'		xcavator	COMPLETION DATE: 023115	5/101-
GROUNDWATER DATA				CHECKED BY:	
DATE / TIME	1 N/	1	7/		
DEPTH TO WATER MONITORING DATA	1 1 1/2			LOCATION SKETCH:	1
	DETECTOR	BACKGROUND	TIME/DATE	oMW45	
Multi-Rae Voi	C/CO/HS	Cal. Dasse		0 0	North
Plus L	HOXY	I		TP1 TP25 °SG	1
REMARKS:	1			NTS	
	SAMPLE	STRATA	SAM	IPLE DESCRIPTION	EXCAVATION
					EFFORT
DEPTH (FT) VOC NO.	DEPTH				E - Easy
					M - Moderate D - Difficult
		L 1.	-0.8'		
1				1 0	
		- k	HOWN SIlty, SO	endy loam, dry,	-
2		+ ,	Loot some	endy loam, dry,	1 +
3		- '	50,0	U	1 +
		1. ().	8-71		
4			Manage liller	sand, med-fine,	-
5		-	orange sirry	sana neor The	1 -
<del></del>		+ 1	vell sorted		1 1
6					
		-2'-	-4'		1 ]
7		+-	1+ brown & Hy	, sand, little gravel	1 -
8		F /	12 / m a 00 a	and I tile Dittle	-   -
<u> </u>		+ +	en small pr	eces of tile, little	
9		g	sh		
		-			1 -
10		+11	)=4'bgs		1 -
11					1 -
		$\pm m$	neti-vae mad	ling = 0	
12				0	1 ]
12		-			1 -
13		+			-
14		F			1 1
		T			
15		+			

				7	FEST PIT FIE	LD I	LOG	PAGE 1 OF
	ı	PAR	SONS		CLIENT:		TEST PIT NO.: MATP Z	26
PROJECT	:	FT	MM				JOB NUMBER: 7488/	
LOCATIO	N:	10	and fil	1 M4			GROUND ELEV:	
TECT PET DA	m.							oreld
LENGTH	WIE	тн	DEPTH	Ι	EXCAVATION METHOD		CONTRACTOR: AUT  START DATE: 083 [15]	1301
101	18		4'	min	i-excavator		COMPLETION DATE: 083115	1021
GROUNDWA	TER DA	ГА		de seminore differ de la classica	A A A A A A A A A A A A A A A A A A A		CHECKED BY:	
DATE / TI	ME		XII	1	111			
DEPTH TO	WATER		14/	1	X V V	I	LOCATION SKETCH:	1
MONITORING								
Multi-R			ICO/H <sub>2</sub> S	Call L				North
Plus			UDXU	cac.	1013/018	0	TPZ6 &	North
REMARKS:			gong				TP4 IFZ &	
							NTS (	<del></del>
	1 +	S	AMPLE	STRATA	SA	MPLE DE	SCRIPTION	EXCAVATION
DEPTH (FT)	voc	NO.	DEPTH					EFFORT E - Easy
DEPTH (FT)	100	NO.	DEFIN					M - Moderate
								D - Difficult
		1		-	-0-1'			-
1	1			+	- 1		0. 0	-
2	1	- 1		ŀ	- brown selfy	sa	ndy loan,	-
-		- 1			brown selfy		0	-
3					-1'-4'			1
					- h		1	_
4				-	- PROPERTY	san	d, some gravel,	-
5				+	- med, hand	l (di	d, some gravel, ifficalt to advance	-
°+				+	bucket thro	righ)	)	-
6			1		-	0		-
					-			
7				+	-TD=411			_
				+	TD=4'bgs			_
8				+	multi-rae les	ad:	- h	-
9		1		F	111 100 /00	raci i	ng=0	-
							0	
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15				+			1	_

	TES	ST PIT FIELD	LOG	TAGE T OF
PARS	ONS	CLIENT:	TEST PIT NO.: MATP2	7
	MM ndfill M4		JOB NUMBER: 74881 C GROUND ELEV: INSPECTOR: RAUGO	nald
LENGTH WIDTH  5' 18"  GROUNDWATER DATA  DATE/TIME	-	CAVATION METHOD  (XCAVATO)	CONTRACTOR: AUCTORIO START DATE: DE 3115 COMPLETION DATE: DE 3115 CHECKED BY:	1335
77	ECTOR BACKGROUND LOTH S CAL. LOXY PASSES	TIME/DATE 083115   6730	LOCATION SKETCH:  TP 13  TP2  NTS	The North
DEPTH (FT) VOC NO.	MPLE STRATA  DEPTH	SAMPLE D	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		2.5'	U	

			TES	ST PIT FIEI	LD LOG	PAGE 1 OF /
	PAR	SONS		CLIENT:	TEST PIT NO.:	ATP28
PROJECT: LOCATION	ET La	MM ndfil	114			48810 MDonald
TEST PIT DAT	ΓA				CONTRACTOR:	WT.
LENGTH	WIDTH	DEPTH	EXC	CAVATION METHOD	START DATE: 08	315 1400
6'	20"	3'	mini-ex	quato	COMPLETION DATE: U	3115
GROUNDWAT	TER DATA	,			CHECKED BY:	
DATE / TIM		11	4	7/		
DEPTH TO		101			LOCATION SKETCH:	P16
MONITORING INSTRUMEN		TECTOR	BACKGROUND	TIME/DATE		911
Multi-A	Zae Voc	CO HS	eal. passed	083115/079	2 3	North
REMARKS:	, , , ,	Juny			3	
	S	AMPLE	STRATA	SAI	MPLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			0	-0.5'		
1					1	
			_ ;	7/4 gravel, 11	nanufactured	
2				5'-3'		1 4
			-			
3			+ /	brownsiltas	and loam, so	me -
4			- 4	manel dale	sandy Loam, As.	-
*			+ 7	julia, and		1 +
5			-	//		
			+@	2		
6				oncieté. Ca	unot advance	
			L K	oucket		1 1
7			+			
			-	N=31604		1 -
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	1 1		+111	WITT- Val Mad	ling=0	1 1
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		1	T			
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			-			_
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12			-			
13			+			-
14						
			T			]
15			4			

			TI	EST PIT FIF	ELD	LOG	PAGE 1 OF /
	PAF	ISONS		CLIENT:		TEST PIT NO.: M4TP	29
PROJECT:	F	ПИМ				JOB NUMBER: 7498	10
LOCATION	N: 20	undfill	1M4			GROUND ELEV:	
						INSPECTOR: R.M.93	mald
TEST PIT DA	T	Laborat	г	TVO A VA TION A PETHOD		CONTRACTOR: AWI	11121
LENGTH	WIDTH	DEPTH	made	Mini excavation	97	START DATE: <u>083(15</u> COMPLETION DATE: ()63(15	1434
GROUNDWA'			1 / C. Little Grand	VIII SOMEWICO		CHECKED BY:	
DATE / TIM	ME	NI/	1	1			
DEPTH TO	WATER	NI	#/		1/	LOCATION SKETCH:	<b>†</b>
MONITORING		- Andrews				1 7822	
Multi-1		CICO H2S	Cel. Das	1/ 1/2	34	3 11029	 North
Plu		LOXY	Cec. Dus	na 000110101	00	3	North
REMARKS:						OTPIZ NTS	
					CAMPLED		ENGLIVATION
		SAMPLE	STRATA	-	SAMPLE D	ESCRIPTION	EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate
				2. 21			D - Difficult
1				0-2'	,	, .	
			T	brown All	ty sa	ndy loam sand w/depth,	
2			+	Waravel i	vec.	10 Mildenth	-
, —			-	1 on to me		social repende	-
3			+ "	corzone			-
4							_
				2-4'	, ,		
5			+	SAA, W/Wa	stei	ncl. concrete, burned wood	_
		1 1	F	buck, coal	ast	burned wood	-
6							
7			1-6	24 - Carro	tadi	vance bucket-	1 7
				g-piece of			
8			1	01			
			F	18			1 +
9——			+7	D=4'bgs			-
10							
			T	nulti-ral,	read	ing =	1 ]
11				11000		$\Lambda$	1 -
,,			-			O	1 -
12			+				1 -
13			F				1 1
14			Ţ				]
			L				-
15							-

,	<b>FEST PIT FIEL</b>	D LOG	PAGE 1 OF
SONS	CLIENT:	TEST PIT NO.: MATP	30
MM		JOB NUMBER: 7499	510
	l .	GROUND ELEV:	,
		INSPECTOR: R.MY	onald
		CONTRACTOR: AWY	
DEPTH	EXCAVATION METHOD	START DATE: 0931	15/1448
4 mu	ac -excavaso)		5'
A 1   1/4 ·		CHECKED BY:	
NIA		LOCATION SKETCH:	A
		10 TP12	Ţ
TECTOR BACKGR		· ·	
	assed 083(15/0730	1 \$ 1 TP30	North
40x41		3	
		O TPID NTS	
AMPLE STRATA	SAM	PLE DESCRIPTION	EXCAVATION
			EFFORT
DEPTH			E - Easy
			M - Moderate D - Difficult
	biown silty root zone, Is  0.8-1'  orangish be med fine  1'-4' waste encl metal, coal,	concrete, misc. burned wood,	
	DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH	DEPTH EXCAVATION METHOD  A MARKÍ - EXCAVATION METHOD  A MARKÍ - EXCAVATION METHOD  TECTOR BACKGROUND TIME/DATE  CO H Cal passed 083(15/0736  LOXY  AMPLE STRATA SAM  DEPTH  - 0-0.8' - brown silty - coot zone, Is - orangish but med fine  1'-4' - waste encl - metal, coal,  TD = 4' bygs	DEPTH EXCAVATION METHOD START DATE: 0931  CONTRACTOR: AWY CONTRACTOR: AWY CONTRACTOR: AWY CONTRACTOR: AWY COMPLETION DATE: 0931  CHECKED BY:  LOCATION SKETCH:  1° TP12  TP30  SAMPLE STRATA  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  DEPTH  JOB NUMBER: 7462  GROUND ELEV: INSPECTOR: AWY COMPLETION DATE: 0931  COMPLETION DATE: 0931  CHECKED BY:  LOCATION SKETCH:  1° TP12  TP30  JOB NUMBER: 7462  GROUND ELEV: INSPECTOR: AWY COMPLETION DATE: 0931  CHECKED BY:  LOCATION SKETCH:  1° TP12  TP30  JOB NUMBER: AWY COMPLETION  THE DATE: 0931  TP30  JOB NUMBER: AWY CONTRACTOR:  AWY COMPLETION DATE: 0931  TP30  TP10  NTS  MAPLE STRATA  SAMPLE DESCRIPTION  DEPTH  DEPT

	TEST PIT FIEL	LD LOG	PAGE 1 OF
PARSONS	CLIENT:	TEST PIT NO.: MATP	31
PROJECT: FTMM LOCATION: Landfil	1 M4	JOB NUMBER: 74881 GROUND ELEV:	,
TEST PIT DATA  LENGTH WIDTH DEPTH  Letter Le	excavation method mini-excavator	CONTRACTOR: AWT	15/1/32
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  Multi-Rae Voc/co H <sub>2</sub> S  Plus LET/OXY  REMARKS:	BACKGROUND TIME/DATE  Cal. passed 090215/0720	LOCATION SKETCH:  TP 17  40'  L	North
DEPTH (FT) VOC NO. DEPTH	STRATA SAM	IPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- 1'-2' - Lt. orangish. b - medfine		

			T	EST PIT I	FIELD	LOG	PAGE 1 OF
	PAF	SONS		CLIENT:		TEST PIT NO.: 14	-TP32
PROJECT	F	TMM				JOB NUMBER: 74881	
LOCATIO	N: LO	indfi	11 M4			GROUND ELEV:	
						7	onald
TEST PIT DA	T	T DEPEN	T	EVOLUL TION VETU	an.	CONTRACTOR: AWT	11144
LENGTH	WIDTH	DEPTH 2	mini	excavation metho	JD	START DATE: 090215 COMPLETION DATE: 090215	1144
GROUNDWA	1.0		1 11/11/11/11/11	OLCAVANO		CHECKED BY:	
DATE/TI	ME	1 11	4	11 1	~ /		
DEPTH TO	WATER	11/1/	4 /	IV L		LOCATION SKETCH:	<b>↑</b>
MONITORING	G DATA			- Dall Sulvin Sa		. 7721	
INSTRUME		ETECTOR	BACKGROU			•TP3/	1
Multi-1		100/H2S 110xu	Cal. pas	sed 090215/	0+20		North
REMARKS:	110	yoxy					
						NTS Water lin	-
		SAMPLE	STRATA		SAMPLE D	DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy M - Moderate
							D - Difficult
				0-2'			_
1			+			× *	-
2			<b> </b>	brown si	Ity so	end w/ gravel	-
-			+	dersease	d Di mu	010	-
3			Γ	de	Son	a down ward	
			T	acy, si	nace pr	end w/ gravel, el downward eces of concrete	
4			+	(< ld dia.		$\mathcal{O}$	
			-				-
5			+	TD=2'bgs			-
6			<u> </u>	· 12 Z Ry			
7		1	+	multi-rau	e read in	0-10	
		1	-			7-0	1 -1
8			+			O	1 -1
9		i	-				1 1
10		- 1					
			L				
11			+				-
12		1	-				-
"-	1 1	- 1	+				
13							
			T				]
14							
			-				-
15			-				1 4

			TES	ST PIT FIEI	LD LOG		PAGE 1 OF
	PAF	SONS		CLIENT:	TEST PIT NO.:	M25	U47P33
PROJECT:	FI	MM			JOB NUMBER:	748810	)
LOCATION:			ill M4		GROUND ELEV:		
					INSPECTOR:	R.MYDO	nald
TEST PIT DATA		T	T		CONTRACTOR:	AWT	11
LENGTH 6	WIDTH	DEPTH 2'	minisex	CAVATION METHOD	START DATE: COMPLETION DAT	090215 E: 090215	1155
GROUNDWATE		1	Million	2002(8)	CHECKED BY:	090215	
DATE/TIME		\ \\ \\ \/ I	1.				
DEPTH TO WA	ATER	1 1/1.	7./	UV	LOCATION SKETCH	ł:	<b>↑</b>
MONITORING D.	ATA						
INSTRUMENT		ETECTOR	BACKGROUND	TIME/DATE		3	1
Multi-Ra Plus		10x4	Cal. Dassed	090215/0720		7-33(	North
REMARKS:	1 00	young			<b>-</b>	33/	TP21
					NT	Hist. TPILe	
	S	SAMPLE	STRATA	SAM	IPLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT) V	OC NO.	DEPTH					E - Easy M - Moderate
							D - Difficult
			- 0	-0.5' brown silt I gravel, dr			_
1			+ .	Liown silt	y sandy. 1	dam	1 -
2				Langual de	0 2100 0 11	nto	-
			+ ~	guiller, ar	y, grass su	,,,	-
3			$\perp$		U		1 ]
			L 0.	5-2'			_
4			+	waste - 100 a	ete (>1'dia)	)	-
5			- "	etal sine (14	ativa) ash	1000	1 -
-			+ "	waste-conc retalpipe (ru eramictile, r	sing), asn,	cooci,	
6		1		elamicTile, 1	vere, buck.	Metal	
		1	_ F	dry	es: n/" dia	i n2"dia	
7		1	+ 4	dry	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	; 3000.	-
8	1 1		-	. 0	~		-
		- 1	+				-
9				)= 2'bgs			
			<u></u>	0			
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11			-			2	-
12							
			T				
13		1					_
,			-				-
14			+				-
15							

1

	TE	ST PIT FIEL	D LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: M4T/	034
PROJECT: FT	74 M		JOB NUMBER: 749	
LOCATION: Lay	nd Fill M4		GROUND ELEV:	0,0
	V - V - V - V - V - V - V - V - V - V -		INSPECTOR: R.M.	Donald
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH		CAVATION METHOD		15/12/2
5' 2'	3' Mini-e	xcavator	COMPLETION DATE: 09021	5'
GROUNDWATER DATA		7	CHECKED BY:	
DATE / TIME DEPTH TO WATER	NAX	1/1/	LOCATION SKETCH:	
MONITORING DATA			2005	1
	TECTOR BACKGROUND	TIME/DATE	-TP29 1560.	TP32
Multi-Rae VOC	RO/H25 Cal. DASSED	090215/0720	72 S 127	North
	ybxy I	1		
REMARKS:			NTS TP34	
SA	AMPLE STRATA	SAMP	PLE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
				M - Moderate D - Difficult
1		gravel for jogg Candscape fab	ing/pedestrian pat inc @ 1'  and w/ waste- ash, lg. pieces of "dia.)  ling = 6.	_

	AND AND AND AND AND AND AND AND AND AND	S. character of the control of the c	,	TEST PIT FIE	LD I	LOG	PAGE 1 OF	
	PAR	SONS		CLIENT:		TEST PIT NO.: M47	P35	
PROJECT:		пим				JOB NUMBER: 748	810	
LOCATION:	la	ndfill	M4			GROUND ELEV:	~ 1	
TEST PIT DATA						NSPECTOR: RIM AINT	Donald	
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD		71001	215/1223	
51	18"	21	min	i-excavator	c	COMPLETION DATE: 0902		
GROUNDWATE				Ta a a		CHECKED BY:		
DATE / TIME		I N/	A	XIAA		OCATION SKETCH:		
MONITORING D		1				• S 6	,	
INSTRUMENT		ETECTOR	BACKGR	OUND TIME/DATE		32'		
Multi-Ra	e Voc	co/H2S	cal. Do	ssed 090215/0720		$\sqrt{-2l}$	5'- North	1
Plus	LE	zloxy				-27 1P35	H. 14	
REMARKS:		U				#- 13 NTS		
	s	AMPLE	STRATA	SAM	MPLE DES	SCRIPTION	EXCAVATION	
							EFFORT	
DEPTH (FT)	VOC NO.	DEPTH					E - Easy M - Moderate	
							D - Difficult	
				-0-2'				_
			-			÷		_
2				- brown silte	y, sa	indy loam		-
				- Wigravel. R	00 t 3	one (grass)		
3			4	- top 8" Was	te &	selow the root		_
4			}	- zone, inclu	dina	la (>10" dia	\	_
·——			7	Dieces of co	nos	to all	-)	-
5			_	brown silter  wlgravel. Ro  top 8" Was  zone, inclue  pieces of con  lg piece of con  cannot adv		coas,		
				- 19 Piece of	cone	crete@ 2'bgs,		_
6			-	- Cannot adv	ano	e bucket furth		+
7						Turk	4	٦
			7					
8			+	-TD = 2' bgs				-
9			上	multi-rae rea	di			
10			-	· macrima such	042	9-0	1 %	-
~			1			,	-	1
11			+					-
12			+	•		*		+
							×	
13			+					-
14								
15								-
15			-					-

		TEST PIT FIEL	D LOG	PAGE 1 OF
PAR	RSONS	CLIENT:	TEST PIT NO.: MATPS	36
	MM ndfill M4		JOB NUMBER: 74881  GROUND ELEV: INSPECTOR: R.M.	
TEST PIT DATA  LENGTH WIDTH  (l' /6"  GROUNDWATER DATA  DATE/TIME	DEPTH 3' m	excavation method ini-excavato	CONTRACTOR: AWT START DATE: 090215 COMPLETION DATE: / 90215 CHECKED BY:	1244
Multi-Rae Voc		GROUND TIME/DATE  PASSED 090215/0720	LOCATION SKETCH:  1P/0 01 TP36  NTS	ł. 13 North
DEPTH (FT) VOC NO.	SAMPLE STRAT	A SAMP	LE DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1		- 1.5'-3'	sandy loam is me top! Dry te, brick, ash, con	l,

			TES	ST PIT FIE	LD LOG	PAGE 1 OF 1
	PAR	SONS		CLIENT:	TEST PIT NO.:	U4TP37
PROJECT: LOCATION:		MM ndfill	M4		GROUND ELEV: INSPECTOR:	748810 2.149) on ald
TEST PIT DATA	4					TWT,
LENGTH	WIDTH	DEPTH		CAVATION METHOD		90215   1257
0.5'	L	3'	minise,	xcavator	COMPLETION DATE: 0	10205
GROUNDWATE			. 10	1 11 1	CHECKED BY:	
DATE / TIME		<del>- \ //</del>	AM	A///A	T OO LEION SVETTON	T
DEPTH TO W		1 / / / /	7710		LOCATION SKETCH:	4
MONITORING I		TECTOR	DACKCROUND	TIME/DATE	26.51	100
Multi-Ra		TECTOR CO/HOS	Cal. Dassed	090215/0720		
Plus		=210X4	cac. pasoci	090215/072	- 2	Pedestrian
REMARKS:	14	-40kg1			- 3 57 TP 9	lest
icemado.					NTS	De
	SA	AMPLE	STRATA	SA	MPLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
			ľ			M - Moderate
						D - Difficult
			F 0-	0.5'	, ,	1 4
\ \ \ <del></del>			+ k	nown silty.	, sandy loam, o	stry,
2		1	1	one 0	0	0'   -
		1	+ "			-
3				- 1 - 1		
	1 1			5-1.51		, , ]
4				an to lt. bu	own silty sand	
			$\top$	ned-fine we	own silty sand	7
5				, , ,		
						]
6		1		-3'		
			_	waste inc	l. concrete, aspi	ialt,
7			- c	onl, ash	, - /	′   _
_			_			
8			+ @	3'- la. Dies	ce of concrete, a	20 10 10 2
			-	1	, 00 11	-
9———			+a	dvance bu	cket tuither	
10			<b>-</b>			'-
10			+ 17	=31 bgs		-
11			_	( )	/ !	1 -
"-		1	+ mi	ulti-ral rea	rding: 6	.   -
12			-		0	-
			+		V	
13						
14						
15						

		TEST PIT FIE	LD LOG	PAGE 1 OF
PAF	SONS	CLIENT:	TEST PIT NO.: M4	TP30
	TMM ndfill M4		GROUND ELEV: INSPECTOR: 2. N	3810 14) on ald
	ETECTOR BACKGR		CONTRACTOR: A WT START DATE: 0903 COMPLETION DATE: CHECKED BY: LOCATION SKETCH:	215 / 1313
	closy cal.p	assed 090215/072	TP38\\	TP/8  "MW North  ### OF
DEPTH (FT) VOC NO.	SAMPLE STRATA  DEPTH	SAI	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- dry - 1.5'-2' - SAA, wasti i - Slag, broken - Q2'-lg. Piece	ty sand is grave vass roots top le", nel coal, concrete, aglass le of concrete-can chet faither.	,

1	APPENDIX D
2	FTMM-05: LANDFILL BOUNDARY REFINEMENT AND
3	METHANE GAS SURVEY RESULTS

# APPENDIX D: FTMM-05 Landfill Boundary Refinement and Methane Gas Survey Results

#### TABLE OF CONTENTS

1.0	LANDFILL BOUNDARY REFINEMENT SUMMARY	D-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	D-1
3.0	REFERENCES	D-2

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Table No.	<u>Title</u>
D1	Landfill Boundary Refinement Summary
D2	Methane Gas Survey Results

#### LIST OF FIGURES

Figure No.	<u>Title</u>
D1	Landfill Boundary Refinement and Methane Gas Survey Results

#### LIST OF ATTACHMENTS

<u>Attachment</u>	<u>Title</u>
D-A	Test Pit Logs

#### 1.0 LANDFILL BOUNDARY REFINEMENT SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries are discussed in further detail in the Remedial Investigation Report for FTMM-05 (Parsons, 2015). These changes are reflected on **Figure D1**. In addition, the RI report identified data gaps in the landfill boundaries, specifically along Mill Creek and at test pit 5 to be addressed during the landfill boundary refinement field activities. Subsequent to the preparation of the RI Report for FTMM-05, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. One historical test pit (8) did not appear did not appear to meet the criteria to be considered landfill solid waste. The designation of these historical test pits was modified on **Figure D1** to indicate landfill solid waste was not present.

Test pits during the landfill boundary refinement were initially advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report (Parsons, 2015). To form a more comprehensive view of the landfill, additional test pits were performed in the interior of the landfill since there was limited test pit data in this area. Test pits were advanced at 19 locations at FTMM-05 as part of the landfill refinement activities on August 21, 2015. Historical (2010) and 2015 test pit locations are shown in **Figure D1**.

Logs for the test pits excavated in 2015 are provided in **Attachment D-A**. A summary of the test pit observations, depth of waste, and whether the location meets the criteria for being part of the delineated landfill is presented in **Table D1**.

Observations of the 2015 test pits along the western landfill boundary of FTMM-05 and the eastern bank of Parkers Creeks (M5TP1 and M5TP2) contained miscellaneous singular pieces of debris and/or scattered debris that was not contiguous. These test pits were categorized as having debris of *de minimus* quantity and did not meet the criteria to be considered as part of the delineated landfill; however, one of the test pits along the eastern bank of Mill Creek contained landfill waste (M5TP3). The 2015 test pits performed along the eastern and southern perimeter contained scattered debris that is not contiguous (M5TP11) or did not contain solid waste (M5TP8, M5TP9, M5TP12, and M5TP13). The landfill boundaries were revised and pulled in away from the roads on the eastern and southern sides of the landfill. The 2015 test pits on the interior of the landfill contained ash, coal, lumber, brick, plastic, glass, and metal; the thickness and quantity observed in the interior test pits was indicative of landfill solid waste.

**Figure D1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

#### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of seven (7)) landfill gas readings (including one QA/QC sample) were measured at six soil gas locations at FTMM-05 as part of the methane gas survey. Sampling was conducted on July 28, 2015. Methane was not detected at the six sampling locations. At two locations (M5SG4 and M5SG6), the soil gas probe could not be driven to 3.5 feet bgs because the water table occurred shallower than this depth. At M5SG4 and M5SG6, the soil gas probe was

driven to a depth above the water table of 3.0 feet bgs and 2.5 feet bgs, respectively. Variations to the depth of sample collection are noted on **Table 2**. The landfill gas readings are summarized in **Table D2**. The soil gas sampling locations are provided in **Figure D1**.

#### 3.0 REFERENCES

Parsons. Remedial Investigation Report for Site FTMM-05, Fort Monmouth, Oceanport, Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and Support Center, Huntsville, Alabama. October 2015.

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

#### **TABLES**

Table D1 Landfill Boundary Refinement Summary

Table D2 Methane Gas Survey Results

## Table D1 Landfill Boundary Refinement Summary Site FTMM-05

#### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M5TP1	N	2	Debris of de minimus quantity; not landfill.
M5TP2	N	3	No solid waste observed; not landfill.
M5TP3	Y	1	Solid waste including ash, broken glass, coal indicative of landfill.
M5TP4	Y	1	Solid waste including ash, coal, lumber, rusty brick indicative of landfill.
M5TP5	Y	1	Solid waste including ash, coal, brick indicative of landfill.
M5TP6	Y	1	Solid waste including brick, large piece of steel, concrete, ash, coal, terracota tile indicative of landfill.
M5TP7	Y	1	Solid waste including ash, coal, burned wood, broken bottle indicative of landfill.
M5TP8	N	3	No solid waste observed; not landfill.
M5TP9	N	3	No solid waste observed; not landfill.
M5TP10	Y	1	Solid waste including some ash, coal, broken glass indicative of landfill.
M5TP11	N	2	Debris of de minimus quantity; not landfill.
M5TP12	N	3	No solid waste observed; not landfill.
M5TP13	N	3	No solid waste observed; not landfill.
M5TP14	Y	1	Solid waste including ash, coal, broken botle, newspaper indicative of landfill.
M5TP15	Y	1	Solid waste including ash, coal indicative of landfill.
M5TP16	Y	1	Solid waste including ash, coal, wire (metal), broken glass, misc. plastic indicative of landfill.
M5TP17	Y	1	Solid waste including ash, coal indicative of landfill.
M5TP18	Y	1	Solid waste including ash, coal, metal, broken glass indicative of landfill.
M5TP19	Y	1	Solid waste including ash indicative of landfill.

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

# Methane Gas Survey Results Site FTMM-05 Table D2

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M5SG1	7/28/2015	0.0	0.0	2.7	18.9	
M5SG2	7/28/2015	0.0	0.0	0.0	22.1	
W5SG3	7/28/2015	0.0	0.0	0.7	20.3	
M5SG4	7/28/2015	0.0	0.0	0.0	20.7	Sampled at 3.0' bgs
M5SG5	7/28/2015	0.0	0.0	0.0	20.9	
M5SG5QA	7/28/2015	0.0	0.0	0.0	21.1	
M5SG6	7/28/2015	0.0	0.0	0.0	21.3	Sampled at 2.5' bgs

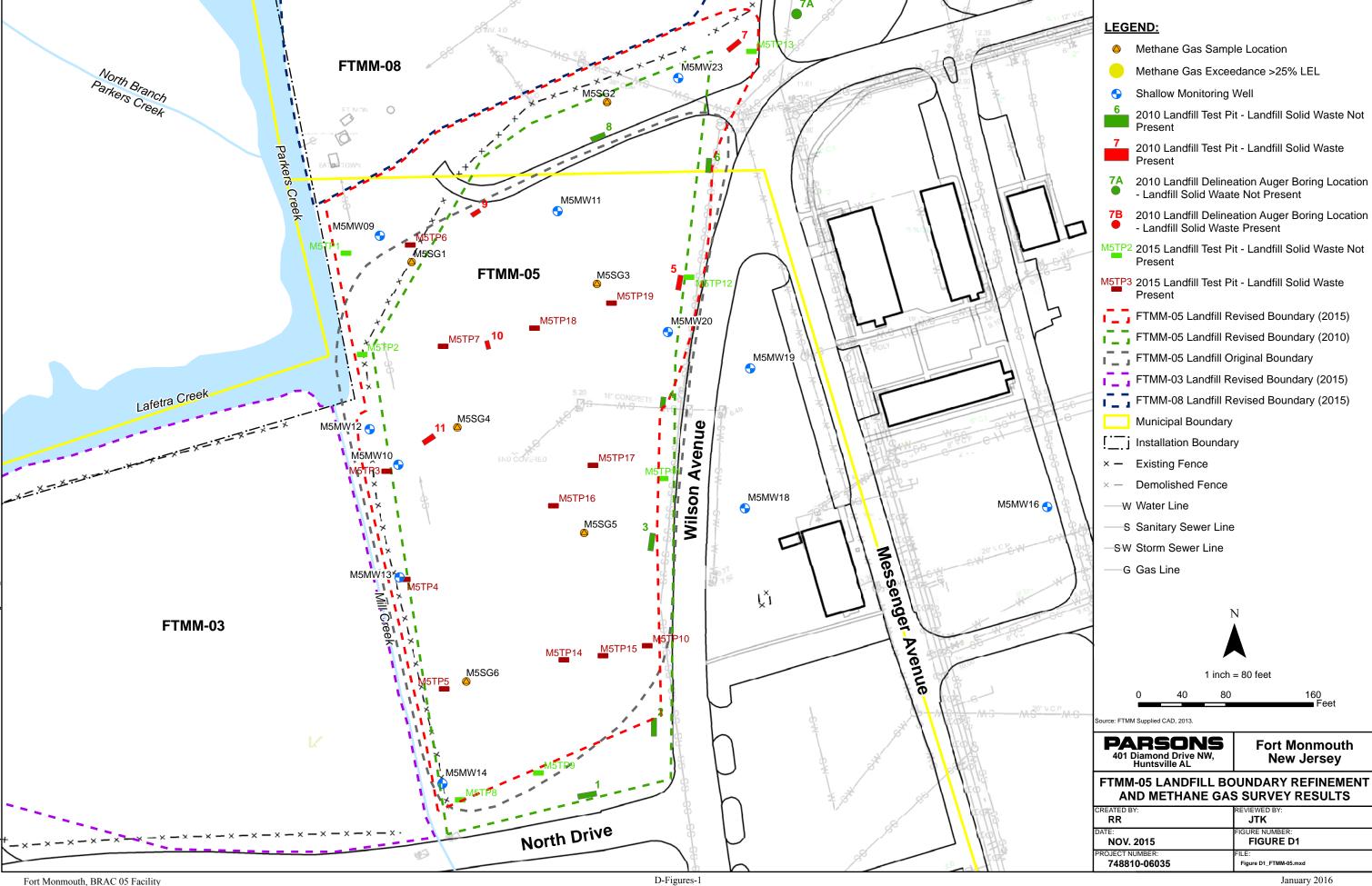
## Notes:

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

#### **FIGURES**

Figure D1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix D Landfill Boundary Refinement and Methane Gas Survery Report for Nine Landfills



#### **ATTACHMENTS**

Attachment D-A Test Pit Logs

		1.00	PAGE 1 OF
	TEST PIT FIELD	LUG	DA COMINA
PARSONS	CLIENT:	TEST PIT NO.: M5TP	1
PROJECT: FTMM LOCATION: Landfi	11 145	JOB NUMBER: 74801 GROUND ELEV: INSPECTOR: R 1140	i 0 on ald
TEST PIT DATA		CONTRACTOR: AUT	37120101
LENGTH WIDTH DEPTH	EXCAVATION METHOD	START DATE: 082115	11112
6' 18" 4'	mini-excavator	COMPLETION DATE: 08-2115	5
GROUNDWATER DATA		CHECKED BY:	
DATE / TIME	14	LOCATION SKETCH:	2
MONITORING DATA	IF V	LOCATION SKEICH:	1
INSTRUMENT DETECTOR  Multi-Rae VOCICO H2S  Plus LEYOXY  REMARKS:	BACKGROUND TIME/DATE  Cal. 082115/0720  passed	Lafetra E	North
	SAMPLE SAMPLE	=NTS	TEVELVATION
SAMPLE	SAMPLE	EDESCRIPTION	EXCAVATION EFFORT
DEPTH (FT) VOC NO. DEPTH			E - Easy
			M - Moderate D - Difficult
1	brown silty?  Interpedded ga  and orange si  afew small  broken bric  ceramic place  TD=4' bgs  multi-valued	sandy loam w/ cay-gleen without.  Hysaid  Pieces of coal,  k, I broken  te  ling=0	

		TES	ST PIT FIELD	LOG	TAGE 1 OF
P	ARSONS		CLIENT:	TEST PIT NO.: MOTP	2
PROJECT:LOCATION:	FTMI			JOB NUMBER: 749 9	
TEST PIT DATA				INSPECTOR: R.M.C. AWT	mald
LENGTH WIDT	31		CAVATION METHOD - excavator	START DATE: 082115 COMPLETION DATE: 082115	1/33
GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	N	IA		CHECKED BY:  LOCATION SKETCH:	<u> </u>
MONITORING DATA INSTRUMENT  MULTI-RAL V  PIUA  REMARKS:	DETECTOR  OCICE H2S  LEGIOXY	BACKGROUND Cal. Passe	TIME/DATE  1 08215 0720	out fact the NTS	North
DEPTH (FT) VOC N	SAMPLE TO. DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			D=3' inlti-rae read this pit is ima	including metal lass, coal, fabric,	

		TES	T PIT FIELD	LOG	/
PAI	RSONS		CLIENT:	TEST PIT NO.: M5	TP2
PROJECT: FI	MM ndfill 14	15		JOB NUMBER: 748 GROUND ELEV:	3810
TEST PIT DATA				INSPECTOR: R.M.	T onuld
LENGTH WIDTH	DEPTH 4	mini-0	avation method (cavato)	START DATE: 002  COMPLETION DATE: 002	115/1104
GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	N/,	A	7	CHECKED BY:  LOCATION SKETCH:	<u></u>
MONITORING DATA INSTRUMENT I MULTI-RAL VOC Plus LE REMARKS:	1 - 1 - 1 - 1 - 1	ACKGROUND al. Dassed	TIME/DATE 082(15/0720	Lafotra Creek	North
DEPTH (FT) VOC NO.	SAMPLE ST DEPTH	TRATA	SAMPLE	DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1		I No		dy loam, little nterbedded ol, roots. 2 pin i'diameter.	ices

			T	EST P	IT FIELD	LOG	PAGE 1 OF
	PAR	SONS		CLIEN	T:	TEST PIT NO.:	7 - X - 9 - ''2 X -
PROJECT:	FI	MM				JOB NUMBER: M517	3
LOCATION	v: Lo	ind fi	11 M5			GROUND ELEV:	
					9. JPV. 17. JP 31.	INSPECTOR: 7499	10
TEST PIT DAT	WIDTH	DEPTH		EVCAVATION	N METHOD	START DATE: 092115	1036
5,5'	2011	31	mini	EXCAVATION		COMPLETION DATE:	11056
GROUNDWAT	TER DATA		7-11711	DA COOV		CHECKED BY:	
DATE / TIM	ME .	1040					
DEPTH TO	WATER	3'				LOCATION SKETCH:	1
MONITORING						1	<u>Z</u>
Multi-	7	ICO/H2S	Cal.		2115/0720		North North
PIW	A	LOXU	passe		2113/0/20	MW 4	eel
REMARKS:		7			×4		(
					0.1107.5	NTS '	1
	S	AMPLE	STRATA		SAMPLE	DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
		100000000000000000000000000000000000000					M - Moderate
				-			D - Difficult
			H	0-0.8	ı	loam, rootzone,	1 -
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'-			-	117-2	bgs		1 -
8				mult	1-ratillad	ing=	
		1	L			O	
9			+				1 -
10			-				1 -
	1 1		+				
11							
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12							-
13			-				-
13			+				
14							-
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15			+				_

			TES	T PIT FI	ELD	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: M5TP	4
PROJECT:	F	TMM				JOB NUMBER: 74881	0
LOCATION	N: 10	indfil	1 M5			GROUND ELEV:	
						INSPECTOR: R.M.D.	mald
TEST PIT DAT		T				CONTRACTOR: AWT	1,,,,,
LENGTH (0)	WIDTH	DEPTH 4	mini exc	CAVATION METHOD		START DATE: 082115 COMPLETION DATE: 082115	1102T
GROUNDWAT			MINITER	NVN (V)		CHECKED BY:	,
DATE / TIN		1029					
DEPTH TO	WATER	3,51				LOCATION SKETCH:	1
MONITORING						\ {	5
INSTRUME		ETECTOR	BACKGROUND	082115 10		3	No. all
multi Re		LOXY	cal.	00015/0	nu	25	North
REMARKS:	100	1029	7			WW B	7
						NTS	(
		SAMPLE	STRATA		SAMPLE D	ESCRIPTION	EXCAVATION
DEPTH (FT)	VOC NO.	DEPTH					EFFORT E - Easy
DEFIN(FI)	VOC NO.	DEFIN					M - Moderate
							D - Difficult
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2				1001	()	Jan Jan G	기 크
				-4'	V		
3			120	2		1	
			<u></u>	orange si	ilty A	and, waste coal, lumber,	-
4			+ 1	including	ash.	coal lumber.	1 -
5			F /	rusty by	ch		1
				J - 00			
6							
			- 71	>=4' bgs			-
7			+ ' "	7 13/2			1 -
8			m	ulti-vae 10	adina	2- B	
				ulti-vae se	nain	1-0	1 1
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ANALYSIN IN	nero antimore) Barriero Dire	ACTION OF THE OWNER.	TE	ST PIT FIEL	D LOG	PAGE 1 OF
	P	ARSONS		CLIENT:	TEST PIT NO.: 115 TO	5
PROJECT:		FTMP	1		JOB NUMBER: 7488	
LOCATION		Landt	ill M5		GROUND ELEV:	
	**				INSPECTOR: R.MY)	mald
TEST PIT DAT	1	7152103 <b>1</b> -7	<b>,</b>		CONTRACTOR: AWT	11.
LENGTH (p'	2.5°			KCAVATION METHOD		1004
GROUNDWAT			WINILAN	xcavator	CHECKED BY:	)
DATE / TIN		1007			CHECKED BY:	
<b>ДЕРТН ТО</b>		41		- 1. H- 1. SHE	LOCATION SKETCH: /	<b>A</b>
MONITORING	DATA		1 - W W-		1 + 2	
INSTRUME	NT	DETECTOR	BACKGROUND	TIME/DATE		
Multi-R	ae V	100 CO H2		082115/07/5	е Ц <u>е</u>	North
plus	)	ELIOXY	Dazzel			
REMARKS:		v /			NTS	
		SAMPLE	STRATA	SAM	PLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC N	O. DEPTH				E - Easy
						M - Moderate
				- 21		D - Difficult
1			1 -0	)-21		-
				brown silt	cloam dams	-
2	1			contron a la	y loam, damp, me lg. (8"+) cobbles	-
				30 ra, 150	me ig (0 +) cobbles	1 =
3			1 12	-4'	J	_
1			F		1	_
4				waste zone	- ash, coal,	=
_			<b> </b>	brick, coa	- ash, coal, use sand	-
5			+			=
6			a	Waterfilling	in hele@4, continues	_
				torise when	pit was backfilled	
7				D-11-1	The bucket the	I
	İ		-	D=4' bgs		_
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15						1

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	PA	RSONS		CLIENT:	TEST PIT NO.:	MSTP	6
PROJECT:	F	TMH	Name of the second		JOB NUMBER:	74991	0
LOCATION	N:	Landt	911 M5		GROUND ELEV:	- 1601	
					INSPECTOR:	R.M.Do	nald
TEST PIT DAT	ТА		100		CONTRACTOR:	AWT	
LENGTH	WIDTH	DEPTH		(CAVATION METHOD	START DATE:	082115	1120
<u>u'</u>	2.5'	4'	mini	expanator	COMPLETION DATE:	082115	
GROUNDWAT		+			CHECKED BY:	P)	
DATE / TIN	SWITCHESKOWSKI, 1900	<del>                                     </del>	HAD		LOCATION SKETCH:		<u> </u>
MONITORING							1
INSTRUME		DETECTOR	BACKGROUND	TIME/DATE	TI TI		
Multi-R	ae Vo	clco/H2S	ral.	082115/07-20	33 [17]	TPLO	North
Plus		ELIOXY	passed				
REMARKS:		,					
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		SAMPLE	STRATA	SAMPLE	E DESCRIPTION		EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
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4				Waste Brick, Concerte, ash	1100	- 1	2-
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6			<u> </u>				-
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	CHONG CONTRACTOR		TE	ST PIT FIE	LD LOG	PAGE 1 OF
	PAI	RSONS		CLIENT:	TEST PIT NO.:	
PROJECT:	. F	TMU			JOB NUMBER: M 5	TP7
LOCATIO		ndfill	M5		GROUND ELEV:	
		19001111	710			1) oneld
TEST PIT DA	TA				CONTRACTOR: AW	
LENGTH	WIDTH	DEPTH	EX	CAVATION METHOD	START DATE: 0821	15
_ (o'	20"	4'	mini-e	xcavator	COMPLETION DATE: 0821	151
GROUNDWA'	TER DATA				CHECKED BY:	
DATE / TI		1	IA			
DEPTH TO		10	M		LOCATION SKETCH:	1
MONITORING		ETECTOR	D LOVODOV D ID	TRESATE		<b></b> .
multi-k		CICOLH <sub>2</sub> S	CAL DASSE	192115/079	1 × 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	North
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REMARKS:	0 1 0	27029			i i	8
					NTS	`(
		SAMPLE	STRATA	SA	AMPLE DESCRIPTION	EXCAVATION
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DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
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			T,	woth This	atter (leaves, twigo),	
2						
			L 0,	5-1'	1 10	
3			-	orange sa	nd, med fine, mois silty sand, waste a h, coal, burned wo	* _
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5			-	j 0-1. 04	e das l'humal	-
-			+	Including as	n, cone, purila wo	01
6			F	sicken bot	14	-   -
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			r	TEST PIT FIELI	DLOG	PAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.: M5	TP8
PROJECT	F	TMM			JOB NUMBER: 749	810
LOCATIO		andf	illM	5	GROUND ELEV:	
					INSPECTOR: R, MC	Donald
TEST PIT DA	TA		,		CONTRACTOR: AWY	
LENGTH	WIDTH		<u> </u>	EXCAVATION METHOD	- A - A - A	15/0956
5.5.	1.5'	4'	min	i-exervator	COMPLETION DATE: 082	151
GROUNDWA		h	11/1	T	CHECKED BY:	
DATE / TII		$+/\vee$	1/4		LOCATION SKETCH:	
MONITORING			11 / 1		- N Dive - E	1 1
INSTRUME		DETECTOR	BACKGR	OUND TIME/DATE		
Malti &		CICO HIS	cal.	082115/07/5	1 1 8	North
Plus		LELLOXU	0055		3 7 5	,
REMARKS:						
				<del> </del>	NTS /	<del></del>
		SAMPLE	STRATA	SAMPL	E DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO	DEPTH				E - Easy
						M - Moderate D - Difficult
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12			+			-
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			1			
14			+			-
15				r i		

				TE	ST PIT FIEL	D LOG	PAGE 1 OF 1
LOCATION:  LAND FILMS  DESTRICTOR:  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE  STATE DATE  DEPTH TO WATER  MONITORNO DATA  DESTRUMENT DETECTOR BACKGROUND TIMEDATE  HULTH-FLO VOC NO. DEPTH  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  BY MANGEMED D. DEPTH OV. DEPTH DEPTH OF PLACE STRIP DATE  LENGTH WITH DATA  DEPTH OF WATER  MONITORNO DATA  BOSTRUMENT DETECTOR BACKGROUND TIMEDATE  HULTH-FLO VOC COHES Cal. 082115/0720  ALM LET CAL DESCRIPTION  EXCAVATION  EFFORT  E-EASY  N. D. D. D. DEPTH  O-1' - GRAVEL FOR PLACE STRATA  FABRIC BALLIE Q' bgg  I - 4' again Silty Sand, med-Fine, well-Sorted  NO Waste  MULTI-VAR MEASURGES  NO Waste  MULTI-VAR MEASURGES  NO Waste  MULTI-VAR MEASURGES  NO Waste		PAR	SONS		CLIENT:	TEST PIT NO.: M5	TP9
REMARKS:  DISPITION  DEPTH OVOC NO. DIPTH  DEPTH OF A LET COMPANION  SAMPLE STATIAN  DATE / TOP DEPTH OVOC NO. DIPTH  DEPTHOFT)  DEPTHOFT)  DEPTHOFT  DEPHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEXAMENT  DEPHOFT  DEPHOFT  DEPTHOFT  DEPTHOFT  DEPTHOFT  DEPHOFT	PROJECT:					JOB NUMBER: 74981	<i>b</i>
TEST PIT DATA  LENTH WIDTH DEPTH EXCAVATION METHOD  5.5   6" 4" MIDITI EXCAVATION METHOD  GROUNDWATER DATA  DATE TIME  DATE TIME  DATE TO WATER  MONITORNO DATA  SERVINEST  DEFINITO WATER  MONITORNO DATA  SERVINEST  DEFINITO WATER  MONITORNO DATA  SERVINEST  DEFINITO WATER  MONITORNO DATA  SERVINEST  SAMPLE DESCRIPTION  EXCAVATION  SEPORT  REPORT  EXCAVATION  SEPORT  REPORT  EXCAVATION  SEPORT  REPORT  EXCAVATION  SEPORT  REPORT  EXCAVATION  SEPORT  REPORT  EXCAVATION  SEPORT  REPORT  For Against for pedestrian path  factor barrier @ 1 bgs  1 - 4' grangle silty sand, med - Giac,  well Sorted  No Waste  Multi-vae reading to  Multi-vae reading to  Multi-vae reading to	LOCATION:	La	nd fil	1M5			22.01
LENOTH WIDTH DEPTH EXCAVATION METHOD START DATE:    5.5   18"   4"   Drin 1-2000   50   50   50   50   50   50   50	TEST PIT DATA	A					oriaca
GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  NORTH  NORTH  NORTH  DEPTH FT) VOC  NO  DEPTH  THE PART OF THE PROPERTY OF THE PR	LENGTH	WIDTH	DEPTH	EX	CAVATION METHOD		5/0742
DATE / TIME  DEPTH TO WATER  MONITORING DATA  RISTRIMENT  PLOY FOR VOC/CO/H/S Cal.  DILLO MY MASKER  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  F. Pay  M. Moderate  D. Dillow  1  Coling Angle Silty Sand, med-Fine,  Well-Sorted  No Waste  Multivae leading at	5.51	18"	41	mini-e	xcavato		5'
DEPTH TO WATER  MONITORING DATA  INSTRIBUTION  DISTRIBUTION  DESCRIPTION  BACKGROUND  TIMEDATE  JULIA  JULI		TOTAL DATE OF THE STREET		Α Ι		CHECKED BY:	
MONITORING DATA  DISTRIBUTION  DEFINITION  DEPTH 1971, VOC NO. DEPTH  DEPTH 1971, VOC NO. DEPTH  DEPTH 1971, VOC NO. DEPTH  DEPTH 1971, VOC NO. DEPTH  DEPTH 2  DEPTH 2  DEPTH 2  DEPTH 3  DEPTH 4  DEPTH 3  DEPH 3  DEPTH 3  DEPTH 3  DEPTH 3  DEPTH 3  DEPTH 3  DEPTH 3  DEPTH	A PRICE AND DESCRIPTION OF A PR	(A) - 240	NI	A	1	LOCATION SKETCH:	
Multi-rae reading:				* ,			Ţ
MUDITION VOC COLOUTS Cal. 0821/5/0720  REMARKS:    N. Drive   N. Drive   N. Moderate	INSTRUMEN	T DE	TECTOR	BACKGROUND	TIME/DATE		l
REMARKS:    DEPTH (FT)   VOC   NO.   DEPTH   STRATA   SAMPLE DESCRIPTION   EXCAVATION   EFFORT   E. Easy   M. Moderate   D. Difficult		e VOC	1 1		082115/0720	J 7 - 3	North
DEPTH (PT) VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E - Easy M - Moderate D - Difficult  1	1		JOXY	passea	/	NAMIN	
DEPTH (FT) VOC NO. DEPTH  DEPTH (FT) VOC NO. DEPTH  - 0-1' - gravel for pedestrian parts fabric barrier @ 1'bgs  - 1'-4' - orange sitty sand, med-Fine, well-sorted  No Naste - Multi-rae reading: ©	REMARKS:					Table Section 25	
DEPTH (FT) VOC NO. DEPTH    Coling of the pedestrian path   Falsaic barrier @ 1 bgs		S	AMPLE	STRATA	SAMP	LE DESCRIPTION	EXCAVATION
M. Moderate D. Difficult  1							Salar Security Companies (Co.)
D-Difficult  1	DEPTH (FT)	VOC NO.	DEPTH				Anna Sana S
3  1'-4' orange sitty sand, med-Fine, well-sorted  No Waste  Multi-rae reading:							The second secon
3  1'-4' orange silty sand, med-Fine, well-sorted  No Waste  Multi-rae leading:	-			- 0-	1' - gravel for	7 pedestrian na th	1=
3  1'-4' orange silty sand, med-Fine, well-sorted  No Waste  Multi-rae leading:	1			2	Fabric barri	er@ I'has	-
No Waste  No Waste  Multi-rae leading:  10  11  12  3  4	2						-
No Waste  No Waste  Multi-rae leading:  10  11  12  3  4				Τ.	-11		/ / /
No Waste  No Waste  Multi rae leading:	3			-	manal silter.	sand med-Fino	_
No Waste  No Waste  Multi rae leading:	4			-	well-soited 1	')	-
No Waste  Multi-rae leading:	7		ŀ	-	0- 0- 0-		-
No Waste  Multi-rae leading:	5			1	\- 1'1 a		
8				- 4.6	7 Dgo		_
8	6			+ N	s hlasto		-
8 Multi-rae leading: 6	7						1 -
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			TES	T PIT FIELD	LOG	TAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: USTP	10
PROJECT:	FT	MM			JOB NUMBER: 7488	10
LOCATION		ndfi	11 M5		GROUND ELEV:	0
					INSPECTOR: R.144	onald
TEST PIT DAT		<u></u>	F1 - 1000		CONTRACTOR: AWT	-162.50
LENGTH 5.5'	18"	DEPTH 4	mini-e	CAVATION METHOD	START DATE: US2115	5/0752
GROUNDWAT	10	1 7	min-so	(Cagaro)	CHECKED BY:	7
DATE / TIM	400	A /	11	7	>	
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			t,	some ash, coal	Coarse, Well-grad, brokenglass,	
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			F n.	5'-4'		-
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6	1 1			rorange san	ed, med, well soit	-
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		TEST PIT FIEL	D LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MST	>
PROJECT: FI	MM nd fill b	15	JOB NUMBER: 7488 GROUND ELEV:	
			The state of the s	onald
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 092115	5 0805
Le' 18"	41	mini-excavator	COMPLETION DATE: 08211	5'
GROUNDWATER DATA DATE / TIME	4114		CHECKED BY:	
DEPTH TO WATER	NA	11///	LOCATION SKETCH:	<b>A</b>
MONITORING DATA				Ī
INSTRUMENT DE		KGROUND TIME/DATE	TPIL .	
Multi-Rae Voc	10/H25 C	Q. passe 082115 0715		North
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REMARKS:	' /		NTS Light	pol 2
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			TES	ST PIT FII	ELD		FAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: USTPI	2
PROJECT:	F	ПЧИ		2		JOB NUMBER: 748817	2
LOCATION			11 M5	***************************************	78 6 7-10	GROUND ELEV:	
						INSPECTOR: R.MUDO	nald
TEST PIT DAT	TA					CONTRACTOR: AWT	
LENGTH	WIDTH	DEPTH		CAVATION METHOD		START DATE: 082115	0819
5.5'	18"	41	mini-exc	cavator		COMPLETION DATE: 0821151	
GROUNDWAT DATE / TIM				77		CHECKED BY:	
DEPTH TO	and the second second	1 M	A			LOCATION SKETCH:	
MONITORING						· Lp4	
INSTRUME	ENT DI	ETECTOR	BACKGROUND	TIME/DATE			
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plus	1	ELIOXY	1	,			
REMARKS:						NTS LP4	
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							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
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1			_ 0-	by non sill	4.0	am, little gravel,	
				provinsin	7 100	am, little gravel,	_
2				rootzon	()	0	_
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PARS	SONS		CLIENT:	TEST PIT NO.:	M5TPI	3
	MU ndfill	1 H5		JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 R.MUDO	
TEST PIT DATA				CONTRACTOR:	AWT	15000
LENGTH WIDTH	DEPTH		CAVATION METHOD	START DATE:	10011-	10832
GROUNDWATER DATA		MIMI-S	xcavato	COMPLETION DAT	E. 002115	
DATE / TIME	110		1	7	-	
DEPTH TO WATER	141	IMY		LOCATION SKETCH	H: Janking	a 1
MONITORING DATA					To the second	neg!
multi-ral valo		Cal. passed	082115 07	777	ROA	North
REMARKS:	OXY			Gravel Rd	-((	
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SA I	MIPLE	SIRAIA	3	AMPLE DESCRIPTION		EFFORT
DEPTH (FT) VOC NO.	DEPTH					E - Easy  M - Moderate D - Difficult
1		3.	8-25			

		TES	T PIT FIELD	LOG		
PARS	SONS		CLIENT:	TEST PIT NO.:	M5 TP	14
	MM ndfill M	5		JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.WYDO	
TEST PIT DATA				CONTRACTOR:	AWT	
LENGTH WIDTH	DEPTH		AVATION METHOD	START DATE:	082115	1300
5.5'   18"	$4^{\prime}$	ninil	x carator	COMPLETION DATE:	082115	
GROUNDWATER DATA DATE / TIME	1304	1		CHECKED BY:	-Variable State of the State of	
DEPTH TO WATER	2.5'			LOCATION SKETCH:		
MONITORING DATA						Ţ
	coltos ca	kground d. gassed	082115 0720	TPS TP	] 14	North * TP   6
SA	MPLE STRA	TA	SAMPLE D	DESCRIPTION		EXCAVATION
						EFFORT
DEPTH (FT) VOC NO.	DEPTH					E - Easy
						M - Moderate D - Difficult
1		1.5 n. a. D. m. G. a.	sons silty s rootzone  1-4!  Ash, coal, be esspaper fro Slight odor, be bore backgrow alti-rae reading Whitedhole s bont 2 min.	colcen bott m 1943. ut no ma and on mu g: D to 2.5' bg	le, dings oti-	

	TES	ST PIT FIELD	LOG	PAGE 1 OF
PARSO	DNS	CLIENT:	TEST PIT NO.: 145 TI	215
	MM ndfill M5		JOB NUMBER: 7488  GROUND ELEV: INSPECTOR: R.M.	1
TEST PIT DATA			CONTRACTOR: ANT	10 11001
LENGTH WIDTH		CAVATION METHOD	START DATE: 082115	
GROUNDWATER DATA	Tr mini-s	acovata	CHECKED BY:	2,
	1313			
DEPTH TO WATER	4'		LOCATION SKETCH:	<b>^</b>
MONITORING DATA				
Multi-Rae Vocic	ECTOR BACKGROUND	092115/0728	TPS TP 1715	TP North
Pius LEL	oxy passed	*	1 4 1712	10
REMARKS:			NTS	
DEPTH (FT) VOC NO.	DEPTH		DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	<del> </del>	brown silty rootzone, das 5'-4' silty sand, i ash, road GW filled in Win I min, D=4' bgs Oti-ral read TP15	Q	

					TES	T PIT	FIELD	LOG		PAGE 1 OF	
	F	AR	SONS			CLIENT:		TEST PIT NO.:	M5TP1	6	
PROJECT:		FT	MM					JOB NUMBER:	748810		
LOCATION	N: _		nel fill	5				GROUND ELEV:			
								INSPECTOR:	R.M.Do	neld	_
TEST PIT DAT			г					CONTRACTOR:	AWT	1000	
LENGTH 5.5'	WID'	Control later	DEPTH 4'	mini		CAVATION METH	OD	START DATE:	082115 E: 082115	1323	
GROUNDWAT	10		7	mini	- UX	Cayaror		COMPLETION DATE CHECKED BY:	E. 002113		
DATE / TIM		**	1	11 1	T		7/	endered by:			_
DEPTH TO	WATER		1	IIA			//	LOCATION SKETC	H:	<b>†</b>	
MONITORING	DATA			1							
INSTRUME			TECTOR	BACKGRO	- 61	TIME/				TOU	
Multi-Ra			celt25	cal. po	issed	082115	0+20	*TP	77211	TP I North	
Plus REMARKS:		CEI	- Oxy						TP 16		
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	-	SA	AMPLE	STRATA			SAMPLE D	DESCRIPTION		EXCAVATION	
										EFFORT	
DEPTH (FT)	voc	NO.	DEPTH							E - Easy  M - Moderate	
										D - Difficult	
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6					- - T	)=4'b	01				]
		- 1		-	. 11.	) - ( D	7				4
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						TOLIA			1. 1		
13				+		TPIQ					4
14				-							+
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15				上							]

		TEST PIT FIEL	D LOG	PAGE 1 OF
PARS	SONS	CLIENT:	TEST PIT NO.: >	
PROJECT: FI	MM ndfill M5	Ó	JOB NUMBER: 757	. 10
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH Mi	excavation method  ni excavator	START DATE: 082115	1333
GROUNDWATER DATA			CHECKED BY:	
DATE / TIME	NIA	7		
DEPTH TO WATER	M		LOCATION SKETCH:	<b>†</b>
MONITORING DATA				
2 1	COHOS Cal.	082115/0720	TP3 TPle	North TPI
SA	AMPLE STRATA	SAM	PLE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
				M - Moderate D - Difficult
1		2'-4' Waste-ash TD=4' bgs multi-rae u	sandy loam. Rootzon  , coal  rading= 6	۷.

TEST PIT FIELD LOG						
	PAI	RSONS		CLIENT:	TEST PIT NO.:	15TP18
PROJECT:	T	TMM			JOB NUMBER:	748810
LOCATION	i: Lo	ind fil	1 M5		GROUND ELEV:	100/0
					INSPECTOR:	2. McDoneld
TEST PIT DAT	A				CONTRACTOR:	twT
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD		82115 1344
5'	18"	41	mini-l	excavator		0921151
GROUNDWAT DATE / TIM		h 1			CHECKED BY:	
DEPTH TO		IN	A		LOCATION SKETCH:	
MONITORING	DATA		1			\$
INSTRUMEN	NT D	ETECTOR	BACKGROUNI			PIS 3 TP North
Multi-Ra	-	CO HS	dal.	082115/07	-20 E	TP North
Plu	s L	210X4	passe	V	167	PIO/S
REMARKS:					TP7 10 NTS	
		SAMPLE	STRATA	SA	MPLE DESCRIPTION	EXCAVATION
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						M - Moderate D - Difficult
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6				wasi - as	n, make, con,	_
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			TE	ST PIT FIEL	D LOG		PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.:	M556	19
PROJECT:	ET	MM			JOB NUMBER:	74881	
LOCATION:	10	indf	ill M5		GROUND ELEV:		
					INSPECTOR:	R. MODO	mald
TEST PIT DATA					CONTRACTOR:	AWT	
LENGTH 0 f	WIDTH	DEPTH 4		CAVATION METHOD	START DATE:	092115	2/
GROUNDWATE		7	Mini-e	xcavator	COMPLETION DATE	E: 000115	1
DATE / TIME		6//	1	7	CHECKED B1.		
DEPTH TO W	VATER	N	A		LOCATION SKETC	H:	<b></b>
MONITORING I	DATA						
INSTRUMENT		TECTOR	BACKGROUND	TIME/DATE	56	3	8
Multi-R		CO H2		082115/072	)		TP12 North
PIWS	LE	TOXY	passed		_	TPIP	
REMARKS:					IN	S	_
	S	AMPLE	STRATA	SAM	PLE DESCRIPTION		EXCAVATION
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DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
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3			F 0,	5- 6- 1.0			
				ash			
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			+	D=4'bgs			
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12			+				
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14							
15			F				-

# APPENDIX E FTMM-08: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

### APPENDIX E: FTMM-08 Landfill Boundary Refinement and Methane Gas Survey Results

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2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	E-1
3.0	REFERENCES	E-2

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E1	Landfill Boundary Refinement Summary
E2	Methane Gas Survey Results

#### LIST OF FIGURES

Figure No.	Title
E1	Landfill Boundary Refinement and Methane Gas Survey Results

#### LIST OF ATTACHMENTS

Attachment	Title
E-A	Test Pit Logs

#### 1.0 TEST PIT DELINEATION SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries will be discussed in further detail in the Remedial Investigation Report for FTMM-08 that will issued under separate cover. These changes are reflected on **Figure E1**. In addition, the RI report identified data gaps in the landfill boundaries, specifically between FTMM-08 test pit 4 and FTMM-05 test pit 7. Subsequent to the preparation of the RI Report for FTMM-08, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. None of the historical test pits that contain landfill solid waste (e.g., debris) were recategorized.

Test pits during the landfill boundary refinement were advanced along the 2010 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report. Test pits were advanced along the southwestern, southern, and southeastern landfill boundary. Additional test pits were unable to be performed in the interior of the landfill due to Site conditions including heavy brush and trees. Test pits were advanced at 10 locations at FTMM-08 as part of the landfill refinement activities on August 21, and August 24, 2015. Historical (2010) and additional test pit locations are shown in **Figure E1**.

Logs for the test pits advanced in 2015 are provided in **Attachment E-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table E1**.

Observations of the 2015 test pits at FTMM-08 varied from those containing landfill solid waste (M8TP1, M8TP2, M8TP4, M8TP5, M8TP6, and M8TP10) such as asphalt, concrete, wood, coal, glass, miscellaneous plastic, and metals, to those containing miscellaneous singular pieces of debris and/or scattered debris that was not contiguous and categorized as debris of *de minimus* quantity (M8TP3, M8TP7 M8TP8, and M8TP9). Those test pits with debris of *de minimus* quantity did not meet the criteria to be considered as part of the delineated landfill. Based on review of the historic test pits logs and 2015 test pits, the landfill boundary at FTMM-08 was not revised further and was kept as the 2010 boundary.

These observations were consistent with the information contained in the Construction Closeout Report (Princeton Hydro, 2011), which indicated that no landfill debris and only surface concrete debris was found along Parker's Creek when the creek banks were re-graded and riprap installed in 2009.

**Figure E1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

#### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of fourteen (14) landfill gas readings (including one QA/QC sample) were measured at thirteen soil gas locations at FTMM-08 as part of the methane gas survey. Sampling was conducted on August 3, August 4, and August 5 2015. Methane was detected at two locations (M8SG4 and M8SG6). One of the locations (M8SG6) exceeded 25 percent of the methane LEL. This location was located on the interior of the landfill. The five step out locations

(M8SG9, M8SG10, M8SG11, M8SG12, and M8SG13) were measured based on this methane detection. The collective methane results indicate the area within the landfill where methane was found above 25 percent of the LEL is very limited. Soil gas locations on the perimeter (including step outs) of the landfill did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-08. The methane detections are attributed to methane gas generating conditions at the landfill. The landfill gas readings are summarized in **Table E2.** The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are shown in **Figure E1**.

#### 3.0 REFERENCES

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

#### **TABLES**

Table E1 Landfill Boundary Refinement Summary

Table E2 Methane Gas Survey Results

# Table E1 Landfill Boundary Refinement Summary Site FTMM-08

#### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M8TP1	Y	1	Solid waste including concrete, burned wood, ash, brick indicative of landfill.
M8TP2	Y	1	Solid waste including metal, brick, broken glass, coal, fabric, wood indicative of landfill.
M8TP3	N	2	Debris of de minimus quantity; not landfill.
M8TP4	Y	1	Solid waste including asphalt, aluminum cans, paper, misc plastic, glass indicative of landfill.
M8TP5	Y	1	Solid waste including concrete, coal indicative of landfill.
M8TP6	Y	1	Solid waste including coal, concrete, terracota tile, paper cup, misc. plastic indicative of landfill.
M8TP7	N	2	Debris of de minimus quantity; not landfill.
M8TP8	N	2	Thin surface debris of de minimus quantity; not landfill.
M8TP9	N	2	Thin surface debris of de minimus quantity; not landfill.
M8TP10	Y	1	Solid waste including ball of wire, multiple glass bottles/jars, bricks, ash. indicative of landfill.

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

### Table E2 Methane Gas Survey Results Site FTMM-08

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M8SG1	8/3/2015	0.0	0.0	0.7	20.4	
M8SG2	8/4/2015	0.0	0.0	0.5	20.2	
M8SG3	8/4/2015	0.0	0.0	1.2	19.6	
M8SG3QA	8/4/2015	0.0	0.0	1.6	19.5	QA Sample
M8SG4	8/3/2015	0.2	3.0	4.5	14.6	
M8SG5	8/4/2015	0.0	0.0	1.6	19.4	
M8SG6	8/3/2015	16.9	OOR	21.6	1.0	
M8SG7	8/4/2015	0.0	0.0	2.8	18.9	
M8SG8	8/4/2015	0.0	0.0	2.0	19.1	
M8SG9	8/5/2015	0.0	0.0	0.8	20.1	Step out
M8SG10	8/5/2015	0.0	0.0	0.5	20.0	Step out
M8SG11	8/5/2015	0.0	0.0	1.1	19.6	Step out
M8SG12	8/5/2015	0.0	0.0	0.3	20.5	Step out
M8SG13	8/5/2015	0.0	0.0	3.6	17.4	Step out

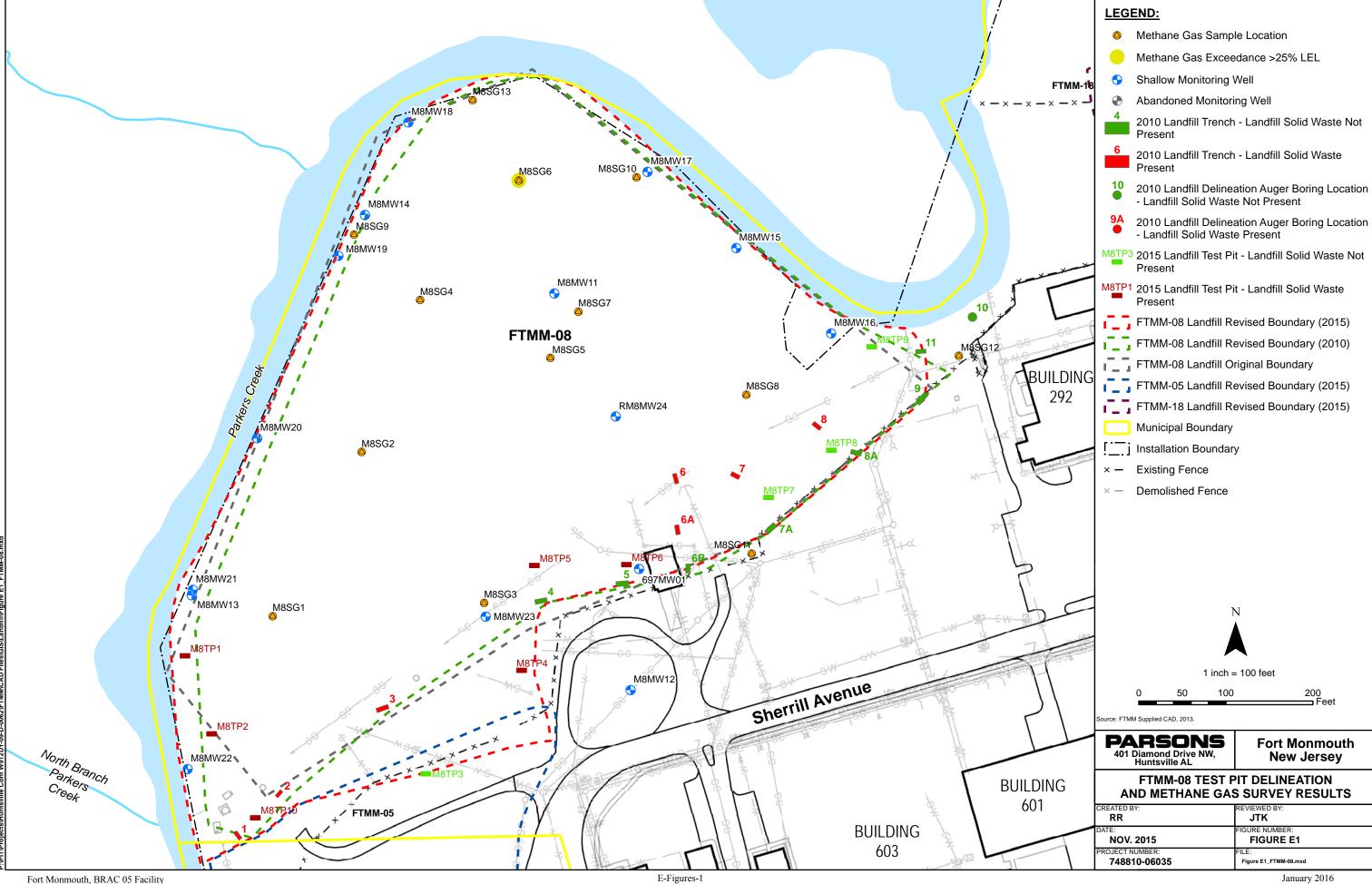
#### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

# **FIGURES**

Figure E1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix E Landfill Boundary Refinement and Methane Gas Survery Report for Nine Landfills



# **ATTACHMENTS**

Attachment E-A Test Pit Logs

1

		FEST PIT FIEL	D LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MB	TPI
PROJECT: FT LOCATION:	MM Landfill	M8	JOB NUMBER: 748 GROUND ELEV: INSPECTOR: 12, W	810 Donald
TEST PIT DATA  LENGTH WIDTH  2.5'  GROUNDWATER DATA  DATE / TIME	DEPTH 4 min	EXCAVATION METHOD  -LX(AVA(O)	CONTRACTOR: FWY START DATE: 092 COMPLETION DATE: 082 CHECKED BY:	115   1142 115
	TECTOR BACKGRO CO H2S COLL. 21 OXY POSS	, 182115/072	LOCATION SKETCH:	North
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH	SAM	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		-0-2' -3/4 Gravel for silt fence for silt fence for silt fence for silt fence for silt fence for silt fence was burned wood, -TD=4' bgs -multi-rae rea	telayer-concete, ash, brick	

j

			TES	ST PIT FIE	LD L	OG	PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: MBTP3	3
PROJECT:	FT	MM			јо	DB NUMBER: 7488	10
LOCATION	v: La	nd Fil	(M8		GF	ROUND ELEV:	
					IN	ISPECTOR: K, WY) or	rald
TEST PIT DAT		T	T			ONTRACTOR: #WT	laars
LENGTH	WIDTH 18 "	DEPTH 4	mini-exe	CAVATION METHOD		OMPLETION DATE: 0924 15	0950
GROUNDWAT		1	Will - Ch	avaioi		HECKED BY:	
DATE / TIM		is 1 f	1	7		***	
DEPTH TO	WATER	M	AX		LO	OCATION SKETCH:	<b>†</b>
MONITORING	G DATA					<b>\</b>	
INSTRUME	1	ETECTOR	BACKGROUND	TIME/DATE	/2		ŀ
Multi-Re		CO/HZS	Cal. passed	082415/07/	0	10	North
Plus REMARKS:	it	4019	1			fend	
KEMAKKS.						NTS	
		SAMPLE	STRATA	SA	AMPLE DESC	CRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy  M - Moderate
							D - Difficult
			- B.	-1'			_
1			+ 10	1 1000 0014. 8	andy,	loam, vootzone	_
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7							1 ]
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9			-			0	1 -
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			T				]
11							
			-				-
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13			-				
14							
15			+				-

	TE	EST PIT FIELI	D LOG	
PARSO	ONS	CLIENT:	TEST PIT NO.: M 9 T	P4
PROJECT: FIM LOCATION: Lan	IM dfill M8		JOB NUMBER: 7409 GROUND ELEV: INSPECTOR: Q.M.Y. CONTRACTOR: AWT	onald
LENGTH WIDTH  7 2.5'  GROUNDWATER DATA		excavation method ((a) a to)	START DATE: 0924  COMPLETION DATE: 0924  CHECKED BY:	15/0940
DATE / TIME DEPTH TO WATER MONITORING DATA INSTRUMENT DETEC	CTOR BACKGROUNI	D TIME/DATE	LOCATION SKETCH:	<b>↑</b>
Multi-Rae VOC/CA Plus LEU/ REMARKS:	OH2S Cal passe	d 082915/0710	fence	North
DEPTH (FT) VOC NO.	PLE STRATA DEPTH	SAMPI	LE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		brown sity san little gravel waste conce smaller piece large piece (a: hulti-rae read TD = 4'bgs		

	TES	ST PIT FIELD	LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.:	
PROJECT: FI	MM adfill MB		JOB NUMBER: MOTO GROUND ELEV: INSPECTOR: R.M. S.	onald
TEST PIT DATA  LENGTH WIDTH  7' 2'  GROUNDWATER DATA  DATE / TIME		CAVATION METHOD VCAVATOR	CONTRACTOR: AWT START DATE: 082415 COMPLETION DATE: 08241 CHECKED BY:	5
	ETECTOR BACKGROUND  ICO H2S Cal. Dassed  JOXY	TIME/DATE 08:2415/07/0	LOCATION SKETCH:	North
DEPTH (FT) VOC NO.	DEPTH STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- S,	-1' Uk brown silty dry, root zon 2.5' AA, wastezon Coal. /enghand@2.5 dvancingthek )=~2.5'bgs whi-rae read	eincl. concrete, difficulty arket	

		TES	T PIT FIELD	LOG	TAGE 1 OF
PAF	RSONS		CLIENT:	TEST PIT NO.: MBTP	le
PROJECT: ELOCATION: LG	TMM indfil	1 M8		JOB NUMBER: 74991 GROUND ELEV: INSPECTOR: 12.1496	
TEST PIT DATA				CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH		CAVATION METHOD	START DATE: 082415	10857
7' 2'	3	mini-ex	cavator	COMPLETION DATE: 082415	
GROUNDWATER DATA	1	,		CHECKED BY:	
DATE / TIME	+M	A			
DEPTH TO WATER		NV		LOCATION SKETCH:	1
MONITORING DATA			V (0.7 8.7 (2.5.)	121 M	*
	ETECTOR	BACKGROUND	TIME/DATE	- "14	WOI
	100/H25	cal passed	082415/07/0		North
	Yoxy	111		fence	-
REMARKS: LOCATIO	n nots;	taked		NTS	
	SAMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
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DEPTH (FT) VOC NO.	DEPTH				E - Easy
		1			M - Moderate
	++		.1	Mo. At a second of the second	D - Difficult
	1	-0-	<i>[</i>	1	1 -
		+ 6	1 own 87 lty savel	ly toam w/grand.	1 1
2		10	hy I		1
		+,	d		
3		\[ \( \) \( \) \( \)	1.71		1 7
				. 0 :11.	
4			manyon brown,	send, serry,	
		La	asti including	send, silty, cond, cond, constepieces	1 -
5			~		
<u> </u>		_	-3.01		1 -
6		+ $t$	sown silty san	de island	-
7	1	F 10	201	no graver,	1 -
7		+ 100	Paste incl. bu	okin concrete,	-
8		- pa	per cup, tenas	cotta tile	1 1
		- h	isc planting	ر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر المحر	1 7
9		F /	isc. plastic		
		T	211		1 ]
10			= 31 bgs		
			( )		_
11		mu	Oti-val readi	4:0	
		-		0	
12		-			-
		<u> </u>			_
13		+			-
14		-			-
**		6			-
15					

	TE	ST PIT FIEI	LD LOG	PAGE 1 OF
PARSON	16	CLIENT:	TEST PIT NO.: M8T7	07
PROJECT: FTM Land	M 6611 M8		JOB NUMBER: 7489 GROUND ELEV: INSPECTOR: F. M. T.	
TEST PIT DATA  LENGTH WIDTH DI  FI AI 4  GROUNDWATER DATA		XCAVATION METHOD	CONTRACTOR: AWT	510835
DATE / TIME DEPTH TO WATER MONITORING DATA	NIA		LOCATION SKETCH:	,
INSTRUMENT DETECTION  Multi-Res Vac(a)  Plus LEYO  REMARKS:	125 Cal. 040	TIME/DATE 082415/07/0	NTS	North
DEPTH (FT) VOC NO. DE	STRATA	SAN	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		brown to It. 2 silty sandy Nowaste except piece w/ rebo (did not expose other smalls some broken, D=4' bgs nulti-kae res	eddish brown loam, little grewel et a large concrete an: 4'(+) diameter edges) expieces of concete, glass	

			TES	T PIT FIELD	LOG	7.00
	PAR	SONS		CLIENT:	TEST PIT NO.: M	8TP8
PROJECT:	FT	111				48810
LOCATION		dfill	M8		GROUND ELEV:	
					INSPECTOR:	McDonald
TEST PIT DAT	LINE MAN HAR WITH		I		CONTRACTOR:	WT
LENGTH 7'	WIDTH 2'	DEPTH	miniexa	AVATION METHOD	START DATE: U	02415/0920
GROUNDWAT			I FUING CALL	non(o)	CHECKED BY:	000110
DATE / TIM		Λ.	1/1	1		N. M
DEPTH TO	WATER		11		LOCATION SKETCH:	<u>†</u>
MONITORING	DATA					-
INSTRUME		TECTOR	BACKGROUND	TIME/DATE	Ser.	1
Multi-Re		10x4	Cal.	082415/0710	T SE	North
PIWS PEMARKS: 1			1	s@thislocation.	Ex	Send
KEMPHOES.	000	Sunta	ce aescis	5(m 1 m 3 10car 1071,	NTS	X×
	S	AMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			-0.	- / '		_
1		1	+ 6	an malle	1. 0. 0	
2			- B	rown stry, San	ay loam, l	Huganel, -
-			+ 4	nown 8ity, San vaste including elephone pole plass bottle	3 Dieces of Co	naite, -
3			T +	elephone pole	Dieronogn	etal,
			T 0	lass botto	1712000	
4			1	)		<u></u>
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5			+ 5	AA, howaste		-
6				/		
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8						-
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10						
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12			F			-
12			9 <del>-4</del> -			1
13						
			T			
14						
500 San San San San San San San San San San			-			-
15						] -

	TES	T PIT FIELD	LOG	PAGE 1 OF
PARSONS		CLIENT:	7	8TP9
PROJECT: FTMM LOCATION: Land G	1 M 8		JOB NUMBER: 7	48810
TEST PIT DATA  LENGTH WIDTH DEPTH	EXC	CAVATION METHOD	INSPECTOR:  CONTRACTOR:  START DATE:	M9) on ald HWT 282415/0809
GROUNDWATER DATA	miniex	cavator	COMPLETION DATE: () CHECKED BY:	82415
DATE / TIME DEPTH TO WATER MONITORING DATA	A		LOCATION SKETCH:	1
INSTRUMENT DETECTOR  WILT- RAPPLY VOLCO HZS  LEY OXY  REMARKS:	BACKGROUND Cal.	082415/0710		North
REMARKS.			NTS	
DEPTH (FT) VOC NO. DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	ĖTO	town silty lookend graved  Pieces of concern top 1, no of  couple small  coal.  = 4' logs  whire read		neter)

			Г	EST PIT I	FIELD	LOG	PAGE 1 OF
	PAR:	SONS		CLIENT:		TEST PIT NO.: MOTPA	Ð
PROJECT: LOCATION:	FT La	MM	11 MB			JOB NUMBER: 748817 GROUND ELEV: INSPECTOR: R.M. DO	
TEST PIT DAT.	WIDTH	DEPTH		EXCAVATION METHO	OD	contractor: AWT start date: 082415	riacq
GROUNDWAT	3' ER DATA	4'	mini-	excavator		COMPLETION DATE: 08245 CHECKED BY:	3
DATE / TIM	Е	N/	A /	1	7/	LOCATION SKETCH:	4
MONITORING I		TECTOR	BACKGRO	UND TIME/I	DATE	D Treatment	
mueti rai		col this	Cal. Passe	, 082415	-1	TP107 SUNTO	North
REMÄRKS:	exoun	d bu	mble	bee him.		NTS	_
DEPTH (FT)	VOC NO.	AMPLE DEPTH	STRATA		SAMPLE D	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1				o-4' de brow little g waste A bottles   j  TD = 4' bog multi-ra	1	J. Saky Loom,  5-4, including  nultiple glass  iches, ash	

# APPENDIX F FTMM-12: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

# APPENDIX F: FTMM-12 Landfill Boundary Refinement and Methane Gas Survey Results

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1.0	TEST PIT DELINEATION SUMMARY	F-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	F-2
3.0	REFERENCES	F-2

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#### LIST OF FIGURES

Figure No.

F1 Landfill Boundary Refinement and Methane Gas Survey Results

#### LIST OF ATTACHMENTS

Title

Title

<u>Attachment</u> F-A Test Pit Logs

#### 1.0 TEST PIT DELINEATION SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries are discussed in further detail in the Remedial Investigation Report for FTMM-12 (Parsons, 2015). These changes are reflected on **Figure F1**. In addition, the RI report identified data gaps in the landfill boundaries, specifically near borings B-15 through B-22 in the northeast portion of FTMM-12 to be addressed during the landfill boundary refinement field activities. Subsequent to the preparation of the RI Report for FTMM-12, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. Some historical test pits (10, 11C, 12, 14B, and 21) did not appear to meet the criteria to be considered as part of the delineated landfill. The designation of these historical test pits was modified on **Figure F1** to indicate landfill solid waste was not present.

Test pits during the landfill boundary refinement were initially advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report (Parsons, 2015). To form a more comprehensive view of the landfill, additional test pits were performed in other areas of the landfill including: 1) in the northeastern corner of FTMM-12 after landfill solid waste was found in that area to better define the horizontal limits of the landfill; and 2) in the interior of the landfill since there was limited test pit data in this area. Test pits were advanced at 45 locations at FTMM-12 as part of the landfill refinement activities on August 25, 26, 27, and 28, and September 3, 2015. Historical (2010) and 2015 test pit locations are shown in **Figure F1**.

Logs for the test pits excavated in 2015 are provided in **Attachment F-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table F1**.

Observations of the 2015 test pits along Husky Brook contained landfill solid waste such as ash, slag, lumber, asphalt, and coal. These observations were consistent with the information contained in the Construction Closeout Report (Princeton Hydro, 2011), documenting the 2009 creek slope re-grading and riprap installation along the FTMM-12 northern creek boundary, where landfill solid waste was found along northern boundary adjacent to Husky Brook. Along the southern landfill perimeter, one test pit contained miscellaneous singular pieces of debris that was not contiguous and was categorized as debris of *de minimus* quantity (M12TP15). Other test pits contained no landfill solid waste (M12TP19, M12TP21, M12TP23, and M12TP25), however no change is recommended for the majority of the southern landfill boundary due existing roads and structures. The northern boundary was pulled in from Husky Brook based on the previous brook stabilization activities. Observations of the 2015 test pits on the interior of the landfill (M12TP11, M12TP20, M12TP41, M12TP42, M12TP43, M12TP44) contained landfill solid waste.

As a modification to the RI report, the southeastern landfill boundary was revised due to the presence of landfill solid waste in the 2015 test pits (M12TP29 and M12TP31). The RI report concluded that FTMM-12 boundaries identified the southeastern corner adjacent to Murphy Road as not landfill due to a review of the aerial photos indicating that this area was historically used for parking during landfill operations, and since the historical test pits around

this triangular area (2, 3, 4, 5, 6, and 7) did not indicate landfill solid waste. The landfill boundary was extended south beyond the step out locations that also contained landfill solid waste (M12TP32, M12TP34, M12TP35, and M12TP38), and bounded to the south by a series of test pits not containing landfill solid waste (M12TP25, M12TP36, M12TP37, M12TP39, and M12TP40).

**Figure F1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

#### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of sixteen (16) landfill gas readings (including one QA/QC sample) were measured at 15 soil gas locations at FTMM-12 as part of the methane gas survey. Sampling was conducted on July 29, 30, and 31, and August 3 and 5, 2015. Methane was detected at four locations (M12SG1, M12SG2, M12SG9, and M12SG13), and three of these locations (M12SG1, M12SG2, and M12SG13) exceeded 25 percent of the methane LEL. The six step out locations (M12SG10, M12SG11, M12SG12, M12SG13, M12SG14, and M12SG15) were measured based on these methane detections. These locations are located exterior to the 2010 landfill boundary, but on the interior of the refined 2015 landfill boundaries in accordance with the test pit activities summarized in Section 1.0. The collective methane results indicate the two areas within the landfill where methane was found above 25 percent of the LEL are very limited. Soil gas locations on the perimeter (including step outs) of the landfill did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-12. The methane detections are most likely attributed to methane gas generating conditions at the landfill, and to natural methane gas generating conditions from the decomposition of organics in this area. At three locations (M12SG7, M12SG8, and M12SG13), the soil gas probe could not be driven to 3.5 feet bgs because the water table occurred shallower than this depth. The soil gas probes were driven to a depth above the water table of 2.5 feet bgs. The landfill gas readings and any variations on the depth of sample collection are summarized in **Table F2**. The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are shown in **Figure F1**.

#### 3.0 REFERENCES

Parsons. Remedial Investigation Report for Site FTMM-12, Fort Monmouth, Oceanport, Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and Support Center, Huntsville, Alabama. August 2015.

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

# **TABLES**

Table F1 Landfill Boundary Refinement Summary

Table F2 Methane Gas Survey Results

# Table F1 Landfill Boundary Refinement Summary Site FTMM-12

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M12TP1	N	3	No solid waste observed; not landfill.
M12TP2	Y	1	Solid waste including ash, slag, burned wood, misc plastic, burned paper, brick, broken glass indicative of landfill.
M12TP3	Y	1	Solid waste including ash, concrete pieces, terracotta tile indicative of landfill.
M12TP4	N	3	No solid waste observed; not landfill.
M12TP5	N	3	No solid waste observed; not landfill.
M12TP6	Y	1	Solid waste including concrete, coal indicative of landfill.
M12TP7	Y	1	Solid waste including ash, coal indicative of landfill.
M12TP8	Y	1	Solid waste including ash, coal, sla gindicative of landfill.
M12TP9	N	2	Debris of de minimus quantity; not landfill.
M12TP10	Y	1	Solid waste including ash, coal indicative of landfill.
M12TP11	Y	1	Solid waste including ash, coal, slag indicative of landfill.
M12TP12	N	3	No solid waste observed; not landfill.
M12TP13	Y	1	Solid waste including ash, coal, glass bottle, broken glass, fabric, paper indicative of landfill.
M12TP14	N	3	No solid waste observed; not landfill.
M12TP15	N	2	Debris of de minimus quantity; not landfill.
M12TP16	Y	1	Solid waste includingash, slag, asphalt, shingle, coal indicative of landfill.
M12TP17	Y	1	Solid waste includingburned lumber, metal, wire, glass bottle, concrete indicative of landfill.
M12TP18	Y	1	Solid waste including ash, coal indicative of landfill.
M12TP19	N	3	No solid waste observed; not landfill.
M12TP20	Y	1	Solid waste including ash, wire, coal, burned wood indicative of landfill.
M12TP21	N	3	No solid waste observed; not landfill.
M12TP22	N	3	No solid waste observed; not landfill.
M12TP23	N	3	No solid waste observed; not landfill.
M12TP24	Y	1	Solid waste including ash, slag, coal, glass bottle indicative of landfill.
M12TP25	N	3	No solid waste observed; not landfill.
M12TP26	Y	1	Solid waste including glass bottles, misc plastic, burned wood, rusting metal indicative of landfill.
M12TP27	N	2	Thin surface debris of de minimus quantity; not landfill.
M12TP28	Y	1	Solid waste including coal, ash, slag, concrete, brick indicative of landfill.
M12TP29	Y	1	Solid waste including ash, slag indicative of landfill.
M12TP30	Y	1	Solid waste including ash, coal, slag, burned wood indicative of landfill.

# Table F1 Landfill Boundary Refinement Summary Site FTMM-12

#### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M12TP31	Y	1	Solid waste including ash, coal, slag indicative of landfill.
M12TP32	Y	1	Solid waste including ash, coal, slag indicative of landfill.
M12TP33	N	3	No solid waste observed; not landfill.
M12TP34	Y	1	Solid waste including slag, ash, coal indicative of landfill.
M12TP35	Y	1	Solid waste including ash, coal, concrete, lumber, metal pipe, wire, glass bottle indicative of landfill.
M12TP36	N	3	No solid waste observed; not landfill.
M12TP37	N	3	No solid waste observed; not landfill.
M12TP38	Y	1	Solid waste including ash, coal, burned wood, glass bottle, coal indicative of landfill.
M12TP39	N	2	Debris of de minimus quantity; not landfill.
M12TP40	N	3	No solid waste observed; not landfill.
M12TP41	Y	1	Solid waste including ash, coal, slag indicative of landfill.
M12TP42	Y	1	Solid waste including burned wood indicative of landfill.
M12TP43	Y	1	Solid waste including ash, coal, slag indicative of landfill.
M12TP44	Y	1	Solid waste including ash, coal, slag, paper, cans indicative of landfill.
M12TP45	Y	1	Solid waste including ash, coal, slag indicative of landfill.

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

Table F2 Methane Gas Survey Results Site FTMM-12

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M12SG1	7/29/2015	31.2	OOR	8.7	4	
M12SG2	7/30/2015	25.7	OOR	9.8	3.2	
M12SG2QA	7/30/2015	27.3	OOR	10.9	0.8	QA Sample
M12SG3	7/30/2015	0.0	0.0	0.0	21.1	
M12SG4	7/30/2015	0.0	0.0	12.0	8.7	
M12SG5	7/31/2015	0.0	0.0	1.3	19.6	
M12SG6	7/31/2015	0.0	0.0	0.4	20.1	
M12SG7	7/31/2015	0.0	0.0	1.9	18.7	Sampled at 2.5' bgs
M12SG8	7/31/2015	0.0	0.0	0.0	20.8	Sampled at 2.5' bgs
M12SG9	7/30/2015	0.3	6.0	0.6	19.3	
M12SG10	8/3/2015	0.0	0	2.6	18.3	Step out
M12SG11	8/3/2015	0.0	0.0	0	21.2	Step out
M12SG12	8/3/2015	0.0	0.0	0.2	26.9	Step out
M12SG13	8/3/2015	3.4	65.0	8.2	6.6	Step out, sampled at 2.5' bgs
M12SG14	8/3/2015	0.0	0.0	1.2	19.7	Step out
M12SG15	8/5/2015	0.0	0.0	0.5	18.7	Step out

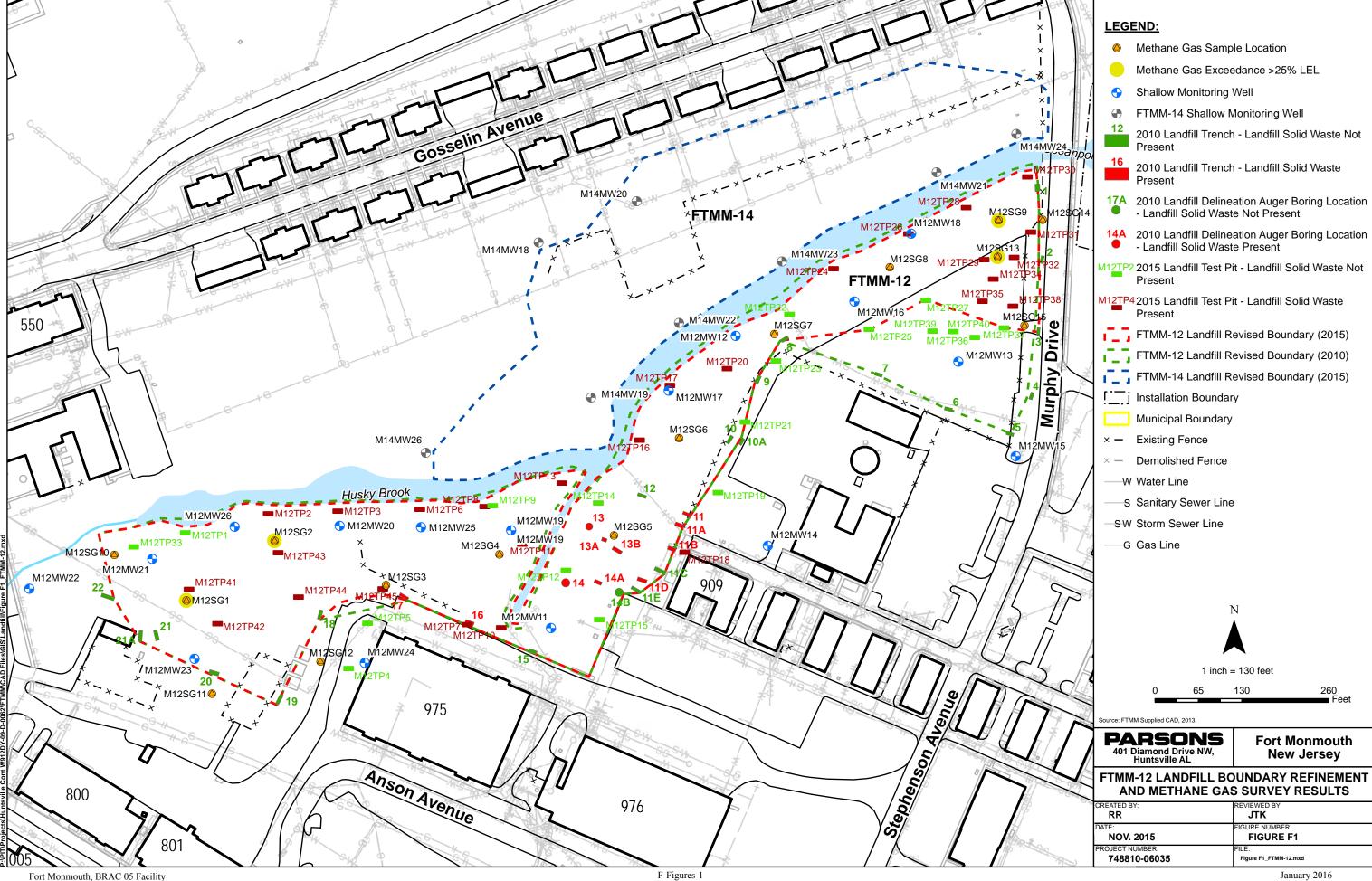
#### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

# **FIGURES**

Figure F1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix F Landfill Boundary Refinement and Methane Gas Survery Report for Nine Landfills



# **ATTACHMENTS**

Attachment F-A Test Pit Logs

	TES	ST PIT FIELD	LOG		•
PARSO	ons	CLIENT:	TEST PIT NO.:	MIZTP.	L
	111 ndGII MIZ		JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 R.MUDO	
TEST PIT DATA  LENGTH WIDTH	DEPTH EXC	CAVATION METHOD	CONTRACTOR: START DATE:	AWT 0827151	
61 31		cavator	COMPLETION DATE:		0012
GROUNDWATER DATA DATE/TIME	MAN	$\Delta \Delta I$	CHECKED BY:		
MONITORING DATA	10 1/1 / 0		LOCATION SKETCH:	k-	_ 1
INSTRUMENT DETERMINENT DETERMI	OHS Cal. Dassed	TIME/DATE 082715/0730	1	ip·rap	North
REMARKS:	·		NTS	, (	7
DEPTH (FT) VOC NO.	DEPTH		DESCRIPTION		EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- d - s - d - d - s - d - d - N	Langish brown 8 well-sorted, Some dry to moist  A  Lk greenish grav ity sand, medly some clay, spoi nganic matter.  5=4'bgs  o Waste  ulti-var rendi.	y to dark well-sort adic decay Moist to w	brown ted,	

		TEST PIT FIEL	D LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: M127	72
	TMM undfill h	42	JOB NUMBER: 74% GROUND ELEV: INSPECTOR: R.MC	B10 Donald
TEST PIT DATA  LENGTH WIDTH  W 70 "  GROUNDWATER DATA  DATE / TIME	ф реги 4' ра	EXCAVATION METHOD	CONTRACTOR: ATM START DATE: 0927 COMPLETION DATE: 0827 CHECKED BY:	715/0751
Multi-Rae Voc	7 77 7	GROUND TIME/DATE  PASSED 002715/0730	LOCATION SKETCH:  CREEK  NTS	ower North
DEPTH (FT) VOC NO.	AMPLE STRAT DEPTH	A SAM	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		2.5'-4'	slag, burned war, burned paper,	od,

		TEST PIT FIEI	LD LOG	PAGE 1 OF /
PAR	SONS	CLIENT:	TEST PIT NO.: M/	2TP3
PROJECT: FI	MM ndfill M	12	JOB NUMBER: 749 GROUND ELEV: INSPECTOR: R.M.	3810 142 onald
TEST PIT DATA			CONTRACTOR: AM	VT
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 082	615/1436
6 20"	4' m	ini-excavator	COMPLETION DATE: 082	615
GROUNDWATER DATA DATE / TIME	1		CHECKED BY:	
DEPTH TO WATER	I NVA		LOCATION SKETCH:	
MONITORING DATA			- creek -	
INSTRUMENT DI	ETECTOR BACK	GROUND TIME/DATE		
		). Dassed 002615/09	145	North
	a joxy			1., 1.
REMARKS:	•		NTS	MW20
S	SAMPLE STRAT	A SAM	MPLE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO.	DEPTH			E - Easy
				M - Moderate D - Difficult
1		brown silt well sorted, a depth 2'-4' waste-ash,	by sand, med, by to moist will  concrete pieces, rieses, moist  ading = 0	

			TE	ST PIT FIE	LD LOG		PAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.:	MIZTP.	4
PROJECT LOCATIO		TMM	3111412	31.	JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 R.M.Do	0
TEST PIT DA	TA				CONTRACTOR:	AWT	rala
LENGTH	WIDTH	DEPTH		CAVATION METHOD	START DATE:	082515	1055
le'	18"	4'	mini-e	x cavator	COMPLETION DATE	082515	
GROUNDWA	TER DATA			inger and the same of the same	CHECKED BY:		
DATE / TI	ME	1	111		7		
DEPTH TO	WATER	1			LOCATION SKETCH	1.705	<b>†</b>
MONITORIN	G DATA					1110	
INSTRUM	ENT	DETECTOR	BACKGROUND	TIME/DATE ,		\>,	
Multi-1	lae WO	cleeths	cal. pas	sed 082515/0	5725 0 04	1260	North
plu		Tloxy			1/1.	well	
		ed 1/3	1 NIW 2 St	akedloc due	→ \> 5	e da c	
to 8	emer 1	line	1410 2001		NTS	1810 942	
		SAMPLE	STRATA	Sa	AMPLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO	DEPTH					E - Easy
			1 1				M - Moderate
							D - Difficult
			٨	- human oil	4 sade-los		
1	1			= BLOWN 811	ty, sandy loc	m,	
	1		- "	3			-
2			F,,	- 5-1			_
-			1.5	)-2,2,	silty sand, sorted, dam	1.	_
3			-	orangishiled	suty sand,	fine-	-
3-			+	med well	unted dam	D	_
. —			-		so so, acom	7	-
4			+ 3	.5-4'			-
			- '				_
5				gregistique	noist, med		_
			- ta	Pelan 8/ 1	moriet !	01	_
6			4	10000	med.	1	_
			<u> </u>			<i>'</i>	_
7			17	)=4' bg1			
			L	1-12			
8			_ h	24.05	landing - A		
				rulti-rae	leading=0		
9					()		
							1
10							
			+				-
1							-
			+				
2			<b>–</b>				-
	1		+				-
,			F			-	
3			+				4
. —			F				_
4			-				-
			-				_
5							

		TEST PIT FIEL	LD LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: M12	TP5
PROJECT: LOCATION: LA	MM ndf111	112	JOB NUMBER: 748 GROUND ELEV: INSPECTOR: 2, 144	810 Donald
LENGTH WIDTH  (Q'   B''  GROUNDWATER DATA	DEPTH 4' m	EXCAVATION METHOD	CONTRACTOR: AW 1 START DATE: 0825 COMPLETION DATE: 0825 CHECKED BY:	15/1042
Multi Rae VOCI plus LE REMARKS: TP more	COHLS CON	exground time/date 0. passed 0825/5/0725 41 0 Staked loc. du		request North
DEPTH (FT) VOC NO.	AMPLE STRA	SAM SAM	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		-2'-4'	sandy loam  nor Silty sand,  gravel, some  ral	

			TES	ST PIT FIELD		PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: M12TP	6
PROJECT:	F	ПИМ			JOB NUMBER: 748810	)
LOCATION		and Fi	11 1112		GROUND ELEV:	
					INSPECTOR: R. M. Don	ald
TEST PIT DAT	TA				CONTRACTOR: AWT	,
LENGTH	WIDTH 2'	DEPTH		CAVATION METHOD	START DATE: 0921615	11424
le t		41	mini-exi	cavator	COMPLETION DATE: 08265	-
GROUNDWAT DATE / TIM			11	2 0 /	CHECKED BY:	
DEPTH TO		N	AX		LOCATION SKETCH:	
MONITORING	G DATA				creek -	
INSTRUME	ENT DE	TECTOR	BACKGROUND	TIME/DATE	TI	
Multi-R	100	CO H25	Cal. passed	082615/0945		North
Plus	LE	Yòxy	1		1	
REMARKS:		. /			NTS MW 25	
	S	AMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
			L in	Sit 1	nd, dry, isture downward, p2' pit: gravel ad in top 2',	
1			$\Gamma^{0}$	3,5	1	
		1	L 12	rown Silty Sa	nd de	_
2			+ /	wereasing In a	ish of	4
3			F '	2000	stude about ward,	1 -
			+ 2	one gravel to	p2.	1 7
4				South end of	sit: manel	
			_	C= 222.00	1-9000	
5			+	to grave to	ad in top 2,	-
			-		ŕ	-
6			十 3.	5-4'		-
7			-	waste-ash,	1800	1
				Com - sour,	sing,	
8			+70	=4' bgs	O	
. —						-
9			+ 1001	ulti-raeread		
10			-1110	all rayena	They = D	-
					U	1
11						
			_	1		4
12			+			-
13			-			4
1.3						-
14						٦
			T			]
15			_			4

			TE	ST PIT FIEL	LD LOG		
	PAR	SONS		CLIENT:	TEST PIT NO.:	M12T	P7
PROJECT:	F7	MM	11/412		JOB NUMBER:  GROUND ELEV: INSPECTOR:	74881 R.W4)0	
TEST PIT DAT	ГА				CONTRACTOR:	AWT	naig
LENGTH	WIDTH	DEPTH	E	XCAVATION METHOD	START DATE:	082515/	1124
le'	31	3'		excavator	COMPLETION DATE:	092515	
GROUNDWAT	TER DATA				CHECKED BY:		
DATE / TIM	1E	1/	1	1			
DEPTH TO	WATER	/ 4/	41		LOCATION SKETCH:		1
MONITORING							
Multi Plus REMARKS: O	-Rae 1/00	COHZS LOXY LOXY	Cal. passe	7 - 1		$\geqslant$	North
200		AMPLE	STRATA		IPLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH	- 1				E - Easy
							M - Moderate D - Difficult
				101			D Dinicut
1				-1.5	, 1		
			/	brown silty, so	andix loam,		
2				100t2me	()		_
			-	Jord Jord			-
3			$+\iota$	51-31	0		-
4			- '	5'-3' wastezone.	ash coal		-
1 "-			_	who zora.	90011		-
5							
			T	1 1			
6		1	T	D=3' bgs			
			-	0	1 -		-
7			+n	rulti-rae reac	ding=0		-
. —			-		0		4
8			+				4
9			<u> </u>				7
							1
10		1	$\perp$				
		1					_
11			+			1	-
			-				4
12			+				4
13			-				- 1
~			+				4
14							
16							7
15			-			1	-

		TEST PIT I	FIELD LOG		
PAI	RSONS	CLIENT:	TEST PIT NO.:	M12 TF	08
	MM andfillM	12	JOB NUMBER: GROUND ELEV: INSPECTOR: CONTRACTOR:	74881 R.M.92	0
LENGTH WIDTH  LO CONTROL OF THE CONT	1111	EXCAVATION METHO	OD START DATE:	082615 re: 082615	/1414
Multi-Rae Vac	100/H2 C	CKGROUND TIME/T al. 082615/ CASSED	F /	ele— ° TP9	North
DEPTH (FT) VOC NO.	SAMPLE STR	ATA	SAMPLE DESCRIPTION		EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		j.5'-3' greenis med, wer  3'-5' waste- TD=5'bg	ce fabric @ 1.5'  h-grey sand, si el sorted  ash, slag, coal  s  reading=0.	ilty,	

			7	EST	PIT FIELD	LOG	
	PAR	SONS		C	LIENT:	TEST PIT NO.: M/2	-TP9
PROJECT: LOCATION	1	TMM and f	511 M	12		JOB NUMBER: 74 GROUND ELEV: INSPECTOR: R. //	8810 40 mald
TEST PIT DAT	ГА					CONTRACTOR: AU	UT
LENGTH	WIDTH	DEPTH		EXCAVA	ATION METHOD	START DATE: 082	2615/1405
le'	20"	4'	min	IENCE	wator	COMPLETION DATE: 002	1615/
GROUNDWAT	TER DATA					CHECKED BY:	
DATE / TIM	ИЕ	11	14	1	1		
DEPTH TO	WATER	/ / /	/ /	10		LOCATION SKETCH:	<b>†</b>
MONITORING	DATA					No ole	
INSTRUMEN MWH-R Plus	al voc	ETECTOR 1/CO/H2S	Coul.	, (	TIME/DATE 0826 (5   0945	TPB TP9	o TO I3North
REMARKS:		1 1				NTS	
		SAMPLE	STRATA		SAMPLE	E DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy  M - Moderate
	_			0-1.	E /		D - Difficult
1			[	0-1.	2,	2 1	
				3/4	gravel for	gravel road	
2				· cil	45 CB	0:	
				- 011	Tence tal	MC @1,5"	
3				1-	21.1		
			-	1.5 -	4	, ,	
4			4	. gr	enish grav	, sand, med,	-
			-	. 1110	00 sested 1	sand, med, 1-3 small (c8".	dial
5		1	+	. we	a sociali,	01 'C	-
, —			-	. pie	ces of aspha	It, few pieces.	マ   -
6			-				$^{\circ}$ $^{\dagger}$
7			- H	Coc	4, 0 mm p	eces of bick	
			+		* 1 1 - 4		1 -
8				117=	4 bgs		
					0		1 1
9				mul	eti-raereadi	ng =0	1 7
						0	
10							
	1 1	1	L				
11							
		1	-				
12			+				-
			-				_
13			+				-
			F				-
14	.		+				-
15							

			TE	ST PIT FIE	LD	LOG	TAGE T OF T
	PAR	SONS		CLIENT:		TEST PIT NO.: 4	
PROJECT:	P	ПИИ				JOB NUMBER: M12T	P10/74884
LOCATION	v: La		11112			GROUND ELEV:	1.000
						INSPECTOR: R.MD	onald
TEST PIT DAT	ГА		,			CONTRACTOR: AWT	
LENGTH	WIDTH	DEPTH		XCAVATION METHOD		START DATE: 002515	1109
6.51	2'	41	mini-	excavator		COMPLETION DATE: 092515	<u> </u>
GROUNDWAT		ļ	1)			CHECKED BY:	
DATE / TIM	THOUSAND NO.	A	M	///		LOCATION SYPTOM	λ.
DEPTH TO		1 1	1 Par			LOCATION SKETCH:  - pavel line (abo  power line (a.g.)  NTS	re ground)
MONITORING INSTRUME		TECTOR	BACKGROUNE	TIME/DATE		quelinette	0
Multi-A	0	Ico Hos	cal passe	1 1 1 1 1 1 1	5	-pour	North
Plus	LE	U Day	Car for see	0000101010		Line(a.g.)	- 1
REMARKS:		1				power	road
	S	AMPLE	STRATA	SA	AMPLE D	DESCRIPTION	EXCAVATION
DEDENI (FFE)	1100 NO	DERMI					EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy M - Moderate
							D - Difficult
				1-28'		andyloan.	_
1			+	1 . 1000 51	4 8	anderloan.	_
			-	prown sil	14,50	and of the second	-
2			+	acy	J	•	-
3			10	8'-4'			1 -
3-			+	011 t	- 0	e-ash, coal,	1 1
4				SAA, Was G	300	e and tony	
			T				
5			$\perp_{\alpha}$	4'			
				11/1/201	1	*	
6				genon 18h-	mo	ion silty sand,	1 -
_ —			-	med., dam	4	0	-
7			+	/	1		1 -
8			1	200			1
°-			+1	D=41 bgs			
9	1 1	1		_	0 .		1 7
				nulti-value	rdi	9:0	]
10		1				0	
			L				
11			+				-
			-				-
12			+				-
13			-				
13			+				-
14							
			T				
15			$\perp$				

TEST PIT FIELD LOG										
PARSONS					CLIENT:	TEST PIT NO.:	M12T1	011		
PROJECT: FTMM LOCATION: Land GIL M12						JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 P.M.Do	7		
TEST PIT DATA						CONTRACTOR:	AWT	racq		
LENGTH	WIDTH	DEPTH	Γ	EXC	AVATION METHOD	START DATE:	0826151	134-3		
Ca'	2'	41	mini		Covato	COMPLETION DATE		1212		
GROUNDWATE	R DATA		T TILLET	X/A	( 0 - 0 + 0 ) - 1	CHECKED BY:	0000	-		
DATE / TIME		111	11		201					
DEPTH TO W	/ATER	M	14		1///	LOCATION SKETCH	: OHW	19 4		
MONITORING D	DATA							.,		
INSTRUMENT	T DE	TECTOR	BACKGRO	UND	TIME/DATE		П			
Multi-Re	ae voc	100/H25	backa	tau	1 082615/0945			North		
Plus	LE	Hoxy	Cal. Da	rsed						
REMARKS:		1	,			- Cue				
				-		NTS				
1 1	S.	AMPLE	STRATA		SAMPLE	DESCRIPTION		EXCAVATION		
								EFFORT		
DEPTH (FT)	VOC NO.	DEPTH	1					E - Easy  M - Moderate		
								D - Difficult		
2				. 3	1.5 ' 3/4 gravel fo 3ilt Fence fab	glavel 1 ric@ 1.51	ond.	-		
4			-		-2.5' ofine brown ed-fine, mott	Siltysan	d,	-		
6					Vaste - ash		0			
78			+			,	0	=		
9			F	TD	= x'bgs	'				
10			+	m	ultizaeread	ing:0				
11			ŧ					]		
12			+					=		
13			+					-		
15			+					=		
			+							

	TE	ST PIT FIELI	LOG	PAGE 1 OF	
SONS		TEST PIT NO.: 14/2/79/2			
MM		JOB NUMBER: 746,610			
	M12	GROUND ELEV:			
			INSPECTOR: R.W.	Donald	
			CONTRACTOR: AW		
LENGTH WIDTH DEPTH			START DATE: 082515   1145		
14. 1	mini-	-002	215'		
111	1	1 1 -	CHECKED BY:		
NI	AXU		LOCATION SKETCH:	4	
ETECTOR	BACKGROUND	TIME/DATE			
	cal.	Creek 1	North		
LOXY	passed				
,			NTS		
AMPLE	STRATA	SAMPL	E DESCRIPTION	EXCAVATION	
				EFFORT	
DEPTH				E - Easy	
				M - Moderate D - Difficult	
	13, 12' 1 N T	14 gravel for a Silf fence @ 2 -4' red dish brown ned - Gine well gravel lo Waste D = 4' bgs	silty sand e sorted, little		
	DEPTH 4'	DEPTH EX A' MINI-  STECTOR BACKGROUND  CG/H_S Cal.  L/OXY PASSED  AMPLE STRATA  DEPTH  DEPTH  -0- 3	DEPTH EXCAVATION METHOD  A' MINI-IXCAVATON  STECTOR BACKGROUND TIME/DATE  ICG/H-S Cal. 062515/0725  AMPLE STRATA SAMPL  DEPTH  DEPTH  -0-2' -3/4 grewelfore 8ilf fence @ 2 -2'-4' - ved dish brown - med-Gine well - granel  No Waste - TD = 4' bgs	DOB NUMBER: 749,  MA FILL MIZ  DEPTH EXCAVATION METHOD START DATE: 0825  A' MINI-LXCAVATON  CHECKED BY:  LOCATION SKETCH:  STECTOR BACKGROUND TIME/DATE  CCO H_S Cal. 062515/0725  LOCATION SKETCH:  NTS  SAMPLE STRATA SAMPLE DESCRIPTION  DEPTH  DEPTH  DEPTH  DEPTH  A JUNE STRATA SAMPLE DESCRIPTION  SAMPLE STRATA SAMPLE DESCRIPTION  A JUNE SAMPLE DESCRIPTION  DEPTH  A JUNE STRATA SAMPLE DESCRIPTION  DEPTH  A JUNE STRATA SAMPLE DESCRIPTION  A JUNE SAMPL	

			T	EST PIT FIEL	LD LOG	PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: 1/12	TP13
PROJECT: LOCATION:		U/Y ndfi	111/12		JOB NUMBER: 74 9  GROUND ELEV:	410
TEST PIT DATA	WIDTH	DEPTH		EXCAVATION METHOD	CONTRACTOR: AWT	15/1353
GROUNDWATER	2/ R DATA	4'	mini	-excavator	CHECKED BY:	15'
DATE / TIME DEPTH TO WA		N	A-		LOCATION SKETCH:	
INSTRUMENT MULTIRA Plus REMARKS:	DE VOC	COHLS LOXY	lal.	1 192615/0945		North
DEPTH (FT) V	OC NO.	AMPLE DEPTH	STRATA	SAM	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1				1.5-4'	for gravel road, bric @ 1.5' Ceal glass bottles, Fabric, paper,	

							PAGE 1 OF	
				TEST PIT FIEL	D LOG			
	PA	RSONS		CLIENT:	TEST PIT NO.:	M12T7	0/4	
PROJECT LOCATIO	-	TMM and G	ill MI	2	JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.M.D.	mild	_
TEST PIT DA	TA				CONTRACTOR:	AWT	onaca	
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD	START DATE:	082515/	1313	
6'	20"	4'	min	i-excavator	COMPLETION DATE:	0825151		
GROUNDWA			2	TA	CHECKED BY:			
DATE / TI		+ NI	14	11/1/	LOCATION EXCTOR	- 3 .	1	
DEPTH TO		1 1 1		100	LOCATION SKETCH:	Cell	<sup>7</sup> 1	
MONITORING		DETECTOR	BACKGR	OUND TIME/DATE	-	5		
Multi-1	A 1	cleelHos	1 0		- 1/1	a a	North	1
Plu		+ LIOXY		1136 01001310100		7	7,70,0	
REMARKS:		1 (						
	T T				NTS			_
	1 -	SAMPLE	STRATA	SAMP	LE DESCRIPTION		EXCAVATION	
DEPTH (FT)	VOC NO	DEPTH					E- Easy	
DEFIN(FI)	100 100	, DEITH					M - Moderate	
							D - Difficult	
				-0-1'				-
1-	- 1		_	- 3/1/2/2000	C= 10 0	1		-
2	-			- 14 graves	to graver.	wal		-
2	1			3/Agravel - Siltfence fo	ibric al			7
3	1						1	٦
	1			[ 1' -4'				
4				- orangish bio little gravel, Sorted, dan		g		
				- Dittle	ion sity sa	nd,		4
5			-	- en a graver	med-fine, u	rell-		+
6			1	- Sorled, dan	up			$\exists$
°-			1	TD-411	ľ.		1	+
7				- TD = 4' bgs				
				NoWaste				]
8								1
				multi-rae rea	dinash			4
9			-	- Multipac rea	ming. D			4
,,			F	-	U			-
10			+	-				+
11			F	-				-
			1	-			5	7
12				-				
				-				
13			_	-				-
			-	-				$\dashv$
14			+	<del>.</del> ,				+
15								1

			TES	ST PIT FIEL	D LOG		PAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.:	M12TP	15
PROJECT: LOCATION		TMM landfi	11 M12		JOB NUMBER: GROUND ELEV: INSPECTOR:	74881 F. M. Don	16
TEST PIT DAT	ГА				CONTRACTOR:	ANT	
LENGTH	WIDTH	DEPTH	EXC	CAVATION METHOD	START DATE:	082515	1154
·子/	2'	41	mini-e	xcavato	COMPLETION DATE	090515	
GROUNDWAT			T4 T		CHECKED BY:		
DATE / TIM	Salar Salar	- NI	A	1//	LOCATION SWETCH		
DEPTH TO		1			LOCATION SKETCH:		1 -
MONITORING		DETECTOR	BACKGROUND	TIME/DATE		H= 0	1/1
Multi-	Rae VC	c/ce/H2S	cal. passa		3	Her	North
REMARKS:	Loca ti	on not	Staked 1	561 NWO edge	6 pa	Mainglot	-
porter	0	SAMPLE	STRATA		PLE DESCRIPTION	3	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO	. DEPTH					E - Easy
							M - Moderate
T				n (1)			D - Difficult
1				10.8' nown silty.	c. 1. Dec.	- surfa	
			L b	10wn 811191.	Sandy your	, delse	
2			+ ,,	0 11	Ü		_
			- 0.8	3-4'	11/ 1- 0	~/`	-
3			+ 1	eddish-browned well-so	n silty sand,	Dine-	-
4			- n	red. well-so	rted, dan	P	-
5			_ T	\ _ V(			
			1/-	)=4 bgs			
6				Oti KOD ID - of			4
_			-mi	ulti-ralleads	9-0		-
/			+ ,	1	O		-1
8			大地	Pvc/conduit	lines@SE	end	-
			T &	b Pit. Appro	x. le" dia. 1	One	7
9				D Pin , IPP	1 10 - 10 - 4	hina	]
			- be	token by exc	avator - viet	may	
10			+ in	side Called	ellanda	n (Jim)	4
,,			F 11	e camo is look	ed alhem	said	-
"			+ 11-4	came sittle			-
12			- he	did not kno	Cillian Har	1	7
			111	ent to sto	The the	1	
13			+ H	lea was no	1 curved of	wegette	on,
,,			- 6	outilities u	vere marked	in the	4
14			+ 10	ea prior to	rit excava	tion	4
15				10000	F	,	

				7	TEST PIT FIELI	D LOG	PAGE 1 OF
		PAR	SONS		CLIENT:	TEST PIT NO.: -748	216
PROJECT LOCATIO			TMM	э́П МГ	2.	JOB NUMBER: 5 M/2 GROUND ELEV:	
TEST PIT DA	ТА						Donald
LENGTH	T	IDTH	DEPTH		EXCAVATION METHOD	START DATE: 0820	Le (5/1233
le'	2	21	4	mini	-excavator	COMPLETION DATE: 0820	331
GROUNDWA	TER DA	ATA		1.		CHECKED BY:	
DATE / TI			N	11			
DEPTH TO			1,			LOCATION SKETCH:	1
MONITORING			TECTOR	BACKGRO	UND TIME/DATE	-	
Multi-R		1	Ce/H2S				North
Plu			UOX4	cae. pa	524 000415/0115		NOIDI
REMARKS:			7-7-1			7	
						NTS	
		S	AMPLE	STRATA	SAMPI	E DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC	NO.	DEPTH				E - Easy
							M - Moderate D - Difficult
					0-1.51	X 31	
1					VII.3	sandle los	
					brown 81117	surrey with	_
2				+	. rootzone. A	sandy loam. ome pubble-size g	rand _
				_	1.51-2.5		_
3				+	1.0 2.5	1 / 1	-
. —				-	alive brown,	silty sand, med,	-
4				-	well-soited	J	-
5			1	-			-
-				-	2.5-4'	2 2 1 4	1 -
6			1		waste, ash, se	ag asphar	
			1	T	shingles con	00	1 7
7			ı	$\perp$	waste ash, sh shingles, coa		
8				+	TD=4'bgs		
				-	U		
9——				. +	multi-ral rea	ding = A	1 4
. —		- 1		-		1	4
0			1	+		0	-   -
1			1	F			
· <del></del>	1		- 1	+			-
2				-			
				十			
3			1				
				T			7
1							
5							

			TE	ST PIT FIEI	LD LOG	100	PAGE 1 OF
	PAF	SONS		CLIENT:	TEST PIT NO.:	MIZTP	17
PROJECT:	Ť-	FIMM	1		JOB NUMBER:	74991	0
LOCATION	-/		11 M12		GROUND ELEV:	1001	0
					INSPECTOR:	R.MyDo	nald
TEST PIT DAT	ГА		T		CONTRACTOR:	ANT	
LENGTH	WIDTH	DEPTH		CAVATION METHOD	START DATE:	082615	
5,51	2'	31	mini-en	ccavator	COMPLETION DATE	092619	5
GROUNDWAT DATE / TIN		1225	IT		CHECKED BY:		
DEPTH TO		21			LOCATION SKETCH:		A
MONITORING	DATA					el	Ī
INSTRUME	NT D	ETECTOR	BACKGROUND	TIME/DATE	MW 7		
Multi		100/H5	cal.	082615/09	45 MW 1		North
Plu	1 LE	ZIOXY	passed				
REMARKS:		' 1	,		NTS		
		SAMPLE	STRATA	SAN	MPLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
			10	21			D - Dimedit
1				-2'			
			T	nown silter	, sandy loan	1.	
2			4	int - d'	savery cours	0)	
				sone to	P 2 0		_
3			+ 2	1-31		190	1 -
4			-	waste-hun	edlumber, m sbottle, co	etal,	1 -
7-1-1			+	· · · · · · · · · · · · · · · · · · ·	11- Ho do	nanto	
5				wie, geas.	sporte, w	rocura	
			T	O			
6			+ T	D=3' bgs			_
_ —			F .		4 :		-
7			+m	ulti-vae	leading = 0	-	-
8			-		0		
							_
9			$\perp$				]
10			+				4
			-				-
11			+				
12			-				-
			+				7
13							
							]
14			-				_
15			-				4
15	1 1		-				4

			TES	T PIT FIELI	D LOG	TAGE 1 OF 1
	PAR	SONS	10	CLIENT:	TEST PIT NO.: M 12	TP18
PROJECT: LOCATION		MM nd fil	1 M12		JOB NUMBER: 7489  GROUND ELEV: INSPECTOR: 2.M9	310 Sonald
TEST PIT DAT	î A				CONTRACTOR: AWI	20
LENGTH	WIDTH	DEPTH	EXC	CAVATION METHOD	START DATE: ()92519	511229
le'	20"	41	mini-ex	cavator	COMPLETION DATE: 1)8251	3
GROUNDWAT	TER DATA				CHECKED BY:	
DATE / TIM	1E	11/	1	1//		
DEPTH TO	WATER	171	A/L		LOCATION SKETCH:	<b>†</b>
MONITORING	DATA					
INSTRUMEN	-	ETECTOR	BACKGROUND	TIME/DATE		1
	Cae Voc	110	Cal.	082515 0725		North
Plus	LE	coxy	passed	* **	30/29	
REMARKS:		U			NTS 90	7
	Is	SAMPLE	STRATA	SAMPI	LE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate
						D - Difficult
			-0-	- / (		-
			+ 1	in some		
2			L /e	scown sury	Sandy Joan	1
2			-	grass root	J () '	
3			F , '	151		1 1
			+ / -	1.0	ashlopal-weste	1 1
4				black sand-	sandy loam, ash/coal-wiste	1 1
				5-31		
5				, )	5	<u></u>
				orangish-pie	own silty sand,	
6			_ h	red, damp	J	
			1			
7				-4'		1 -
			F 4	greenish-gre	y silty sand	1 -
8			十か	ed, moist		1 1
9			F			1 1
1			十口	) = 4' bgs		1 1
10			1	()		
			m	ulti-sal read	ling=6	1 7
11						1 7
			T		0	]
12						
13		1				
			L			
14			+			-
15			_			-
15						1 4

	TES	ST PIT FIELI	OLOG	PAGE 1 OF
PARSO		CLIENT:	TEST PIT NO.: M/2	T019
PROJECT: FTV LOCATION: Lan	1M dfill M12		JOB NUMBER: 748 GROUND ELEV:	610 Donald
		CAVATION METHOD  X(a) a to	CONTRACTOR: AWT START DATE: 0825 COMPLETION DATE: 1825	515 1342
DATE / TIME DEPTH TO WATER MONITORING DATA	MA		LOCATION SKETCH:	1
INSTRUMENT DETECT  Multi-Rae VOC/CO  Plus LEL/OX  REMARKS:	111 4 2 2	082515/0725	- Fence	North
DEPTH (FT) VOC NO. DE	E STRATA	SAMPL	NTS LE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		-4' reddish-browned-fine, we nottled w/ da D=4' bgs No Waste nulti-val red	on silty sand, ll-sorted, damp, iker sand.	

	T	EST PIT FIELD	LOG	
PARS	ONS	CLIENT:	TEST PIT NO.: M	12TP20
	MM ndfill MIZ		JOB NUMBER:	48810
TEST DE DATA			INSPECTOR: KI	U4) onald
TEST PIT DATA  LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 095	2615/1202
Le' 2'		excavation method		321015
GROUNDWATER DATA	. 17/11/11 -	CAL M. CO.	CHECKED BY:	12013
DATE / TIME	1210			
DEPTH TO WATER	3.5'		LOCATION SKETCH:	<b>^</b>
MONITORING DATA			Jelle -	~
Multy-Pae VOC Plus 2tyle REMARKS: No Stake. I	Pit placement	d 082615/0945		North
Vegetation clea		CAMBLE	NTS )	EVCAVATION
DEPTH (FT) VOC NO.	DEPTH STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		olive brown si fine, well sorte 2'-4' wate-ash, w wood, black silty so wet, organian D=4' bgs multi-raeread	natter	l-el

	TEC	T PIT FIELD	LOC	PAGE 1 OF
PARSONS		CLIENT:	1	0215
PROJECT: FIM V LOCATION: Land t	1 511 M12	CELAT	JOB NUMBER: MI GROUND ELEV: INSPECTOR: 2	2 TP21
TEST PIT DATA  LENGTH WIDTH DEPTH  (0,5' 2' 4'	mini-2X	CA VA TO	CONTRACTOR: AW START DATE: 082	515/14/9 2515
GROUNDWATER DATA  DATE/TIME 1422		, , , , , , , , , , , , , , , , , , , ,	CHECKED BY:	
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  DETECTOR  MULTI-RAL VOC COH2S  PIWA  REMARKS:	BACKGROUND Cal. Passed	TIME/DATE 082515 07-25	LOCATION SKETCH:	North
DEPTH (FT) VOC NO. DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		silty sand, m sorted, dam inter-bedded noots in top D=4' bgs No Waste ulti-rae rea	ed. fine, well p to wet, brown t oran 18"	ge,

			7	TEST PIT FIELD	LOG	
	PAR	SONS		CLIENT:	TEST PIT NO.: M12 T	22
PROJECT:	F	TMM	1.		JOB NUMBER: 7499	10
LOCATION	:	andf	711 M	12	INSPECTOR: Q. 1/14	01
TEST PIT DAT	A	<del></del>			CONTRACTOR: AINT	onald
LENGTH	WIDTH	DEPTH		EXCAVATION METHOD		11152
5.51	18"	4'	mi	ni-excavator	COMPLETION DATE: 09,2015	
GROUNDWAT	ER DATA				CHECKED BY:	
DATE / TIM	E	Λ/	11	100		
DEPTH TO		/ V	17		LOCATION SKETCH:	1
MONITORING		TRATOR	D. OV.OD.	OLDUD THE COLUMN	- creek	
Multi-R	ae vocio		Cal. pa		The state of the s	North
Plus REMARKS:	LE	Joxy			- L	
TOWN HOLD.		3			NTS	
	S	AMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
	V00 N0	DEPTH				EFFORT
DEPTH (FT)	VOC NO.	DEFIN				E - Easy M - Moderate
						D - Difficult
				- 0-4'	on silty sand, sorted damp. gravel, wots top8"	-
1			-	- Manainl		1 -
2			1	- oungish sion	on silty sand	-
-			+	- tine-med well	- sorted Odamo	1 -
3			İ	- little pelobe-size	gravel water I com	1 7
			1	- No Was a	0 4,20015 1808"	
4						
				TD=4'bgs multi-raeread		
5			4	- malti-vacional	110-1	1 -
_ —			-	- Thurst racideal	17-0	1 -
6			+	-	9	1 +
7			F	<del>-</del>		1 -
'-			+	-		1 1
8				7		1 1
						1 7
9						
×						
10			_	-		
			-	-		1 4
11			+	-		
12			-	-		1 -
12			+	-		1 1
13				•		
			T	•		1 1
14			4	-		-
15						

			TE	ST PIT FIE	ELD LOG	The state of the s	TAGE 1 OF
	PAI	RSONS		CLIENT:	TEST PIT N	o.: M12T	P23
PROJECT:	. 7	FININ	1		JOB NUMBER:	7488	10
LOCATIO	-+	1 and F	11112		GROUND ELEV		10
	-				INSPECTOR:	R. My	onald
TEST PIT DA	TA				CONTRACTOR	ANT	,
LENGTH	WIDTH	DEPTH	<b>—</b>	CAVATION METHOD	START DATE:	082515	1430
5.51	18"	4	Minin	excavato	COMPLETION I	DATE: 082515	/
GROUNDWA		1432			CHECKED BY:	( <del> </del>	
DATE / TII		2.5			LOCATION SKE	TCH:	
MONITORING						TCII.	Ţ
INSTRUME		DETECTOR	BACKGROUND	TIME/DATE		T	
Multi-R	Lae Voc	1001H5	cal.	082515/07	25		North
Plu	s L	ELOXY	passed		Approximate Communication	fence	4.5
REMARKS:						NTS	
		SAMPLE	STRATA		SAMPLE DESCRIPTION	NIS	EXCAVATION
		T					EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate
		<b>-</b>					D - Difficult
1				1-4'			
			T	siltaca d	0+ -mad 100	Odiel bear	-
2				1 Sana,	M. Mes. Jua	104	7
			_ 4	amp to we	t, roots top	18;	
3			+	sand is f	ine-mad, we	ll-sorted	-
			- '	-,	J	0	-
"			+ *	lest pit ca	ving		-
5				No Weste	Itmed.red t, roots top ine-med, we ving		-
			T.	No voca a			
6			1	T 1(1			
			_ 1	D=4'bgs			
7	1		+	0	/ .		1 -
8			1 P	nulti-val u	eading= 8		1 -
° <del>1</del> = 1			-		J		1 -
9							
10							
			_				
11							1 -
12			-				-
12			+				
13			-				1 1
COALS							1
14			上				
15							

	TECT DIT BIEL	PAGE 1 OF	
	TEST PIT FIEL	in Log	
PARSONS	CLIENT:	TEST PIT NO.: M12 T24	
PROJECT: FTMM LOCATION: Land!	711 M12	JOB NUMBER: 748910  GROUND ELEV: INSPECTOR: R.M.D. Swald	_
TEST PIT DATA		CONTRACTOR: AWT	
LENGTH WIDTH DEPTH	EXCAVATION METHOD	START DATE: 082651138	_
le' 20" A'	mini-excavator	COMPLETION DATE: 082615	
GROUNDWATER DATA		CHECKED BY:	_
DATE/TIME 1140			
DEPTH TO WATER 4		LOCATION SKETCH:	
MONITORING DATA		creek	
Musti-Rae VOCICOH Plus LEJOXY REMARKS: Moved appre	BACKGROUND TIME/DATE  S COL. DASSED 082415/09  OX. 5'W. & Staked Loc.	-	1
		NTS	
U SAMPLE	STRATA SAM	PLE DESCRIPTION EXCAVATION	
DEPTH (FT) VOC NO. DEPTH		EFFORT E - Easy	
DEFINI(FI) VOC NO. DEFIN		M - Moderate	
		D - Difficult	
1	biononsi Hy s  loot zone  2'-4'  waste-ash,  glass both  4D=4' bgs  multi-vae ma	slag, coal	

	TEST PIT FIELD	D LOG	PAGE 1 OF
PARSONS	CLIENT:	TEST PIT NO.:	12TP25
PROJECT: FTMM LOCATION: Land	111 M/2	JOB NUMBER: 7 GROUND ELEV:	48810 44) onald
TEST PIT DATA  LENGTH WIDTH DEPTH  L 20" 4"  GROUNDWATER DATA  DATE / TIME 1439	EXCAVATION METHOD  mini-lacavator	CONTRACTOR: A V	NT 2515/1436 2515
DEPTH TO WATER 3.65  MONITORING DATA  INSTRUMENT DETECTOR  MULTI-PLA VOC CO H-S  PINA LEYCKY  REMARKS:	BACKGROUND TIME/DATE CAL DASSED 0825 5 0725	LOCATION SKETCH:	North
DEPTH (FT) VOC NO. DEPTH	STRATA SAMPI	LE DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1	- O-4' - alkbrown silt - 18", fine-me - some gravel: - damp to w - No Waste - TD=4' bgs - multi-rae read		to

			TE	ST PIT FIELI	LOG		TAGE 1 OF	_
	PAR	SONS		CLIENT:	TEST PIT NO.: /	112TP	26	
PROJECT:	FT	MM			JOB NUMBER: 7	48810	)	
LOCATION	v: La	ndfil	11M12		GROUND ELEV:			
					INSPECTOR:	. MyDor	rald	_
TEST PIT DAT	ΓA				CONTRACTOR:	tur	11,00	_
LENGTH	2.0 "	DEPTH 3.5		CAVATION METHOD		42615	1112+	-
GROUNDWAT	10	7,5	MINI-R	xeavator	CHECKED BY:	2 2095		-
DATE / TIM		1.	1 1	/1/	= CHECKED B1.			-
DEPTH TO	all the state of t	IV	A		LOCATION SKETCH:		4	7
MONITORING	DATA				- cuek	_		
INSTRUMEN	77	TECTOR	BACKGROUND	TIME/DATE		100	1	
Multin		(CO) H25	Cal-Dasses	082615 0945	17 *	MW18	North	
Plus	1 14	=4'0x4	-		<b>-</b>   4			
REMARKS:					NTS	*		
	S	AMPLE	STRATA	SAMPL	E DESCRIPTION		EXCAVATION	
						٢	EFFORT	
DEPTH (FT)	VOC NO.	DEPTH					E - Easy	
							M - Moderate D - Difficult	
			-0	-1.5'				
1								4
. —				2001 81 14y, 1	tandy our	L.		4
2			+ 5	nown silty, surface debi	is, wot son	e	-	+
3					8		-	1
			1/6	5'-3,5'				1
4				Inasten me	in al live			]
			- 0	wastezone lass bottles, i buned wood	unce har of		_	4
5			+ 7	plass bottles, i	MSC. Plastic	,	_	4
6			F "	burned wood	rusting met	al.	-	1
			+	damp to wet.	J		-	1
7							_	1
			LT	D=3,5'bgs			-	1
8			the second second		1:10 1-	1	-	1
0			- 1º	rulti-rae rea	aing=0		-	ł
-			+		O	1	-	1
10							-	1
11							_	-
12			-				_	1
12			+			1	-	ı
13								ı
-								
14								
			-				_	
15						1	_	

		TEST PIT FIELI	LOG	PAGE 1 OF
PARS	SONS	CLIENT:	TEST PIT NO.: M12TI	027
PROJECT: FT LOCATION: LA	MM ndfill h	112	JOB NUMBER: 7488  GROUND ELEV: INSPECTOR: R.M.Y.	10 Jonald
DATE / TIME DEPTH TO WATER MONITORING DATA INSTRUMENT DETECTOR BAC		EXCAVATION METHOD  AI - LK CAVA TOT  SROUND TIME/DATE  PASSED 082515/0725	CONTRACTOR: AM/Y START DATE: 082515 COMPLETION DATE: 0925 CHECKED BY:  LOCATION SKETCH:	11447
DEPTH (FT) VOC NO.	MPLE STRATA	SAMPL	E DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		brown silty, obsmall (se -0.8-4' tanto orang fine-med, well damp toxmo  TD=4' bgs multi-vae read	Sandy loam Cor 10" dia) pieces of asp e sitty sand, sorted, ist	yple half

			TES	T PIT	FIELD	LOG		PAGE 1 OF	_
	PAR	SONS		CLIENT:		TEST PIT NO.:	M12TP	28	_
PROJECT: LOCATION		MM	M12			JOB NUMBER: GROUND ELEV:	748810	2	-
						INSPECTOR:	R.MUDe	ruld	_
TEST PIT DAT	WIDTH	DEPTH	EVC	AVATION MET	HOD	CONTRACTOR: START DATE:	092615	11118	-
LENGTH 5.51	21	31	mini ex		нор	COMPLETION DATE	60 1	1110	_
GROUNDWAT	TER DATA		17.1111 Sext	acoutor.		CHECKED BY:	· vocals		-
DATE / TIM	1E	NI	1/						_
DEPTH TO	WATER	0.1	11		/	LOCATION SKETCH	k	· †	
MONITORING						- all			
Multi-R	ae vale	CO/H <sub>2</sub> S	Cal Dassed	092 Le 15	0945			North	
REMARKS:	I uc	10,9							
TEM HOLD.						NTS			_
	S	AMPLE	STRATA		SAMPLE D	DESCRIPTION		EXCAVATION	
	VOC NO.							EFFORT	
DEPTH (FT)	VOC NO.	DEPTH						E - Easy  M - Moderate  D - Difficult	
			-0-	1			***************************************		
1			+ 6	iown s	ilty, San	dy loam,	wat		+
2			F 3	one	J'		,	-	۲
		1	+ 0	/		· ·		-	1
3		1		-31				1 -	]
4			+ 1	DAZEC	0.1	1000 000	note	-	4
5			-	coa,	Mon,	slag, con	200	-	┨
,—			+	buck	_			-	1
6			T	=31bg	Λ			-	1
			TIL	)- J 12g				1 -	]
7			$\perp m$	ulti-va	e read	ing=D		_	1
		1	-			9		-	1
8		- 1	+					-	ł
9			-					-	1
									1
10			+					_	1
			-					_	ł
11			+					-	ł
12								-	1
			T					-	ı
13			T						
			-						
14			-					-	
15								_	

11			TEST PIT FIEL	LD LOG	PAGE 1 OF J
LOCATION:  LOCATION:  LOCATION:  LOCATION:  LOCATION:  ITST PIT DATA  LIENGTH WIDTH DEPTH EXCAVATION METHOD START DATE:  Q' 2' 3.55 Mini-DYCAVALD COMPLETION DATE:  DEPTH TO WATER  MONITORNO DATA  DEPTH TO WATER  MONITORNO DATA  DESTRUMBENT  DETECTOR:  BACKGROUND  IMBEDITE:  MULTI-PAR VOC/CO/Hy5 Cal Passe 0825/5/0725  PULA ITA/OXU  REMARKS:  SAMPLE STATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E. Bay M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  TP29 North  EXCAVATION EFFORT  E. Bay M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  M. Moderate D. Difficult  TD = 3,5' bys  M. Moderate D. Difficult  TD = 3,5' bys  Multi-Laeleading - O  Multi-Laeleading - O  Multi-Laeleading - O	PA	ARSONS	CLIENT:	TEST PIT NO.: M/2	TP29
LOCATION:  LOCATION:  LOCATION:  LOCATION:  LOCATION:  ITST PIT DATA  LIENGTH WIDTH DEPTH EXCAVATION METHOD START DATE:  Q' 2' 3.55 Mini-DYCAVALD COMPLETION DATE:  DEPTH TO WATER  MONITORNO DATA  DEPTH TO WATER  MONITORNO DATA  DESTRUMBENT  DETECTOR:  BACKGROUND  IMBEDITE:  MULTI-PAR VOC/CO/Hy5 Cal Passe 0825/5/0725  PULA ITA/OXU  REMARKS:  SAMPLE STATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E. Bay M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  TP29 North  EXCAVATION EFFORT  E. Bay M. Moderate D. Difficult  1  DOWN SI Hy Sandy loan, Location skercle  1-3.5' LOCATION SHETCH  M. Moderate D. Difficult  TD = 3,5' bys  M. Moderate D. Difficult  TD = 3,5' bys  Multi-Laeleading - O  Multi-Laeleading - O  Multi-Laeleading - O	PROJECT: #	FTMM		JOB NUMBER: 749	810
TEST PIT DATA  INNIT WIDTH DEPTH EXCAVATION METHOD  V' 2' 3.5 PA(NI-DACAVALD)  GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  MONITORNO DATA  DIRECTOR  BACKROUND TIMEDATE  PLA  PLA  PRAMES:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  BFORT  B-F-Bay  M-Machine D-Difficult  DEPTH 97) VOC NO DEPTH  DEPTH 97)  VOC NO DEPTH  TO DEPTH 97)  VOC NO DEPTH  DEPTH 97)  TO	-		412		
LENTH WIDTH DEPTH EXCAVATION METHOD START DATE  1 2 2 3.5 Mini-2xcava to COMPLETION DATE  DESCRIPTION WATER  MONTORNO DATA  DESCRIPTION  DEPTH TO WATER  MONTORNO DATA  DISTRIMENT  DETECTOR  BACKGROUND  TIMEDATE  MIN DAT PAR VOC LO H.S. CAR PASSE 062515/072.5  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH  DEPTH OVOC NO DEPTH			• • • • • • • • • • • • • • • • • • • •		
GROINDWATER DATA DATE TIME DEPTH TO WATER MONITORING DATA NITRUMNT DEFTH OF VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  ENCAVATION BETORT E-Easy M. Moderate D. Difficult  Depth of June  The Date of Sample Description  Excavation Betort E-Easy M. Moderate D. Difficult  Depth of June  The June	The second of the second of		Chebroso (Commissione) de la recepción por considera		
GROUNDWATER DATA  DATE TIME  DETHI TO WATER  MONITORING DATA  INSTRUMENT  MILETOR  SAMPLE  SAMPLE  STRATA  SAMPLE STRATA  DEFINITION  DEFINION  SAMPLE  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Easy  M. Moderate  D. Difficult  D. Difficult  D. Difficult  TD = 3, 5' bgs  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0  Multi-rae reading = 0					
DATE/TIME DEPTHITO WATER MONITORING DATA  INSTRUMENT DEFECTOR PLA PLA PLA PLA PLA PLA PLA PLA PLA PLA	<u> </u>		ni-excavago)	CONTROL OF THE PARTY OF THE PAR	2/5
MONITORING DATA  INSTRUMENT  INSTRUMENT  PILA  PILA  PILA  SAMPLE  STRATA  SAMPLE STRATA  DEFFINITION  BETORY		11111		- CHECKED DT.	
NSTRUMENT DETECTOR BACKGROUND TIMEDATE  MULTIPLE VOC CO 145 Cal passes 062515/0925  Plus Layory  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E- Easy  M. Moderate D. Difficult  1  Lower gone, concurte als unface  - 1-3,5'  waste - ash + slag, petioleum  oden(slight  - TD = 3,5' bgs  multi-rae reading - O  multi-rae reading - O	DEPTH TO WATER	NA		LOCATION SKETCH:	4
RETRIMENT DETECTOR BACKGROUND TIMEDATE  MIN OTT-Rae VOC 10 H5 Cal DASSE OB2515/0725  PLAN 12JORG  REMARKS:  NIS  SAMPLE STRATA SAMPLE DESCRIPTION EFFORT  E-FANY  M. Moderate D-Difficult  1	MONITORING DATA			+p27	
REMARKS:  SAMPLE STRATA  DEFTH (PT) VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EFFORT  E-Easy  M-Moderate  D-Difficult  Locat J  brown 5 ity sandy loan,  root zone, concrete absurface  -1-3.5'  waste-ash+slag, petroleum  oden (slight  TD=3,5' bgs  multi-rae reading=0  multi-rae reading=0			<del></del>	<b>—</b>	700
REMARKS:    SAMPLE   STRATA   SAMPLE DESCRIPTION   EXCAVATION   EFFORT			passed 082515/072	5	North
SAMPLE STRATA SAMPLE DESCRIPTION EXCAVATION EFFORT E. Easy M. Moderate D. Difficult  1	Market San San San San San San San San San San	LEYOXGI _			
DEPTH (PT) VOC NO. DEPTH  DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH (PT) VOC NO. DEPTH	REMARKS.	139		NTS	
DEPTH(PT) VOC NO. DEPTH    Depth(PT)   VOC NO. DEPTH		SAMPLE STRATA	SAM	IPLE DESCRIPTION	EXCAVATION
M. Moderate D. Difficult  1    Down Si Hy Sandy loan,   Loot zone, concrete als unface   1-3,5'     Waste - ash + slag, petroleum   oder(slight     TD = 3,5' bgs     multi-rae reading = 0  8  9  10  11  12					1 San April 2 - 10 San San San San San San San San San San
De Difficult  1	DEPTH (FT)   VOC   No	O. DEPTH			four interiors
brown si Hy sandy loam, root zone, conducte al surface  1'-3.5' Waste - ash + slag, petroleum oder (slight  TD = 3.5' bgs multi-rae reading = 5					1 1 2 2
brown si Hy sandy loam, root zone, conducte al surface  1'-3.5' Waste - ash + slag, petroleum oder (slight  TD = 3.5' bgs multi-rae reading = 5			in makel		_
6			1 0-471		4
6			- Mown sit	ty sandy loam,	-
6			+ continue co	nete Dsurface	1
6	3		- 1001301a, a		
6			-11-251		
6	4	-	+ waste-ash	+ stag sotioleum	J   -
6	5		- design 200.	0,1	-
6	3-1-1	-	- 0000 (8115m		1
	6		ITD=25/har		
			T 2,3 18 1	7.	
	7	1 -	- multi-ralie	ading = 0	1 1
		1 1	-	0	-
	°	-	+		1
11	9				1 1
11			<u>Kus</u>		
12	10	-	_		
12	.,		-		_
13	11	_	+		1 -
13	12				
			T.		
	13				
			_		
	14	-	+		-
	15				-

			PAGE 1 OF
	TEST PIT FIELD	) LOG	
PARSONS	CLIENT:	TEST PIT NO.: MIZTP	30
PROJECT: FTMM LOCATION: Land f	511 M12	JOB NUMBER: 74881 GROUND ELEV:	10
TEST PIT DATA	7	CONTRACTOR: AWT	onald
LENGTH   WIDTH   DEPTH	mini-excavator	START DATE: 092015  COMPLETION DATE: 092015  CHECKED BY:	- It - It - It - It - It - It - It - It
DATE/TIME 1100 DEPTH TO WATER 3.5'		LOCATION SKETCH:	
MONITORING DATA	4	- creek I	1
INSTRUMENT DETECTOR  Multi-Rae VOC/CO/H2S  Plus LELIOXY	BACKGROUND TIME/DATE  Cal. 0821015 0945  Passed	Pead Pead	North
REMARKS:		NTS [7TP3]	1
DEPTH (FI) VOC NO. DEPTH	STRATA SAMPLE	E DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	burned wood  - 0-1'  - 3,5'  - burned wood  - 03.5'  - black silty s  - wet, plastic o  - 10-3,5'bgs  - mwti-rae hadi	sand w/ clay,	

		-	TE	ST PIT FIE	CLD I		PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: MIZTP	31
PROJECT:	F	MM				JOB NUMBER: 740810	)
LOCATION	La	indfil	1 M12			GROUND ELEV:	
						INSPECTOR: R.MCI)	nald
TEST PIT DAT		T				CONTRACTOR: AUT	-11-10
LENGTH 5.5	WIDTH	DEPTH		xcavation method		START DATE: 08265 COMPLETION DATE: 08265	
GROUNDWAT	10		minis	reavair.		CHECKED BY:	
DATE / TIM		1015				<del></del>	
DEPTH TO V	WATER	41				LOCATION SKETCH:	<b>↑</b>
MONITORING	DATA						
INSTRUMEN		ETECTOR	BACKGROUND	11	1-	\$ 2	1
Multi-R		CO/H25	cal passa	082615 09.	45	Land Drive	North
REMARKS:	0   2	eg org					
						NTS	
	S	SAMPLE	STRATA	S	SAMPLE DE	ESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy  M - Moderate
							D - Difficult
			- 1	0-0.51			_
1			+ "	LIDIDA DE LE	2.0.	15. 10.11.0	-
2			-	Brown Sanc	ny to	ram, some graves	-
-			+0.	5'-2'	0	ram, some gravel h, coal, slag	-
3				Waste zone	-asi	h, coal, slage	
				0			_
4				-4'		O	_
5			_			1	-
3-1-1			+	black Silte	San	d, some clay,	-
6				moist tou	De +	Injuter @	7
			T				J
7				bottom of	pit.		_
			-	U	1		-
8			十十	D=41/290			4
9		1		/\	1 -		7
		1	$T_r$	nulti-rae re	adib	9=0	]
10	1 1					()	1
			-				4
11			+				
12			F				
			T				1
13			$\perp$				]
14			+				_
15			F				$\dashv$
-	1 1	- 1	-				-

				TE	ST PIT FIE	LD	LOG	PAGE 1 OF
		PAR	SONS		CLIENT:		TEST PIT NO.: M 12 TF	32
PROJECT:	:	FT	MM			***********	JOB NUMBER: 74881	0
LOCATIO	N:		nd fil	1412			GROUND ELEV:	0
							INSPECTOR: P.W4)0	nald
TEST PIT DA	1	DTU	DEBEH	FY	CAVATION METHOD		CONTRACTOR: AWI START DATE: 0820151	1750
LENGTH -7	3	DTH /	DEPTH		excavation method		START DATE: 002015	1230
GROUNDWA	TER DA	TA		1 /: // /	ence apre		CHECKED BY:	
DATE / TI	ME		1255					
DEPTH TO	WATER	1	3.01				LOCATION SKETCH	1
MONITORING			TEGTOR	D. OV CD OV D.D.	TIN AT A TE		0.7	P.30
Multi			COD HOS	COUL.	OBZLEIS/09	45	TP2938 323 43	North
Plu	-		loxu	passed	00-21-101		H	\$
REMARKS:			1 1					Co.
		c	AMPLE	STRATA		AMDI E I	NTS DESCRIPTION	EXCAVATION
		3/	AMPLE	SIRAIA	3	AMP LE L	DESCRIPTION	EFFORT
DEPTH (FT)	voc	NO.	DEPTH					E - Easy
								M - Moderate D - Difficult
T				- 6				D - Difficult
1				T	-1'			
				- /	brown silty	Sas	rdy loam, wit	-
2				+	zone		() Test	-
3								_
				1/	-4'			
4		- 1			waste - an	ha	erl, slag	_
5				-	900	,,	1	_
3		- 1		+ +	D=4'bgs		J	-
6		1	1		/1			
				- n	nulti-rae re	ad	ing = A	_
7				+				-
8				F			J	-
9			1					
			1	-				-
10				+				-
11			1	-				-
				T				
12				1				
				-				-
13				+				-
14				-				-
								]
15								

			·	7	TES	T PIT I	FIELD	LOG		PAGE 1 OF 1	
		PAR	SONS			CLIENT:		TEST PIT NO.:	MIZT.	P33	
PROJECT:	:	FT	MM					JOB NUMBER:	748810		-
LOCATIO			ndfil	1 112	_			GROUND ELEV:	7 107/10	W. 18	_
								INSPECTOR:	R.M.Da	nald	_
TEST PIT DA	TA	42	T-					CONTRACTOR:	AWT,		
LENGTH		DTH O 11	DEPTH 41	iaa'		AVATION METHO	)D	START DATE:		0827	_
			1 4	MINI	exc	avato		COMPLETION DATE	082715		_
GROUNDWA'  DATE / TII		MA	0030		T			CHECKED BY:	Bo 1 12 12 14 16 2 1		
<b>ДЕРТН ТО</b>		R	3'					LOCATION SKETCH		_	
MONITORING	G DATA	(						- cu	ele-		
INSTRUME	ENT	DE	ETECTOR	BACKGRO	UND	TIME/D	ATE	l t	7		
Multi-R	al		Colt/25	cal. po	5880	082715/	0730	<u> </u>	1	North	
Plu	0	Le	HOXY	( ->->->				Į	· MWZ	.[	
REMARKS: (	OC.	not	Stakes	PPPL	acei	nent base	rel on	NTS	.591		
F	1 1110	,	AMPLE	STRATA			SAMPLE D	DESCRIPTION		EXCAVATION	
										EFFORT	
DEPTH (FT)	voc	NO.	DEPTH							E - Easy	
										M - Moderate D - Difficult	
									37-1	D-Difficult	$\dashv$
1			4	t	0-	-1.5'					+
				1	0	rangis	h bron	on silte se	and a		٦
2					1,0	las a de la	/ polalal	on silty sa size, med-			
				L	,	year or eq	people.	size), med.	fine,		
3	l			1	M	oot zone			,		4
, —				-							4
4				-	1.5	-4'					+
5		1				mainch.	0100 00	:11. /	Λ		$\dashv$
				-	1		guens,	iltysand, vicinattes	med.		7
6	1				d	ecaying	Vorgan	icmatter	, ,		1
						0 (	) 0				]
7	1		1	4							
				-	TD	=4' bg.	1				$\perp$
8				+		. 0	1.			:	+
9				F	mi	noti-vae	readin	8-0			+
1				- +				0			+
10											7
	1										
11	1										
				_							4
12		att.		- 4						,	+
12				F							-
13				+						F.	$\dashv$
14											1
				T							
15											]

			-	TEST PIT FIELI	LOG	PAGE 1 OF
	PAF	SONS		CLIENT:	TEST PIT NO.: 112T	P34
PROJECT:	F	ПИМ			JOB NUMBER: 7498	
LOCATIO	N: 10	indfi	11 111	2	GROUND ELEV:	
TECT NET DAY						onald
LENGTH	WIDTH	DEPTH	Г	EXCAVATION METHOD	START DATE: 129.27	15/1321
7	20"	4.51	mi	ni-excavator	COMPLETION DATE: 08271	
GROUNDWA'	TER DATA				CHECKED BY:	
DATE / TIM		I N	11	11	•	
DEPTH TO			1		LOCATION SKETCH:	<b>↑</b>
MONITORING		ETECTOR	BACKGRO	OUND TIME/DATE	- OTP29	
Multi-K		1001H2S	Cal. De		32,5	North
Plu		ZOXY	1		7	° TP32
REMARKS:		1			NTS TP34	
		SAMPLE	STRATA	SAMPL	E DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
				-0-1.5'		
1			_	- 1	ndy loam, dry, iootzon	_
			}	- prown Silysa	Lay roam, not son	–
2			-	- Aone grows	, asig, see go.	-
3				1. 0		•
			T	waste-slag	ruconitic?) sano	
4			-	- blue-green (ab	auconitic?) 1ano	/   -
5			-	- @ N and	t.	_
3			+	- w with of p	u.	-
6				TD=4.5 bgs		
				_ ()	1.	
7			+	- multi-rae nea	ding:0	_
8			-	-	0	-
°-			-	-		
9				-		
			_	-		
10			+	-		-
11			-	•		-
.,				•		1 1
12						
				•	,	
13			_	•		
14			-			1 -
			+			
15						

		TES	T PIT FIELD	LOG	PAGE 1 OF
PAR	SONS		CLIENT:	TEST PIT NO.: M12TA	35
	TMM ndfill	1412		JOB NUMBER: 74881  GROUND ELEV: INSPECTOR: R. M.45	
TEST PIT DATA  LENGTH WIDTH  7 3'  GROUNDWATER DATA  DATE / TIME	DEPTH 4'		avation method (can ato)	CONTRACTOR: ANT T START DATE: O9 27 15 CHECKED BY:	5/1400
DEPTH TO WATER  MONITORING DATA  INSTRUMENT DE  MULTI-RAL VOC	TECTOR	BACKGROUND Cell. Passes	TIME/DATE 082715   0730	LOCATION SKETCH:  TP34  16  16  1736  TP35  TP35  NTS	North
DEPTH (FT) VOC NO.	AMPLE DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		+ 1'	nown silty, some gravel,	Sandy loam, dry loot zone low, concrete Ho 18 lpipe, wire,	

			TE	ST PIT FIE	LD LOG		PAGE 1 OF
	PAF	RSONS		CLIENT:	TEST PIT	No.: M127	P36
PROJECT:	F	TIMM			JOB NUMBE	R: 748810	2
LOCATION			11 M12		GROUND EI	EV:	
					INSPECTOR	R. 1990	mald
TEST PIT DAT			T		CONTRACTO	30.0	11110
LENGTH	WIDTH	DEPTH 41		XCAVATION METHOD	START DAT	10201-	5/14/2
GROUNDWAT	U	4	mira	excavator	COMPLETIO CHECKED B	1	,
DATE / TIN		1415			enecked b		
DEPTH TO	WATER	4			LOCATION S	KETCH:	<b>†</b>
MONITORING	DATA					°TP35	
INSTRUME		ETECTOR	BACKGROUND	TIME/DATE	. 05	Prey 571	1
Mulj-r		100/H25	cal passe	0827 15/073	D P	Pie 1571	North
PIW	LE	yexy			47'	17736	
REMARKS:					HWI	NTS	_
		SAMPLE	STRATA	SA	MPLE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
			- 0	-0.8'			_
1			+ 0	-0.8	1 1	10.	_
			-	brown silt	y Sandy I	oram, some	-
2			+	gravel	O		-
3							_
			丁0.	8'-4'			
4				orangish b Fine - med, o	rown sil	ty sand.	_
			- /	. 0 1.	11 1 - to 1	()	-
5			+ +	The - med, u	sell-sor led		-
6			F .	1			-
<u> </u>			+ V	lo Waste			1 7
7							
			- 7	D=4'baA			
8			+ '	D=4'bgs nulti-rae rec			1 4
9			- A	rulti-rae le	ading = 4	7	1 -
,			- +		Λ -		1 -
10					0		
			T				
11			_				
			-				-
12			+				1 -
13							1
14			工				]
			_				
15							

			TE	ST PIT FII	ELD I	LOG	PAGE 1 OF
# ## 1 N	PAR	SONS		CLIENT:		TEST PIT NO.: MIZT	737
PROJECT: LOCATION:	F7	TY M und f	iil 1412			JOB NUMBER: 7488 GROUND ELEV:	1
TEGET NET DATA						INSPECTOR: R.M.C.	onald
LENGTH W	/IDTH	DEPTH	FX	CAVATION METHOD		CONTRACTOR: AWT START DATE: U827 13	5/1422
	51	4'		excavator		COMPLETION DATE: 05271	5
GROUNDWATER D	ATA					CHECKED BY:	
DATE / TIME		1425					
DEPTH TO WATE	ER	351	<u>LL</u>			LOCATION SKETCH;	<b>↑</b>
MONITORING DATA			Name to Liver the Control of Control of Control			coney	
INSTRUMENT		TECTOR	BACKGROUND	082715/0=	23/1	OSPROU	North
Multi-Rae Plus	LEL	C/CO/Hi	passed	082713/0-	180	# 1P37	North
REMARKS:		100				OSP poil TP37 TP36 471 NTS	
	SA	AMPLE	STRATA	2017 134 1	SAMPLE DE	ESCRIPTION	EXCAVATION
DEPTH (FT) VOC	NO.	DEPTH					EFFORT E - Easy M - Moderate D - Difficult
1				brown silt  4'  brangish-  and, med-  loose (car  Vo Waste  )= 4' bgs  ulti-rae  ulti-rae	brown fine, ves la	n to tan silty, well-sorted, sily)	

	e de la Particio de la Companya de l		TE	ST PIT FIEL	D LOG	TAGE 1 OF V
	PAF	SONS		CLIENT:	TEST PIT NO.:	12 TP39
PROJECT:	F	MM			JOB NUMBER: 7	48810
LOCATION	1		711 MI	2	GROUND ELEV:	
					inspector: 2	.M. Donald
TEST PIT DAT	ТА				CONTRACTOR:	twT.
LENGTH	WIDTH	DEPTH		XCAVATION METHOD	START DATE:	1807 15 1440
le 1	2,51	41	mint-	excavator	COMPLETION DATE:	82715
GROUNDWAT		1442	T T		CHECKED BY:	
DATE / TIN	24-84-	3.5			LOCATION SKETCH:	
MONITORING		J, 3			EGC/MIGIN SALITON.	Ī
INSTRUME		ETECTOR	BACKGROUND	TIME/DATE	T 1/2' Y	7
Musti-R	lae Voc	100/H25	cal. pass	ed 092715/073		(TD29) North
Plus	1 LE	LIOXY			TP35	11.00
REMARKS:		' /			NTS (	TP37
		SAMPLE	CTRATA	CAM	PLE DESCRIPTION	EXCAVATION
		SAMPLE	STRATA	SAW	FLE DESCRIPTION	EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate
- r		<del> </del>				D - Difficult
1			-6	-0.8'		1 -
1			+	byown silly	sande la	-
2				dre son	3 con a grand	7) -
			T	tory, storice	graved	
3				18-41	, ,	
			L	waste-ash.	sandy loam gravel burned wood, coal	_
4			+	alan bottle	coal	-
5				Jacobs 130114,		-
3			+	O .		-
6				anwara ta tah		-
			TT	D= 4' bgs		
7			-			
			L m	ulti-ral lea	ding: 0	_
8					1	-
			-		0	
9			-			1 1
10			H			1 7
						1 7
11						
		1	_			
12		1	_			
			-			-
13			+			-
14			-			-
			-			-
15						

			TI	EST PIT FIELD	LOG	TAGE T OF
	PA	RSONS		CLIENT:	TEST PIT NO.: M12	TP39
PROJECT	: F	THM			JOB NUMBER: 7488	510
LOCATIO			ill M12		GROUND ELEV:	
5-4-4-5					INSPECTOR: R.M9	Sorred
TEST PIT DA	TA				CONTRACTOR: AWT	
LENGTH	WIDTH			EXCAVATION METHOD	START DATE: 0828/	5/0925
5.5'	20"	31	mini-	excauctor	COMPLETION DATE: 0828	5'
GROUNDWA		-	111		CHECKED BY:	
DATE / TIL		1	HAX		LOCATION SKETCH:	
MONITORING			. /		I IP27	1
INSTRUME		DETECTOR	BACKGROUN	D TIME/DATE		
Multi-Ra		cloolths	Cal. Dasse		48'	North
Plus		EYOXY			777739	
REMARKS:		- 1				
	Т	201000000		CAN IN T	NTS	THE CALL THOU
		SAMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT)	VOC NO	. DEPTH				E - Easy
DEI III (I I)	100 110					M - Moderate
						D - Difficult
	-		-	1 1 1		_
1	1		+ '	0-0.5'		-
2	1			brown 81 lty	Sandy 1	-
-	1		+	)	10am	
3				9.5-1.0	O	
				Waste-ash	Mag no O	
4				000.117.	Sandy loam Slag, coal 1sh-brown silty	_
			-/	.0-30'	O	-
5			+'		is 1 on silter	1 4
6			-	tan to orang	ish- mown siry	1 -
*+				sand, fine med,	loose, canes	
7				3.6.4.		
				easily		
8			+	N = 24		1
	1		۱ - ۱	D=376gs		1 -
9	- 1		- +	. 0/:		1 +
10			F /	nulti-rae read	inex=0	1 1
					0	1 7
11						
12			1 -			
,,	/		H			-
13			+			
14			-			
			_			
15			上			]

		TEST	F PIT FIELD	LOG	1302 1 01
PAR	SONS		CLIENT:	TEST PIT NO.: 1412T	P40
	MM and Fill 1	112		JOB NUMBER: 7490  GROUND ELEV: INSPECTOR: R. M. G.	2010 Donald
TEST PIT DATA		44		CONTRACTOR: A11/T	-
LENGTH WIDTH	DEPTH	EXCAV	VATION METHOD	START DATE: 0928	5/09310
61 21	4 V	nini-la	cavator	COMPLETION DATE: 0828	151
GROUNDWATER DATA				CHECKED BY:	
DATE / TIME	0938				
DEPTH TO WATER	3,5'			LOCATION SKETCH:	<b>†</b>
MONITORING DATA				STP Z F	
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item ittis.				NTS	
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			TES	ST PIT FI	ELD	LOG		PAGE 1 UF	
	PAR	SONS		CLIENT:		TEST PIT NO.:	112TP	41	
PROJECT:	F1	74 M					18810		
LOCATION:			11 1414			GROUND ELEV:			
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DATE/TIME		1 4/	1.						
DEPTH TO WA	TER	M/	A			LOCATION SKETCH:		<b>†</b>	
MONITORING DA	TA								
INSTRUMENT		TECTOR	BACKGROUND	TIME/DATE			177041		
Multi-Rag		co/H25	Cal. Passes	1 690315/0	730	51	.11	North	1
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								D - Difficult	
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6' 20"	51	mini-exava	ton	7	70315
GROUNDWATER DATA	<del>                                     </del>	. 14		CHECKED BY:	
DATE / TIME DEPTH TO WATER	NA	11/	1/1/	LOCATION SKETCH:	
MONITORING DATA	11171			18410 SQ1	1
	TECTOR BAG	CKGROUND	TIME/DATE	760'	
4:	7 7		315/0730	7	North
	Yoxy		7	Make line STP42	
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DEPTH (FT) VOC NO.	DEPTH				EFFORT E - Easy
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					D - Difficult
1		-3.5-5 - green - med - @5' - wast	dish brown A ish gey sil e-burned	ilty said, fin	

13				TES	ST PIT	T FIELD	LOG		PAGE 1 OF
PROJECT: LOCATION:  FTM LOCATION:  LOCATION:  LEARCH WIDTH LEARCH WIDTH STAFF DATA  CONTRACTOR:  STAFF DATA  CHECKED BY:		PAF	SONS		CLIENT:		TEST PIT NO.:	M12 TP4	13
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GROUNDWATER DATA  GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  MONITORING DATA  REMARKS:  SAMPLE  STRATA  SAMPLE DESCRIPTION  SAMPLE STRATA  DEPTH OFT)  VOC  NO  DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E - Bay  A- Moderate  D- Difficult  1  - 0 - 1'  - 1- 2'  - 5AA, Greenish  - 2' - 4'  Waste - Ash, Coal, Slag  - Multi-val leading: 6  - 10  - 11  - 11  - 12  - 13  - 14 bgs  - multi-val leading: 6  - 11  - 12  - 13  - 14  - 15  - 15  - 16  - 17  - 18  - 18  - 19  - 1	TEST PIT DATA	A		,			CONTRACTOR:		
GROUNDWATER DATA  DATE TIME  DETH TO WATER  MONITORING DATA  INSTRUMENT  DETECTOR  EACKGROUND  INDIPOTATE  MULTI-Rae  VOC (1 Ht/5)  VOC  NO.  DEPTH  SAMPLE  STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E-Bay  M. Moderate  D-Difficult  1  - 0 - 1'  - 1'  - 1'  - 2'  - 5AA, guenish  - 2' - 4'  - Waote - Ash, coal, slag  - 10  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 10  - 11  - 11  - 11  - 12  - 10  - 11  - 10  - 11  - 10  - 11  -							-1	6	
DATE / TIME  DEPTH TO WATER  MONITORING DATA  BISTRIMENT  DEPTH  MILITIFARE VOICE HAS RECORDING  PULL  SAMPLE STRATA  BEFFINGT)  VOC  NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E- Easy  M. Moderate  D. Difficult  1			14.	mini-ex	cavat	07	7	090315	
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  DETECTOR  BACKGROUND  TIMEDATE  MULTI-Race VOC/Co/H25 Cel. passed 0903/5/0730  Plus  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E - Easy  M. Moderate  D- D- Difficult  1			-	1 . 0			CHECKED BY:		
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REMARKS:    SAMPLE   STRATA   SAMPLE DESCRIPTION   EXCAVATION   EFFORT   E. E. Bay   M. Moderate   D. Difficult	INSTRUMENT	r Di	ETECTOR	BACKGROUND	TI	ME/DATE		1542	
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DEFINITION VOC NO. DEFTH  DEFINITION VOC NO. DEFTH  1	REMARKS:						NTS		
DEFTH(PT) VOC NO. DEFTH  DEFTH(PT) VOC NO. DEFTH			SAMPLE	STRATA		SAMPLE D	DESCRIPTION		EXCAVATION
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tan silty sand, dry loose,  some granel  1'- 2'  SAA, greenish  2'- 4'  Waste-Ash, coal, slag  multi-val reading: 0  multi-val reading: 0									
tan silty sand, dry loose,  some granel  1'- 2'  SAA, greenish  2'- 4'  Waste-Ash, coal, slag  multi-val reading: 0  multi-val reading: 0				Lo.	-1'				
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5				T 3	SAA, O	greenish			
Waste-Ash, coal, slag  TD = 4' bgs  multi-ral reading: 0	4					9			_
Waste-Ash, coal, slag  TD = 4' logs  multi-ral reading 0  multi-ral reading 12  13  14	,			- 2.	-4'				-
7	3-1-1			+ 2	lasto -	Ash Cha	l Maa		-
8	6			- 1	, wa	Man, coo	, sing		
8 — TD = 4' kgs - multi-ral leading D  10 — 11 — 12 — 13 — 14 — 14 — 15 — 16 — 17 — 18 — 18 — 19 — 19 — 19 — 19 — 19 — 19					*		O		]
9 — multi-ral leading: 0  10 — 11 — 12 — 13 — 14 — — — — — — — — — — — — — — — — —	7			+					_
9 — multi-val leading: 0  10 — 11 — 12 — 13 — 14 — — — — — — — — — — — — — — — — —	,			-11	) = 4 b	95			-
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	TES	T PIT FIEL	LD LOG	PAGE 1 OF
ISONS		CLIENT:	TEST PIT NO.: M12TP	44
UIU				
ndfill	MIZ		GROUND ELEV:	
			INSPECTOR: R.M.Y.O.	nald
	r		CONTRACTOR: AWT	/
			1	
1 7.5	mni-ex	cavaro		
1 1	1. 1	10	ONDONES ST.	
IVI	AM		LOCATION SKETCH:	<b>†</b>
			·5G2	
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1,1	Cal. Dassed	0903\$5/073	861	North
EYOXY 1			\	
•			NTS TP44	
AMPLE	STRATA	SAM	PLE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH				E - Easy
				M - Moderate D - Difficult
	1.5 - 3'-	tan silty s. little gravel  -3'  AA, greenis  4.5'  Naste-ash aper, cans	h, conf, slag,	
	DEPTH 4.5"  COLLAS  COLLAS  CAMPLE	DEPTH EXC 4.5" MINI-EX ETECTOR BACKGROUND LCO/HS CAL PASSED ELYOXY  SAMPLE STRATA  DEPTH  CO  1.5  3'-  1.5	DEPTH EXCAVATION METHOD  4.5" Mini excavator  ETECTOR BACKGROUND TIME/DATE  1/co/Hs Cal passed 0903\$5 073.  ELYOXY  EARLY STRATA  DEPTH  - 0-1.5' - tan silty silthe gravel  1.5-3' - SAA, greenis  3'-4.5' - Waste-ash - paper, Cana - TD = 4.5'bgs	TEST PIT NO.: M12 TP  MIM  Adfill M12  GROUND ELEV: INSPECTOR:  DEPTH EXCAVATION METHOD  4.5 Mini excavator  COMPLETION DATE:  OP0315  CHECKED BY:  LOCATION SKETCH:  ETECTOR BACKGROUND TIME/DATE  LOCATION SKETCH:  ETECTOR BACKGROUND TIME/DATE  LOCATION SKETCH:  SAMPLE STRATA  SAMPLE DESCRIPTION  DEPTH  - 0-1.5'  - tan silty sand t gravel, dry,  little gravel  1.5-3'  SAA, greenish  3'-4.5'  Waste-ash, conf, slag,  paper, cans, etc.

T		TES	T PIT FIELD	LOG	PAGE 1 OF
	PARSONS		CLIENT:	TEST PIT NO.: M12 T	P48
PROJECT: LOCATION:	FTMM Landfill	M12		JOB NUMBER: 7498 GROUND ELEV:	***
	DTH DEPTH		AVATION METHOD	CONTRACTOR: AWT	5/1138
GROUNDWATER DA	0"   3.51	mini-e	xcavator	CHECKED BY:	5'
DATE / TIME DEPTH TO WATER MONITORING DATA		A		LOCATION SKETCH:	1
INSTRUMENT MULTI-RAR Plus REMARKS:	DETECTOR VOC/CO/HS IEYOXY	BACKGROUND Cal. phssed	096315 0730	593 51	North
	SAMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT) VOC	NO. DEPTH				E - Easy M - Moderate D - Difficult
1		- 1.5 - 1.5 - 1.5	1-3,5 lk. brown sil		mel,

# APPENDIX G FTMM-14: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

# APPENDIX G: FTMM-14 Landfill Boundary Refinement and Methane Gas Survey Results

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1.0	TEST PIT DELINEATION SUMMARY	G-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	G-1
3.0	REFERENCES	G-2

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Table No.	<u>Title</u>
G1 G2	Landfill Boundary Refinement Summary Methane Gas Survey Results

### LIST OF FIGURES

Figure No.	<u>Title</u>
G1	Landfill Boundary Refinement and Methane Gas Survey Results

### LIST OF ATTACHMENTS

Attachment	Title
G-A	Test Pit Logs

### 1.0 TEST PIT DELINEATION SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries are discussed in further detail in the Remedial Investigation Report for FTMM-14 (Parsons, 2015). These changes are reflected on **Figure G1**. In addition, the RI report identified data gaps in the landfill boundaries, specifically near test pits 3E, 4D, 6C, and 7C. Subsequent to the preparation of the RI Report for FTMM-14, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. None of the historical test pits that contain landfill solid waste (e.g., debris) were recategorized.

Test pits during the landfill boundary refinement were initially advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report (Parsons, 2015). To form a more comprehensive view of the landfill, additional test pits were performed in other areas of the landfill including in the areas of historical test pits 3E, 4D, 6C, and 7C in the northern area of the landfill to confirm the contents and categorization of those historical test pits. Test pits were advanced at 31 locations at FTMM-14 as part of the landfill refinement activities on August 24, 25, 27, and 31, and September 3, 2015. Historical and the 2015 test pit locations are shown in **Figure G1**.

Logs for the test pits excavated in 2015 are provided in **Attachment G-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table G1**.

Observations of the 2015 test pits along the southern boundary adjacent to Husky Brook contained solid waste (M14TP4, M14TP5, M14TP8, M14TP11, M14TP13, M14TP18, and M14TP20) such as ash, coal, glass, and concrete indicative of a landfill. Other test pits did not contain landfill solid waste (M14TP2, M14TP9, and M14TP15). Landfill solid waste, when present in the test pits performed near historical test pits 3E, 4D, 6C, and 7C, was consistent with observations recorded on the historical test pits logs. Based on the contents of the historical and 2015 test pits, the landfill boundaries were not changed.

**Figure G1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of 16 landfill gas readings (including one QA/QC sample) were measured at 15 soil gas locations at FTMM-14 as part of the methane gas survey. Sampling was conducted on July 29 30, and 31, 2015. Methane was detected at four locations (M14SG4, M14SG7, M14SG8, and M14SG9), and two of these locations (M14SG4 and M14SG9) had concentrations that exceeded 25 percent of the methane LEL. These two locations are located on the interior of the landfill. The five step out locations (M14SG11, M14SG12, M14SG13, M14SG14, and M14SG15) were measured based on these methane detections. Soil gas locations on the perimeter of the landfill (including step outs) did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-14. The collective methane results indicate the area within the landfill where methane was found above 25 percent of the LEL is very

limited. The methane detections are most likely attributed to methane gas generating conditions at the landfill. The landfill gas readings are summarized in **Table G2.** The soil gas sampling locations and the locations where landfill gas exceeded 25 percent of the LEL are provided in **Figure G1**.

#### 3.0 REFERENCES

Parsons. Remedial Investigation Report for Site FTMM-14, Fort Monmouth, Oceanport, Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and Support Center, Huntsville, Alabama. July 2015.

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

# **TABLES**

Table G1 Landfill Boundary Refinement Summary

Table G2 Methane Gas Survey Results

#### Table G1 Landfill Boundary Refinement Summary Site FTMM-14

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M14TP2	N	3	No solid waste observed; not landfill.
M14TP3	N	3	No solid waste observed; not landfill.
M14TP4	Y	1	Solid waste including ash, glass bottles, coal, burned wood indicative of landfill.
M14TP5	Y	1	Solid waste including ash, coal indicative of landfill.
M14TP6	N	3	No solid waste observed; not landfill.
M14TP7	N	3	No solid waste observed; not landfill.
M14TP8	Y	1	Solid waste including Ash, coal, broken glass indicative of landfill.
M14TP9	N	3	No solid waste observed; not landfill.
M14TP10	N	2	Debris of de minimus quantity; not landfill.
M14TP11	Y	1	Solid waste including ash, burned wood, rusting metal, broken glass, shoe sole indicative of landfill.
M14TP12	N	3	No solid waste observed; not landfill.
M14TP13	Y	1	Solid waste including ash, fabric, terracotta tile, coal, rusting metal indicative of landfill.
M14TP14	N	2	Debris of de minimus quantity; not landfill.
M14TP15	N	3	No solid waste observed; not landfill.
M14TP16	Y	1	Solid waste including lumber indicative of landfill.
M14TP17	N	2	Debris of de minimus quantity; not landfill.
M14TP18	Y	1	Solid waste including concrete indicative of landfill.
M14TP19	N	3	No solid waste observed; not landfill.
M14TP20	Y	1	Solid waste including asphalt, concrete indicative of landfill.
M14TP21	N	2	Debris of de minimus quantity; not landfill.
M14TP22	N	3	No solid waste observed; not landfill.
M14TP23	Y	1	Solid waste including slag, concrete, brick, metal wire, concrete indicative of landfill.
M14TP24	N	3	No solid waste observed; not landfill.
M14TP25	Y	1	Solid waste including concrete indicative of landfill.
M14TP26	N	2	Debris of de minimus quantity; not landfill.
M14TP27	N	3	No solid waste observed; not landfill.
M14TP28	N	3	No solid waste observed; not landfill.
M14TP29	N	3	No solid waste observed; not landfill.
M14TP30	Y	1	Solid waste including concrete, ash, coal, concrete indicative of landfill.
M14TP31	N	3	No solid waste observed; not landfill.
M14TP32	Y	1	Solid waste including ash, coal, slag indicative of landfill.

#### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

### Table G2 Methane Gas Survey Results Site FTMM-14

### Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M14SG1	7/30/2015	0.0	0.0	5.7	16.7	
M14SG2	7/29/2015	0.0	0.0	1.1	20.2	
M14SG3	7/30/2015	0.0	0.0	0.1	21.1	
M14SG4	7/30/2015	21.4	OOR	22.4	2.7	
M14SG5	7/30/2015	0.0	0.0	0.0	21.2	
M14SG6	7/29/2015	0.0	0.0	0.0	21.2	
M14SG7	7/29/2015	0.3	6.0	0.2	20.9	
M14SG8	7/30/2015	1.0	20.0	3.2	14.9	
M14SG8QA	7/30/2015	0.6	18.0	3.3	15.1	
M14SG9	7/29/2015	7.8	OOR	3.2	17.9	
M14SG10	7/30/2015	0.0	0.0	0.1	21.1	
M14SG11	7/31/2015	0.0	0.0	0	20.4	Step out
M14SG12	7/31/2015	0.0	0.0	2.4	19.2	Step out
M14SG13	7/31/2015	0.0	0.0	1.5	20.1	Step out
M14SG14	7/31/2015	0.0	0.0	1.1	19.9	Step out
M14SG15	7/31/2015	0.0	0.0	0	20.6	Step out

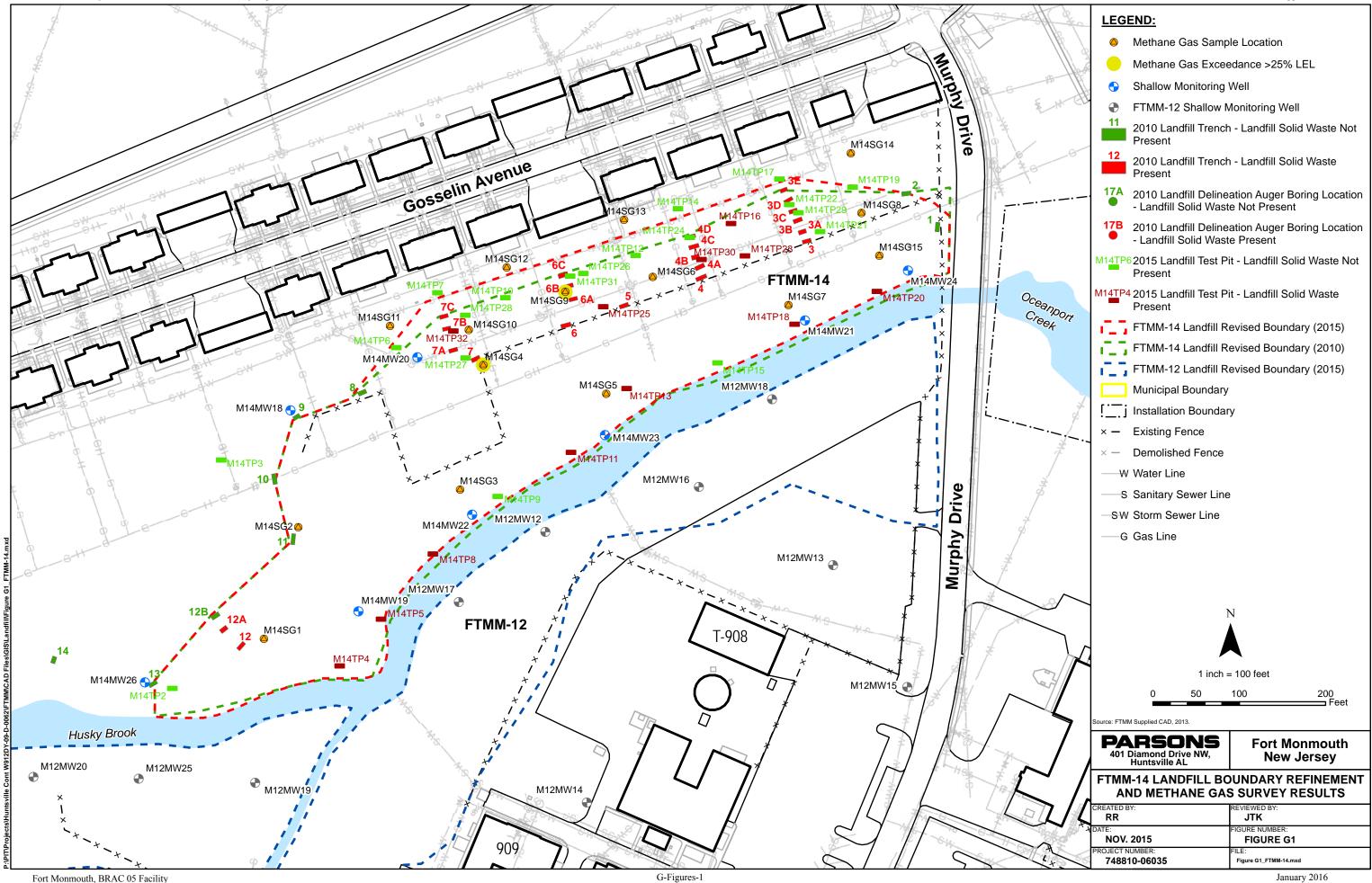
#### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

# **FIGURES**

Figure G1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix G



# **ATTACHMENTS**

Attachment G-A Test Pit Logs

				TI	EST PIT I	FIELD	LOG	PAGE 1 OF
		PAR	SONS		CLIENT:		TEST PIT NO.: M/4	TP2
PROJECT LOCATIO		F	TMM nd fi	11 M14			JOB NUMBER: 7480 GROUND ELEV:	610
	- N						INSPECTOR: R.M9	Jonald
TEST PIT DA	1	an salara (	Non-section 1	Г			CONTRACTOR: AWT	1-1-015
LENGTH	_	DTH D"	DEPTH 41	-	EXCAVATION METHO	OD	COMPLETION DATE: 0827	15 0845
GROUNDWA			7	mini-	exemple		CHECKED BY:	5
DATE / TI		117	1 1	1 1	0		CHECKED B1.	
DEPTH TO		R	N	A		0	LOCATION SKETCH:	4
MONITORING	G DATA						· Power	
INSTRUM	ENT	DE	ETECTOR	BACKGROUN	MICH.		pour	
Multi-R	Cal		co HZS	Cal.	1 0827151	0730	Ц	North
Plus	)	LE	yox y	passes	1 '		- neck -	
REMARKS:			J				NTS	
	T	S	SAMPLE	STRATA		SAMPLE D	DESCRIPTION	EXCAVATION
								EFFORT
DEPTH (FT)	voc	NO.	DEPTH					E - Easy
								M - Moderate D - Difficult
1					brown sil brown sil O.8-4' Ot. ovan fine-me gravel, TD=4' bog meti-vae	gish-b d, littl loose.	reige silty sand, e pebble-size Beach sand.	
13 14 15								-

			TE	ST PIT I	FIELD	LOG		PAGE 1 OF	
	PAR	SONS		CLIENT:		TEST PIT NO.:	MIATP	3	
PROJECT:	FT	МИ				JOB NUMBER:	74881	0	
LOCATION:	1/	and F	ill M14			GROUND ELEV:			_
						INSPECTOR:	R.MyDo	rald	
TEST PIT DATA					*	CONTRACTOR:	AWT		_
500 (100 (100 (100 (100 (100 (100 (100 (	width	DEPTH A!		CAVATION METHO	OD	START DATE: COMPLETION DATE:	092515	<del> </del>	_
GROUNDWATER I	<i>V</i>	4	MUNICA	cavatos		CHECKED BY:	092515	1	
DATE / TIME	JAIA	. ,	11			CHECKED D1.		and office on the	-
DEPTH TO WAT	ER	N	1A			LOCATION SKETCH:	1	<b></b>	
MONITORING DAT	ΓA					LBIdg			
INSTRUMENT		TECTOR	BACKGROUND	TIME/I					
Multi-Rae	2	CO H2S	Jal. passe	062515	5/0725	=		North	
Plus	LEI	JOXY	1 1 -1-6	Fallocation	2 140		$\supset$		
REMARKS: TP 11 to Ver	y law	e tree	(roots)	Ma rocarro	n esse	NTS			
		MPLE	STRATA			ESCRIPTION		EXCAVATION	
								EFFORT	
DEPTH (FT) VOC	NO.	DEPTH						E - Easy	
								M - Moderate D - Difficult	
1			- 0.3	8'-4' oline-bee med., a	own sill well so	ndy loan by sand, fr sted, da	ne-		
10								- - - - - -	

			7	<b>TES</b>	T PIT FI	ELD	LOG		TAGE 1 OF	
	PARS	SONS			CLIENT:		TEST PIT NO.:	MI4TP	4	_
PROJECT: LOCATION	FT La	MH ndfi	11 MI	Å.			JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.M430		-
TEST PIT DAT.	A		100				CONTRACTOR:	AWT		-
LENGTH	WIDTH	DEPTH		EXC	AVATION METHOD		START DATE:	082715	5/1951	
6.5	20"	4'	mini	-DAC	avator		COMPLETION DATE:	082715	1	
GROUNDWAT	ER DATA						CHECKED BY:			
DATE / TIM	E	1	11		11					
DEPTH TO V	WATER	10	17				LOCATION SKETCH:		<b>†</b>	
MONITORING .	DATA									
Multi-Ra Plus		COHZS LOXY	Cal. Pa		082715 0	730	Es A Ores	4	North	
REMARKS:		1					6 NTS			
	SA	AMPLE	STRATA	-		SAMPLE D	ESCRIPTION		EXCAVATION	1
1									EFFORT	1
DEPTH (FT)	VOC NO.	DEPTH							E - Easy	1
			- 1						M - Moderate	1
<del></del>	-								D - Difficult	4
1			-	- <del>β</del>	= @ Surfa edestrian	ee-fi path,	ne granel underlai	for with	-	1
2			-	- 1a	ndscape	fabri	C		_	7
3				1)-	151				-	1
			T	-	lt being c	114 50	1 5/01 24	. 0	-	1
4			+	- 'n	red well-	totod	nd wygrav	<i>e</i> ,	_	1
5			_	- //	in the contract of the contrac	301001			_	1
6			+	-2.5	1-351				-	$\frac{1}{2}$
				U	vaste-as	h, gla	ss bottles,	con,	_	1
7			+	-	burnedi	vood			_	1
8				3,5	5'-4'	* 11	1	1		
			-	-	black	silty	sand, we	7	_	
9			+			U			_	l
10				- TI	) = 4' logs					
,,			-	m	nlti-rae	readi	mg=0		_	
11			1				0			
12			4						_	
13										
			T						]	
14			+						-	
15			4						]	

			TES	ST PIT FIEL	D LOG	PAGE 1 OF 4
	PAR	SONS		CLIENT:	TEST PIT NO.: MIA	TP5
PROJECT:	FT	MM			JOB NUMBER: 749	2010
LOCATION		rudfi	11 MI4		GROUND ELEV:	7010
					INSPECTOR: 2.V	19 Donald
TEST PIT DAT	TA .				CONTRACTOR: AV	JT
LENGTH	WIDTH	DEPTH 3.5'		CAVATION METHOD	- 700	415   145
GROUNDWAT	1.	3.5	Mini-l	xcavator	CUECKED DV	15
DATE / TIM		1	1 1	77	CHECKED BY:	
<b>ДЕРТН ТО</b>		N	A		LOCATION SKETCH:	4
MONITORING	DATA					
INSTRUMEN		TECTOR	BACKGROUND	TIME/DATE		
MWHI-RO		colths	cal.	082415/07/0		North
Plu	A LE	yoxy	passed		- Creek-	
REMARKS:		0			NTS	
	S	AMPLE	STRATA	SAM	PLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
		3	- 0-	-3'	andy loan dry, and downward	_
1			+ 6	LOWN Ailty So	andy loan du	1 -
2			F /1	rous vino Sa	and down of	
-			+ "	cuarry or	aconoago	1 1
3			上方	35' Waste zone.		
			To	3,3		
4			- '	waste zone.	ash roal	
. —			-	0	7000	1 -
5		1	+			1 -
6			10	= 3.5' bgs		1 1
° <del></del>			104	01:	1.	1 1
7			F /**	noti-rae rec	ading: 0	
			T			
8					0	
			F			
9	-		+			-
10			-			-
10			+			1 1
11						1
			T			
12			_			
			-			-
13			+			-
14			-			1 1
						-
15						

	T	EST PIT FIE	CLD LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: MICH	TPG
LOCATION: LA	MM ndfillMlk		1-1-	310 Donald
LENGTH WIDTH  (U.5' / B"  GROUNDWATER DATA  DATE / TIME	11	EXCAVATION METHOD  EXCAVATOR	CONTRACTOR: AVU	515   0936 515
Multi-Rae Voc/	10x4	sed 092515/072	- Serve	North
	AMPLE STRATA  DEPTH		AMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		well sortes	h grey to black, little gravel, y, v. moist-wet.	

	TE	ST PIT FIEL	LD LOG	PAGE 1 OF
PARS	ONS	CLIENT:	TEST PIT NO.: M/4	TP7
PROJECT: FTV LOCATION: Lan	14 2611 1414		JOB NUMBER: 749 GROUND ELEV:	810 Donald
TEST PIT DATA			contractor: K,MC	1)onara
LENGTH WIDTH		XCAVATION METHOD  XCAVATO	START DATE: 08251	5/0926
GROUNDWATER DATA DATE / TIME			CHECKED BY:	
DEPTH TO WATER	MAX		LOCATION SKETCH:	<b>†</b>
MONITORING DATA  INSTRUMENT DETE	ECTOR BACKGROUND	TIME/DATE		L:00
PIMA IEM	OH25 Cal. Dasse		5 electrical	North
REMARKS: TP more	ne 3' N. 005	take due to	Sewer NTS	-
The second secon	MPLE STRATA DEPTH		MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	4.	18-4.5' Reddishbus Silty sand, Well-Sorted 15-5' Reddish by		

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			TES	T PIT FIF	ELD :	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:	However some to	TEST PIT NO.: MIATT	08
PROJECT:	FI	MM				JOB NUMBER: 7488	
LOCATION		nd fil	11414	and the second second		GROUND ELEV:	
						INSPECTOR: R. M.C.)	mald
TEST PIT DAT		DEDTH	EVC	ANATION METHOD		CONTRACTOR: AWT START DATE: 082415	,
LENGTH (e)	WIDTH 2.	3.5°		cavation method		START DATE: 082415 COMPLETION DATE: 082415	/
GROUNDWAT			I MITH WA	.CMO WOOT		CHECKED BY:	
DATE / TIM		A /	11			Secret Control and State of Control and	
DEPTH TO	WATER	10	A		6	LOCATION SKETCH:	<b>↑</b>
MONITORING	DATA		'			_	
INSTRUMEN		TECTOR	BACKGROUND	TIME/DATE	10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1
Multi-	-	20/45	CAR. Dassed	082415/07	10		North
REMARKS:	iw itt	ing				Cille -	
REM/HRS.		· · · · · · · · · · · · · · · · · · ·				NTS	
	S	AMPLE	STRATA	:	SAMPLE D	DESCRIPTION	EXCAVATION
	10-2001		1				EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy  M - Moderate
				11			D - Difficult
			-0-	-0.8'			_
1			+ 6	ion silt.	Sano	Intram worten	1 -
, H			-	co ion sing	, sure	dyloam, wootzone	1 -
2			1 0.9	5'-2'		0	1 -
3			F 4	Silteran	dm	od-C	1 1
			T	4.000 5-1	11	ed-fine, ottled orange to	
4				alive -	a, m	ottled orange to	
			-	oll we green	<u> </u>	O	1 -
5			+ 21	-251			1 -
				soft - al	Sh d-	01.01.0	1 -
6			+	Water go	ar, co	al, brokenglass	1 1
7		1				0	1 7
			TITO	=3,51 bg	1		
8							
			-m	ulti-rae re	adin	e: 0	-
9			+	•		\(\)	1 -
10			F			O	1 -
10			+				1 -
11		-					1
			T				
12							
			-				-
13			+				-
14			F				-
			+				
15			Ţ				]

			TES	ST PIT FII	ELD I	LOG		PAGE 1 OF
	PAF	SONS		CLIENT:		TEST PIT NO.:	M14TP	9
PROJECT:	F	TMM				JOB NUMBER:	748810	5
LOCATION	N: La	ndfill	414			GROUND ELEV:		
			· · ·			INSPECTOR:	R.M4)	mald
TEST PIT DA						CONTRACTOR:	ANT	,
LENGTH	20"	DEPTH 4'		CAVATION METHOD		START DATE:	092415	<del></del>
GROUNDWA		1 4	I MM -2	Acavata		COMPLETION DATE CHECKED BY:	180415	
DATE / TIN		h /	11	7		CILCRED DT.		
DEPTH TO	WATER	N	IA		Ī	LOCATION SKETCH:		<b>A</b>
MONITORING	G DATA					po	weiline -	
INSTRUME	A	ETECTOR	BACKGROUND	TIME/DATE	- / 9	, _	i	
Multi-6	100	100/H2S	Cal. passe	1 082415/0	710			North
Plu	A   L	Ey oxy				- Cies	k-	
REMARKS:		J				NTS		
		SAMPLE	STRATA	3	SAMPLE DE	ESCRIPTION		EXCAVATION
								EFFORT
DEPTH (FT)	VOC NO.	DEPTH						E - Easy
								M - Moderate D - Difficult
			-0-	11				
1				•		1. /		_
			- h	srown silt	y sar	ray loas	ny	_
2			+ 0	try	0	0		-
3			- ,,	20)				-
			+/-	4		. //	1	
4				grangish-b	coron	Silty Ja	nd,	
			_m	grangish-bed-fine, well ed-fine, well t'-green is	U sort	ed ()		
5			+		0			-
, —			-(a)	1'- grenis	4-gr	ey sand,		-
6			+ m	ed-fing w	ell se	orted		-
7			-					-
			TTI	)= 4' bg4				
8			I 10	1.176	0.			
			//	nulti-rae,	readi	ng 0		_
9			-					-
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10			-					-
11								4
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13			+					_
			-					4
14			+					-
15			上					

	TES	T PIT FIELD	LOG	PAGE 1 OF
PARSONS		CLIENT:	TEST PIT NO.: M4T	7017)
PROJECT: FTMM LOCATION: Land File	11 114		JOB NUMBER: 7464 GROUND ELEV:	510
TEST PIT DATA  LENGTH WIDTH DEPTH		AVATION METHOD	CONTRACTOR: AW START DATE: 0825	Donald T 15/09/0
GROUNDWATER DATA DATE / TIME	Mini-ex	1 /	COMPLETION DATE: 082	615
MONITORING DATA  INSTRUMENT DETECTOR	BACKGROUND	TIME/DATE	LOCATION SKETCH: Bldg	
Multi-Rae Voc/ce/H2S Plus Utloxy REMARKS:	Cal. passed	082515/0725	INTS gaved	North
SAMPLE	STRATA	SAMPLE	DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO. DEPTH				EFFORT E - Easy M - Moderate D - Difficult
1		silty sandy	ck silty sand bble-size grave organic matte 2 2' bgs	1.

13			7	<b>TEST PIT F</b>	IELD ]	LOG	TAGE 1 OF
LOCATION:  LANGET DATA  TEST PIT DATA  LINGTH WIDTH DEPTH EXCAVATION METHOD START DATE  Q' Q' Q' Q' Q' Q' Q' Q' Q' Q' Q' Q' Q' Q		PARSON	is	CLIENT:		TEST PIT NO.: MIATP	//
INSPECTOR:  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE:  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE:  GROUNDWARD DATA  DATE/TIME  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  DEPTH OWATE  SAMPLE STATA  SAMPLE DESCRIPTION  EXCAVATION  HETORT  E. Fay  M. Moderate  D. Difficult  DEPTH OWATE  T 4'  Waste zone Ash, burned wood  Austing metal, broken glass,  TD = 4' bgg  Multi-Yae reading:  TD =	100000000000000000000000000000000000000						0
TEST PIDATA  LENGTH WIDTH DEPTH EXCAVATION METHOD  LENGTH WIDTH DEPTH EXCAVATION METHOD  LENGTH WIDTH DEPTH EXCAVATION METHOD  LENGTH WIDTH DATE  LENGTH WIDTH COMPLETION DATE  LENGTH COMPLETION DATE  DATE TIME  DATE TIME  DEPTH TO WATER  MONITORNO DATA  SINDRINGSTY  MURTI-VAL  LENGTH DATE  SAMPLE STRATA  SAMPLE DISCRIPTION  EXCAVATION  EFFORT  E. Fay  M. Modernia  D. Difficult  L. Doc INT ST.   Ly, Sandy learn, woot  Soru, interbedded of use-brown  Sample Date of use brown  Sample Date of use brown  The date of use brown  Sample Date of use brown  The date of use brow	LOCATION:	land	611 M14				2011
LENGTH   WIDTH   DEPTH   EXCAVATION METHOD   START DATE   D82415   424   COMPUTED NOTE   D82415   424   COMPUTED NOTE   D82415   C82415	TEST PIT DATA					1	rinea
GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  MONITORING DATA  BISTRUMENT  BISTRUMENT  BETECTOR  BACKGROUND  TIMEDATE  MUCH Plae  VOC AD H5 CAD DASSE OF 24(5/07H0)  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  DEPTH OF VOC  NO. DEPTH  NORTH  PIWE LINE  PIW	The state of the s	PROSPER DE LA CONTRACTO	ЕРТН	EXCAVATION METHOD	)	START DATE: 082415	11424
DATE/TIME  DEPTHYO WATER  MONTIORING DATA  INSTRUMENT  DEPTH BAR VOC/DIHAS CAL PASSES DEZAIS/OTIO  PILLS  SAMPLE STRATA  SAMPLE DESCRIPTION  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E. Bay  M. Moderate  D. Difficial  1  DO - 2'  DIO WAS SI HY, Sandy loam, soot  3  Waste zone Ash, burned wood  Shoe sod.  TD = 4' bgg  Multi-val leading:  Multi-val leading:  Multi-val leading:  Multi-val leading:  Manual Landing:  Multi-val leading:  Manual Landing	(e' )	2' 4	min	i-excupator		COMPLETION DATE: 082415	
DEPTH TO WATER  MONTORNO DATA  INSTRUMENT  DETECTOR  BACKGROUND  TIMEDATE  MULTI-Rae VOC/10/H <sub>2</sub> S (RA) DASSA (1024/5/6710)  PILLS  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  ENCAVATION  EPTORT  E. Easy  M. Moderise  D. Dillisak  1  2  3  4  2 - 4'  Send  2 - 4'  Waste zone. Ash, burned wood  Tusting metal, broken glass,  TD = 4' bgg  Multi-rae reading-6  MULTI-rae reading-6  MONTORNO DATA  LOCATION SKETCRE  POWER LINE  North  North  North  North  North  POWER LINE  North  North  ENCAVATION  EPTORT  E. Easy  M. Moderise  D. Dillisak  To a d' a gove. Ash, burned wood  Tusting metal, broken glass,  TD = 4' bgg  Multi-rae reading-6	GROUNDWATER DA	ATA		-,		CHECKED BY:	
MONITORING DATA  INSTRIBUTION DETECTOR BACKGROUND TIMEDATE  MULTI PLAZ VOCADINGS CAL DASSEL OPEZALS/OTIO  PILIS LEDOXY  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficial  1  DO - 2'  DIO NO. DEPTH  2  JOURN STILTY, Sandy loam, swoot  30'', interbedded of ue brown  Sand  4  2'-4'  Waste zone Ash, bluned wood  Shoe sod:  TD = 4' bgg  M - Molerate  D - Difficial  TD = 4' bgg  M - Molerate  D - Difficial  TD = 4' bgg  M - Molerate  D - Difficial  TD = 4' bgg  M - Molerate  D - Difficial  TD = 4' bgg  M - Molerate  D - Difficial  D - Dif	Carting and Market and Assessment		MA	1			
BISTEMENT DETECTOR BACKGROUND THEDATE  MULTI-LAR VCC 101 H5 (AD DASSEL OR) 24 (5) OHO  PILLS LELLOXY  REMARKS:  SAMPLE STRATA  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E-Easy M. Moderate D-Difficult  1  DEFORM  2  JO-2'  Brown silty, Sandy loam, Root  3 - 3 - 3 - 5 - 4'  Waste zone. Ash, burned wood  The A' bags  Manual Coord  The A' bags  Manua			10171			LOCATION SKETCH:	1
Multilae Vocables Cal passe 0824(5/0710   North Pius Unitory  REMARKS:  SAMPLE STRATA   STRATA   SAMPLE DESCRIPTION   EXCAVATION  EFFORT   E. Easy  M. Moderate D. Difficult  2  30   John South Strata   Sample Description   Excavation  EFFORT   E. Easy M. Moderate D. Difficult  2  30   John South Strata			n Digwan	OLD THE THE	T.	- power line -	
REMARKS:  SAMPLE STRATA  DEPTH (T) VOC NO. DEPTH  SAMPLE DESCRIPTION  EFFORT  E - Easy  M. Moderate  D - Difficult  1  2  3  4  2'-4'  waste zone. Ash, burned wood  rusting metal, broken glass,  TD = 4' bggs  multi-val leading: 6  multi-val leading: 6	1. 0	1 1 17	7 . 1			T	North
REMARKS:    SAMPLE   STRATA   SAMPLE DESCRIPTION   EXCAVATION   EFFORT   E - Easy   M - Moderate   D - Difficult			770	action of the	, , , ,	0. 0.2 1	110101
DEFTH(FT) VOC NO. DEFTH  SAMPLE DESCRIPTION  EXCAVATION EFFORT  E - Easy  M - Moderate  D - Difficult  - 0'-2'  - bio win silty, Sandy loam, woot  - 30'll, interbedded olive-brown  - 5 and  - 2'-4'  - waste zone ash, burned wood  - rusting metal, broken glass;  TD = 4' bags  multi-val mading: 6  - multi-val mading: 6			7			Week-	
DEPTH (FT) VOC NO. DEPTH  DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO. DEPTH (FT) VOC NO							
DEPTHOT) VOC NO. DEPTH    Depth   Dept		SAMPLE	STRATA		SAMPLE DE	ESCRIPTION	
M. Moderate D. Difficult  1  2  3  4  2'-4'  waste zone. Ash, burned wood, rusting metal, broken glass, Shoe sode.  TD = 4' bggs  multi-rae reading.	DEPTH (FT) VOC	NO DE	DTU				
De Difficult  1	DEPTH (FT) VOC	NO. DEI	rin				
brown silty, Sandy loam, soot  304, interbedded olive-brown  5 and  2'-4'  waste zone ash, burned wood  rusting metal, broken glass,  TD=4' bogs  multi-vae reading=6  multi-vae reading=6							Control of the state of the sta
brown silty, Sandy loam, soot  304, interbedded olive-brown  5 and  2'-4'  waste zone ash, burned wood  rusting metal, broken glass,  TD=4' bogs  multi-vae reading=6  multi-vae reading=6				-0-21			
waste zone. Ash, burned wood  rusting metal, broken glass;  TD = 4' bgs  multi-rae reading: 6  multi-rae reading: 6	1				,	/ 0	
waste zone. Ash, burned wood  rusting metal, broken glass;  TD = 4' bgs  multi-rae reading: 6  multi-rae reading: 6				- brown 81/1	ty, Jan	dy loam, poot	-
waste zone. Ash, burned wood  rusting metal, broken glass;  TD = 4' bgs  multi-rae reading: 6  multi-rae reading: 6	2		-	- 20re int	26.1	1 1 1	1 -
waste zone. Ash, burned wood  rusting metal, broken glass;  TD = 4' bgs  multi-rae reading: 6  multi-rae reading: 6	3	1		- 0 1)	ecolad	led office-brown	1 -
waste zone. Ash, burned wood  rusting metal, broken glass;  TD = 4' bgs  multi-rae reading: 6  multi-rae reading: 6				- Sand			
waste zone. Ash, burned wood, rusting metal, broken glass; TD=4' bgs multi-rae reading=6  multi-rae reading=6	4			- - n 1 x 1			1 ]
8 multi-rae reading = 6  10  11  12  13  14				2-4			
8 multi-rae reading = 6  10  11  12  13  14	5		1 -	_ waste zi	one a	the burned in	
8 multi-rae reading = 6  10  11  12  13  14			1 1	- nusting	1 1 0	n, buched wood,	1 -
8 multi-rae reading = 6  10  11  12  13  14	6		1 +	- Share call	metal	, broken glass	-
8	7			_ 5146 809		d 1	
				-10=4 bg	7		
	8			- multi-va	e lead	ling: 4	
				-			
11	9		1 - +	-		O	1 -
11			-	-			1
12	10		1 +	-			1 -
12	11			-			-
13	"		1 +	N.			
	12						
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15	14		1 +	r.			-
	15			6			-

	TH	EST PIT FIEI	LD LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MI4TI	012
PROJECT: FT LOCATION: LC	MM andfill M14		JOB NUMBER: 7488  GROUND ELEV: INSPECTOR: L.W.C)	
TEST PIT DATA  LENGTH WIDTH	DEPTH I	EXCAVATION METHOD	CONTRACTOR: AWT	16854
5.5' 16" GROUNDWATER DATA	4' minies	(cavato)	COMPLETION DATE: 062515	)
DATE / TIME	NIA	11/		
DEPTH TO WATER MONITORING DATA	1 14/21 21	V	LOCATION SKETCH:    B1 dg	1
Multi Ras Voc	CO H2S Cal. Dass	T	5 Zguts	 North
REMARKS:			NTS	
DEPTH (FT) VOC NO.	AMPLE STRATA  DEPTH	SAM	APLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		3.5-5	sandy loam, ses w/ depth y sand, moist, d, organic odos ding: O	

			TI	EST PIT FIE	LD LOG		PAGE 1 OF	
	PAR	SONS		CLIENT:	TEST PIT NO.:	MIATP	13	
PROJECT:	FT	MM			JOB NUMBER:	74881	D	
LOCATION	Las	ndfill	114		GROUND ELEV:			_
					INSPECTOR:	P.MYD.	onald	_
TEST PIT DAT					CONTRACTOR:	AWT	1:12	_
LENGTH	WIDTH 2	DEPTH 4		EXCAVATION METHOD	START DATE:	082415	14110	
u		7	Mini-s	excavator	COMPLETION DATE:	082415		-
GROUNDWAT DATE / TIM		/	111		CHECKED BY:			-
DEPTH TO		1	1/4	///	LOCATION SKETCH:		A	_
MONITORING			4		П			
INSTRUMEN	NT DE	TECTOR	BACKGROUN	D TIME/DATE				
Multi-R	ae Voc	col H25	cal pass	ed 082415/071	D - Dom	erlino -	North	
Plw	生	yoxy	,		000	erline –		
REMARKS:		, 1			NTS			
T	SA	AMPLE	STRATA	SA	MPLE DESCRIPTION		EXCAVATION	
							EFFORT	
DEPTH (FT)	VOC NO.	DEPTH					E - Easy	
							M - Moderate D - Difficult	
	$\neg \vdash \neg$			· -7			D- Difficult	
1				0-0.3				
		1	T	1	/ 0			
2				brown 81/1	y, Sandiz Voa	m		
			_	root 2 mo	0, ()	/		4
3			+	y, a	9			4
, —			F /	8.8-4'	y, sandy loa			+
4		ĺ	+	0112 : 1	/	,		$\forall$
5				SAA, Some Int.	erbedded green ash, fabric,	n sand		7
				wastezone:	ash fabric .	tourente		1
6				tile cond in	inti out to	income por		]
			_	tile, coal, re	ass my metal			4
7			+	TD=4' logs	0			$\dashv$
				0				$\dashv$
8			+,	nulti-raeleas	ding = A			Η
9			F '					1
			T					7
10		1						]
			_					1
11			+				-	+
			-				-	+
12		1	+				-	$\forall$
13		1	-				-	1
			$\pm$					1
14								
								1
15			+				-	+

		y	TES	T PIT FIELD	LOG		PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.:	MATE	14
PROJECT:	FI	74 M			JOB NUMBER:	74881	D
LOCATION	1: 10	udfil	1114		GROUND ELEV:	.0 //	0.0
					INSPECTOR:	R.W.D.	onald
TEST PIT DAT		DEPTH	T EVG	AVATION METHOD	CONTRACTOR:	PRINT	10022
LENGTH 7	WIDTH	DEPTH 4'	mini-ex	AVATION METHOD	START DATE:  COMPLETION DATE:	0825157	005'
GROUNDWAT	- 10-		T Printer-Date	pour of	CHECKED BY:	000013	-
DATE / TIM	IE	1/	11	7/1/			
DEPTH TO	WATER	/ / /	A/		LOCATION SKETCH:		<b>†</b>
MONITORING	DATA			10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	1 Roda 1	Bldg	
INSTRUMEN	1.	TECTOR	BACKGROUND	TIME/DATE		0	
Multi-R Plu		CO HOS	Cal. passed	092515 0725		H metal	North
REMARKS:	o i le	4007			i [		
ICEM/IICCS.	ii				NTS	₹	<b>3</b>
	S	AMPLE	STRATA	SAMPLE I	DESCRIPTION		EXCAVATION
		1					EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy M - Moderate
							D - Difficult
			- 0	-d'	130000000000000000000000000000000000000		_
1			+ 1		1 / 000 00		_
			F "	2000 8194, 5a	nder town	· )	-
2			+	dry, lg. tre	eroots		_
3			F	0 - 0			7
			+ "3	square piece o	I metal cre	0581mg	_
4			工	pit @ N. end	~20" has	J	
				onown silty, sa dry, dg. tre square piece o pit@N. end Utilitiesfolks	1 2 1	a at	_
5			-	WHITHESTOIKS.	sayıcı	100	-
6				condition	U		-
6			+	= 4' bgs			*
7				=4 bgs			
		1	Lmu	eti-vae readi	1.0 - 6		]
8				eti-rae readi	7-0		_
			_		0		4
9		i	<del>- +</del>				
10			-				+
							-
11			上				J
12			-				-4
			-				-
13			+				
14							-
			T				J
15							]

	THE COLUMN THE THE	IDICC	PAGE 1 OF
	TEST PIT FIE	LD LOG	
PARSONS	CLIENT:	TEST PIT NO.:	TP15
PROJECT: FTMM LOCATION: Landf	ill M14	JOB NUMBER: 748  GROUND ELEV: INSPECTOR: R. M.	1920 meld
LENGTH WIDTH DEPTH  LENGTH WIDTH WIDTH DEPTH  LENGTH WIDTH WIDTH DEPTH  LENGTH WIDTH WIDTH WIDTH WIDTH  LENGTH WIDTH W	EXCAVATION METHOD  MINI-EXCAVATOR	CONTRACTOR: AW	7-2415/1407
DEPTH TO WATER	A I	LOCATION SKETCH:	<b>A</b>
INSTRUMENT DETECTOR  MWHI-RAN VOC/COHYS  Plus LELIOXY  EMARKS:	BACKGROUND TIME/DATE Cal. Sassed. 0924 15/0710	- Creek -	North
DEPTH (FT) VOC NO. DEPTH	STRATA SA	AMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	brown sil.  dry, inc. m  down ward,  al fin last  med, well sort  silty  TD=4' bgs  multipae rea	ty, sandy loam, soistment sand wood zone bucket) - black santed, clamp-moist, ding-to	d,

	TES	T PIT FIELD	LOG	TAGE T OF
PARSOI	NS	CLIENT:	TEST PIT NO.: MATT	16
	M dfill M14			0 onald
GROUNDWATER DATA DATE / TIME DEPTH TO WATER	EPTH EXC	EAVATION METHOD  AVATO  TO STATE OF THE PROPERTY OF THE PROPER	CONTRACTOR: #1//1 START DATE: 082515 COMPLETION DATE: 082515 CHECKED BY: LOCATION SKETCH:	5/0818
MONITORING DATA  INSTRUMENT DETECT  MULTI-RAL VOCICO  PIUS LELLO  REMARKS:	H <sub>2</sub> S cal. passed	11ME/DATE 082515/0725	Bl And Bl	North TP17
DEPTH (FT) VOC NO. DE	E STRATA	SAMPLE I	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		lack siltysa retroleum odor	nd, damp, (no radings and on multi-ree), mbe: crossing 2'bgs-possible	

		TEST PIT FIE	LD LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MA	TP17
PROJECT: F	TMM andfill M	14	JOB NUMBER: 749  GROUND ELEV: INSPECTOR: 2.49	Donald
TEST PIT DATA  LENGTH WIDTH  CO' / O''  GROUNDWATER DATA  DATE / TIME	DEPTH 4' MIN	EXCAVATION METHOD	CONTRACTOR: AW START DATE: 0825 COMPLETION DATE: 0825 CHECKED BY:	T 015 0807
DEPTH TO WATER  MONITORING DATA  INSTRUMENT DE  Multi-fal VOC	TECTOR BACKGI	ROUND TIME/DATE 082515/072	LOCATION SKETCH:    Bldg    - electrical line  NTS	North
DEPTH (FT) VOC NO.	DEPTH STRATA		AMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		Downsilty  Jone  Janker W/o  Jone  J	sandyloan, woot  depth  all (<3"dia.)  concrete, as phalt  ading=0	

		TES	T PIT FIEL	D LOG	PAGE 1 OF
PA	RSONS		CLIENT:	TEST PIT NO.: M/4	TP18
PROJECT: F LOCATION: L	TMM andfill	MIA		GROUND ELEV:	1810 Donald
TEST PIT DATA  LENGTH WIDTH  (0' 20"  GROUNDWATER DATA	DEPTH 3,5'	exc. mini-ex	AVATION METHOD	CONTRACTOR: AW START DATE: 0824 COMPLETION DATE: 0824 CHECKED BY:	
DATE / TIME DEPTH TO WATER MONITORING DATA INSTRUMENT	11. 11.0	BACKGROUND Pal. Dassed	TIME/DATE 0902415/07/0	LOCATION SKETCH:	/5 i North
Plus REMARKS:	LEHOXY	/	/	- Creek	
DEPTH (FT) VOC NO.		TRATA	SAM	PLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			3.5' nown silty, sittle graved, of 3.5 hard Concrete in Diece andern 0=3.5'bgs Oti-rae rea	sandy loam, luy sone-small pieces bucket-la eath	1

			TES	ST PIT FI	ELD I	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:		TEST PIT NO.: MI4	TP19
PROJECT:	FT	МИ	ALL TO 1818			JOB NUMBER: 7488	310
LOCATION	v: La	ndfil	IMIA			GROUND ELEV:	
						4	Donald
TEST PIT DAT	T	DEPEN	EV	CAVATION METHOD		CONTRACTOR: AIVI	15/0747
LENGTH 5.5	/8"	DEPTH 4	mini-exc	CAVATION METHOD		START DATE: 1925	
GROUNDWAT			Triffic ~ A.C.			CHECKED BY:	,0
DATE / TIN	ИЕ		1	1			
DEPTH TO		14]				LOCATION SKETCH:	1 [bldg ] 1
MONITORING		TECTOR	DAGNODOLDID	THEFT		bldg   bldg	[bldg]
MWH-R		COLLS	Cal Dissed	082515/0°			North
plu		LIDXU	Cor parace	000515/0	700	П	
REMARKS:		/ /					
		AMPLE	STRATA		SAMPLE DE	NTS	EXCAVATION
		AMILE	SHOUN		Orden EE DE	seed non	EFFORT
DEPTH (FT)	VOC NO.	DEPTH	1				E - Easy
							M - Moderate D - Difficult
			A				D-Difficult
1			10	0.5'	0 /	0	
			L 6	nown silt	ysande	y loan	
2			+0.5	5'-41	) (	J	-
3					10	. 1 . 10 . +	- /
				Siliy Sana	1, the	med, well sort tion (brown, yellow)	rel -
4			$\perp V$	are able o	colorat	tion (brown,	
.			F /	reddish br	LOWN,	yellow)	-
5			1		,	0	1 +
6			- TI	)=4' bgs			1
			T	0			
7		1	+Mu	Uti-ral 1	eadin	9=0	
8			F'				-
°-			+				1
9		1					
			-				
10			-				-
11			-				1 -
			+				
12			工				
		1	_				1 1
13			+				
14			-				
15							

<u> </u>	NAME OF TAXABLE PARTY.		Г	EST PIT	FIELD	LOG	PAGE 1 OF
	PAI	RSONS		CLIENT:		TEST PIT NO.: MIAT	020
PROJECT:	FI	MM	,			JOB NUMBER: 74881	D
LOCATION	N: 10	ind Fil	1414			GROUND ELEV:	
		Marin Association of the Control of			-	INSPECTOR: P.M.	onald
TEST PIT DAT			1			CONTRACTOR: AWT	1:250
LENGTH	WIDTH 20°	3.5'	maini	excavation meth	OD	START DATE: 0824   5	1350
GROUNDWA		1 3.5	1 1/1/1/1/	DXCAVAGO		CHECKED BY:	2
DATE / TIN		N /	11	1	$\gamma$	7	
<b>DEPTH TO</b>	WATER	1 10	1/-		1/	LOCATION SKETCH:	<b>A</b>
MONITORING	DATA		7			o poie	*
INSTRUME	73	DETECTOR	BACKGROU		1	П ,	Į.
Multi	-	CICOI HS	Cal. Dr.	1889 082415	10710		North
PIU REMARKS:	X) L	eyaxy			<u></u>	auck -	
KEMAKKS:						NTS	
		SAMPLE	STRATA		SAMPLE D	DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
				1154 - 11 - 14 - 15 - 15 - 15 - 15 - 15			M - Moderate D - Difficult
				0-2.51	78.0		
1				. 1	0.1	×	2
			<b> </b>	brown A	ulty sa	ndy loan	-
2			+	little ac	and i	ndy loan,	_
3				0	100	i go	
				2.5'_			1 ]
4				3.51		0.4	_
			-	waste:	zone-	asphalt, concrete	-
5			-		0		1 -
6			-				
			T	T ====	il :		
7			$\perp$	D= 3.5	bgs		
			_	· · · · ·	0	1:	-
8			+	TD=3.5 multi-ra	a maa	ling = 0	1 -
9			-			0	1 +
	Į.						1 7
10							]
			_				1 4
11			+				-
12			-				
~			+				1
13						S. Carlotte	
			T			AB	]
14						Acres (	
15			-				-
15	1 1						

			TE	ST PIT FII	ELD	LOG	PAGE 1 OF
	PA	RSONS		CLIENT:		TEST PIT NO.: MI4TA	021
PROJECT:	F	ТММ			10.000	JOB NUMBER: 748810	)
LOCATION	-	and fil	11414			GROUND ELEV:	
						INSPECTOR: R.149	mald
TEST PIT DAT	TA		r			CONTRACTOR: AWT	
LENGTH (0'	WIDTH	DEPTH 4'	1 7 7	CAVATION METHOD		START DATE: 083115	1019
GROUNDWA'		+-	mini-ex	cavator	- 11-38c	COMPLETION DATE: 063   15 CHECKED BY:	
DATE / TIM		111	1	$\sim$		CHECKED B1.	
<b>ДЕРТН ТО</b>	The same and the s	11/1/	#/ L	///		LOCATION SKETCH:	<b>A</b>
MONITORING	3 DATA						
INSTRUME	ENT	DETECTOR	BACKGROUND	TIME/DATE			
Multi-1		c/co/H25	Cal. Dasse	083115/073	30		North
Plus	Lt	2/Oxy		//		» (12 t	1
REMARKS:		,				NIS fence I	P21
		SAMPLE	STRATA	****	SAMPLE D	DESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO	. DEPTH					E - Easy
							M - Moderate D - Difficult
			-0-	-1'			
1			4 42				
			K	nown silty	x, San	dy loam	_
2			+ /	wotzone	J	edy loam,	_
3				-1.51			-
7——			+/-	-1.5		,	-
4			上占	rown silte	y sa	nd, some gravel	1
					)	1	1 ]
5		1 1	1.5	"-4"			_
,				1.5	a bla	ck silty sand	1 -
6			+ 0	a mount	Din	I selly sond	1 -
7			FA	one gravet	, Na	ed, some	
			-	iganic m	alle	1, few pieces	
8			1 6	2 metal			
			L 6	)			_
9			++	n=dll an			-
10			F 1	D=4'bgs			1 -1
10			+ n	1.01:120	10-0	100 8	1 -
11	1		<i>⊢ ′′′</i>	ulti-val 1	llan	17 = 0	1 1
			T			J	1 ]
12							4
			<u> </u>				
13			-				-
14			-				-
			+				-
1.5							

	TEST PIT FIE	LD LOG	
PARSONS	CLIENT:	TEST PIT NO.: MI4TP22	
PROJECT: FTMM LOCATION: Land	ill M14	JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: R.M.D.ONALA	_
TEST PIT DATA  LENGTH WIDTH DEPT  5.5' /8"  GROUNDWATER DATA	H EXCAVATION METHOD MINISTRANCE	CONTRACTOR: AINT START DATE: UB3115 1029 COMPLETION DATE: UB3115	_ _ _
DATE / TIME DEPTH TO WATER  MONITORING DATA INSTRUMENT DETECTOR	BACKGROUND TIME/DATE	LOCATION SKETCH:	
Multi-Rae Vocaco H2S Plus LELOXY REMARKS:	Cal passed 063115 073	TPIQ TP22  NTS	
DEPTH (FT) VOC NO. DEPTH		AMPLE DESCRIPTION  EFFORT  E - Easy  M - Moderate D - Difficult	
1	- Sand, med, o	andy loam, some rding to siltys lig, little gradel  sand, med coarse, e organic matter	

	TEST PIT FIELI	0100	PAGE 1 OF
DA DOMAIG		7.	100
PROJECT: FTM M LOCATION: Landfi	CLIENT:	JOB NUMBER: 7408 GROUND ELEV: INSPECTOR: R. M.4	100
TEST PIT DATA  LENGTH WIDTH DEPTH  5' /8" 3'  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	EXCAVATION METHOD  Mini-excavator	CONTRACTOR: AWT START DATE: 083/15 COMPLETION DATE: 083/1 CHECKED BY: LOCATION SKETCH:	11.00
MONITORING DATA  INSTRUMENT DETECTOR  MULTI-RAL VCCCOHS  POLICA  POLICA  REMARKS:	BACKGROUND TIME/DATE  Cal. Dassed 083115 0730	oTPI6	North 23
DEPTH (FT) VOC NO. DEPTH		E DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate  D - Difficult
1	brown siltys  grading to b  gravel in top  top 1'  2'-3'  black sand w   concrete, brick,  az'  la piece of conce  dig past.  TD=3' bas  multi-rae read	metal will	

	T	EST PIT FIE	LD LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.: MI47	P24
	MM ndfill M2		JOB NUMBER: 7499 GROUND ELEV: INSPECTOR: L.M.	810 Donald
TEST PIT DATA  LENGTH WIDTH  5.5' /6"	DEPTH Minis	EXCAVATION METHOD	contractor: ANT start date: 083114 completion date: 083114	100
GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	NA		CHECKED BY:  LOCATION SKETCH:	
Multi-Rae Voc	TECTOR BACKGROUN  CO H2S CAD PASS		0 TP 14	offe North
DEPTH (FT) VOC NO.	DEPTH STRATA	SA	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		0.8'-2' brown silty 2'-4' black silty so	Land, Med fine end, little organi e pebble size gran	L L

		TEST PIT FIE	LD LOG	PAGE 1 OF
PAR	SONS	CLIENT:	TEST PIT NO.:	14TP25
	MM ndGII M2		GROUND ELEV:	19810
TEST PIT DATA  LENGTH WIDTH  5.5' / B"  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	DEPTH 4' Min	EXCAVATION METHOD -LY CANATON	CONTRACTOR: AM START DATE: 09: COMPLETION DATE: 09: CHECKED BY:	T 3115/1102 3115
MONITORING DATA  INSTRUMENT DE  MULTI-RAR VOC	TECTOR BACKGR		-TP10	° TP12 North
DEPTH (FT) VOC NO.	MPLE STRATA DEPTH	SA	AMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		-2.5'-4' - dk. greenist - silty sand - Q4'	y sand, little gravel, dry gray to black ennot advance	

			TES	T PIT FIEL	D LOG		
	PAR	SONS		CLIENT:	TEST PIT	NO.: 41477	240
PROJECT: LOCATION	ty La	MM nd Gil	I M14		JOB NUMBER GROUND ELE INSPECTOR:	7 10010	nald
TEST PIT DAT	`A				CONTRACTO	R: AWT	1
LENGTH	WIDTH	DEPTH		AVATION METHOD	START DATE:	100	1114
6'	20"	41	mini-exi	avator	COMPLETION	100	
GROUNDWAT DATE / TIM		1 /	1111	000	CHECKED BY		
DEPTH TO		N	1 16		LOCATION SK	ETCH:	_
MONITORING				VV			. [
INSTRUMEN Multi-R Plus	al Voc	COH25	BACKGROUND Cal. Dassed	тіме/дате 083115/07-30	TPIO	TP26	TP IZ North
REMARKS:		,				NTS TP25	
	S	AMPLE	STRATA	SAMP	LE DESCRIPTION		EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate D - Difficult
1			- bi	own silty sa", some gra	ad, root wel, dry and, med- s of base	zone top med coaise,	
15			_				

			TE	ST PIT FIEL	D LOG	PAGE 1 OF 1
	PA	RSONS		CLIENT:	TEST PIT NO.: MIATPE	27
PROJECT:	F	TMM			JOB NUMBER: 7488/	
LOCATIO	N:	andfil	11 M14		GROUND ELEV:	
TECT PET DAY	T.A.				INSPECTOR: R.M.D.C	mald
LENGTH	WIDTH	DEPTH	T	(CAVATION METHOD	contractor: AWT start date: 083115	7
5,5'	20"	41		xcavato7	COMPLETION DATE: 083115	<del> </del>
GROUNDWA'	TER DATA	1	17	x corosio .	CHECKED BY:	
DATE / TIM	ME	111	1	1 0 0		
DEPTH TO	WATER	141	AI		LOCATION SKETCH:	<b>†</b>
MONITORING					ctp28	1
Multi-		OCCO H25	BACKGROUND	093115/0730	· 59/0	North
Plus		ELLOXY	Cal. passed	09511510180		North
REMARKS:		DOJ- AG		<del>1</del>		
					NTS fence	<del></del>
		SAMPLE	STRATA	SAMP	LE DESCRIPTION	EXCAVATION
DEPTH (FT)	VOC NO.	DEPTH				EFFORT E - Easy
DEFIN (F1)	100.	DEFIN				M - Moderate
						D - Difficult
. —			-0	-1.5' brown silty grave, dry		
1				brown silta	sand some	-
2				mario 1.0	9 50	-
			T	o any	-	
3		1	$I_{I}$	1-3,51		
						-
4			+9	med-Fine, m	Sand sill	-
5			F '	med-Fine, m	0154	-
			1		Ü	-
6			上 3.	5-4'	2	
			- 6	vaste ash 10	as coal	_
7			+	vaste ash, sle	8'	-
8			-		Ü	-
			十			-
9			-Fπ	)=4'bgA		-
10				Iulti-vae nac	dino-A	
11			上	· · · · · · · · · · · · · · · · · · ·	c. g -o	
			-			-
12			+			-
13						_
14			F			-
14			+			
15						_

		TEST PIT FIELD	LOG	PAGE 1 OF
PARSO	DNS	CLIENT:	TEST PIT NO.: MIATP	28
PROJECT: FTV LOCATION: Lan	IM dfill MI4		JOB NUMBER: 748810  GROUND ELEV:	
TEST PIT DATA  LENGTH WIDTH  (Q! "20"  GROUNDWATER DATA  DATE / TIME  DEPTH TO WATER	DEPTH Min	EXCAVATION METHOD  i-excavator	CONTRACTOR:  START DATE:  COMPLETION DATE:  CHECKED BY:  LOCATION SKETCH:	24
MONITORING DATA		ROUND TIME/DATE DASSED 093/15/0730	*TP:7 TP28	North
DEPTH (FT) VOC NO.	PLE STRATA DEPTH	SAMPL	E DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 0-2' - brown silty sa - 8', some grave - 2'-31 - black to dk.ba - somegravel, in - humber - TO = 3' bgs - multi-rae read	coon silty sand, oist, decaying	

		TEST PIT FIEI	LD LOG	TAGE T OF
PA	RSONS	CLIENT:	TEST PIT NO.: M147	P29-3C
	-TMM		JOB NUMBER: 748	
LOCATION: L	and fill M	14	GROUND ELEV:	
TEST PIT DATA			CONTRACTOR: R. M. G. CONTRACTOR:	Donald
LENGTH WIDTH	DEPTH	EXCAVATION METHOD		(5/0853
10' 20"		ini-excavator	COMPLETION DATE: 0903	
GROUNDWATER DATA		7,7,00,000000	CHECKED BY:	<u> </u>
DATE / TIME	11/1	$\mathcal{M}$		
DEPTH TO WATER	INIVA	100	LOCATION SKETCH:	<b>†</b>
MONITORING DATA				
		KGROUND TIME/DATE		1
	518	D. Dassed 090315/073	1 TP29	-3C North
REMARKS:	Eiloxy		, 38	
REMARKS:	,		- fenosce -	
	SAMPLE STRA	SAM SAM	IPLE DESCRIPTION	EXCAVATION
				EFFORT
DEPTH (FT) VOC NO	. DEPTH			E - Easy
				M - Moderate D - Difficult
		0-1.5'		
1		+ 0-1.5	1 1	-
2		- brown sirry,	sandy loam,	-
<sup>2</sup>		+ die little gra	wel of	-
3		biown silty.  diy, little gra	- 1 200 10	_
				,   ]
4		1.5-4'		
		- dk brown to	black silty san	$d$ , $\Box$
5		+ little grave 0	sew Dieces of	-
6		- werd no	0	-
°		_ wood, mois		1 4
7				
		T .		1 7
8		-TD=4'bgs		
		- I way		
9		+	,	4
10		- multi-rae reac	ding=0	, -
10		+		1 1
11				1
12				
13		+		
.		-		
14				-
15		· -		-
~				1 -

			TE	ST PIT FI	ELD LOG	FAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.:	114 TP 30 - 4B
PROJECT:		71419 andfil	1 M14		JOB NUMBER: GROUND ELEV:	748810 2.149 mald
TEST PIT DAT	ГА				CONTRACTOR:	AWT
LENGTH	WIDTH	DEPTH	EX	CAVATION METHOD	START DATE:	090315/
5.5'	189	4'	mini-e	xcavator	COMPLETION DATE:	1903151
GROUNDWAT	TER DATA				CHECKED BY:	
DATE/TIN	4E	1//	11	11	/	
DEPTH TO		1 // /	71/1		LOCATION SKETCH:	1
MONITORING		escardo de Macava				4
INSTRUME.	~	CICALIC	BACKGROUND	TIME/DATE		28
Multi-1		CICO/H2S	Cal passed	090315/07		North
REMARKS:	14	HONG	I.		NTS	
		SAMPLE	STRATA		SAMPLE DESCRIPTION	EXCAVATION
		1				EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate D - Difficult
						Difficult
1			1 70	-1.5'		
			Tk	nown siltr	1 Sandy loan.	/   ]
2				Pana 0:47		ag,
			L .	xoose, xiii	grandy loam, a	
3			1	5'-3.51		
, —						*   -
*			+ 4	oik brown	grapting to ble	-/   -
5			F	1:14 10 1	grading to bla. damp,	ck -
			+ /	surg sana,	, damp,	1
6				O	•	
			-3.	5'-41		
7						
8			- 1	ono a suci.	small pieces of	-
0			+ "	orciete, a	Au, coal	-
9					0	-
			(2)	t'refusal-	la piece of concre	to
10					0, 0	
				*11		
11			+113	=4'hgs		-   -
12			_	U		-
12			+ Mu	Iti-rae read	ling = 0	-
13					0	-
14						
15						

	TH	EST PIT FIE	LD LOG	TAGE 1 OF V
PAR	SONS	CLIENT:	TEST PIT NO.: MI	4TP31-6C
	MM ndfill MJ4	GROUND ELEV:	18810 M4Donald	
TEST PIT DATA			CONTRACTOR: A	NT
LENGTH WIDTH		EXCAVATION METHOD	START DATE: 09	0315 0938
51 20"	71 mini-e	xcavator	COMPLETION DATE: 04	90315
GROUNDWATER DATA	1 0 1 1 0 1	1	CHECKED BY:	
DATE / TIME	MAX			
MONITORING DATA	11/1/1/		LOCATION SKETCH:	1
INSTRUMENT DE	TECTOR BACKGROUNI	O TIME/DATE		
	(Co) H25 Cal. pass	090315/0731		•TP26 North
REMARKS:	10×4		~ UB	
		64	NTS	
S	AMPLE STRATA	SA	MPLE DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH			E - Easy
DEFINITION FOR 180.				M - Moderate
				D - Difficult
1		loose  1.5-7'  dt. brown g  silty sand,  med, clam  lg. piece of	sandy loam, a landing to bla little gravel, wood in N. wood in N. won approx. 5.	ak =

				TE	ST PIT F	IELD I	LOG	PAGE 1 OF
		PAR	SONS		CLIENT:		TEST PIT NO.: MI4TH	732-7B
PROJECT	·	FΠ	UN				JOB NUMBER: 748816	
LOCATIO			nolfill	M14			GROUND ELEV:	
							INSPECTOR: R.MYDOT	nald
TEST PIT DA	TA						CONTRACTOR: AWT	
LENGTH		DTH	DEPTH		CAVATION METHOD		START DATE: <u>090315</u>	/
5'			41	mini-en	cavator		COMPLETION DATE: 090315	
GROUNDWA' DATE/TI		ATA		1 . 1	- 0		CHECKED BY:	
DEPTH TO		3	NZ	1./1	VVI		LOCATION SKETCH:	
MONITORING							L Bloke	Ţ
INSTRUME	ENT	DE	TECTOR	BACKGROUND	TIME/DAT	TE .		1
Multi-R	Pae	VOC	1co/H2S	cal. passed	090315/0	730	07C	North
Plus		LE	2/oxy				78	
REMARKS:			1				NTS	
		S	AMPLE	STRATA		SAMPLE DE		EXCAVATION
								EFFORT
DEPTH (FT)	voc	NO.	DEPTH					E - Easy
								M - Moderate
								D - Difficult
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						11	1	_
2					nown sil	og san	d, med-true,	
				_ 0	darker w/o	Cepth		
3				+ .		ė	rd, med-fine,	_
4				F 3,	5-4	0 0	*	_
*		1		+ .	ash, coa	suag		_
5		- 1		<b>F</b>		()		-
6				$\perp_{\mathcal{M}}$	)=4:bgs			
			İ	I	= 4.6gs			
7				+	(4)			
8				r	inlti-rae,	Madi	ng=6	_
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9					*			
			1		N.			
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12				-				-
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14				$\perp$				
								1 ]
15								

# APPENDIX H FTMM-18: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

# APPENDIX H: FTMM-18 Landfill Boundary Refinement and Methane Gas Survey Results

### TABLE OF CONTENTS

1.0	TEST PIT DELINEATION SUMMARY	H-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	H-2
3.0	REFERENCES	H-2

### LIST OF TABLES

Table No.	<u>Title</u>	

Landfill Boundary Refinement Summary Methane Gas Survey Results H2

# LIST OF FIGURES

Figure No. Title

H1

H1 Landfill Boundary Refinement and Methane Gas Survey Results

### LIST OF ATTACHMENTS

Attachment Title

H-A Test Pit Logs

### 1.0 TEST PIT DELINEATION SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries are discussed in further detail in the Remedial Investigation Report for FTMM-18 (Parsons, 2015). These changes are reflected on **Figure H1**. In addition, the RI report identified data gaps in the landfill boundaries, specifically along the northern and eastern sides of the site because test pit data from what are currently mapped as non-landfill areas are not available. Subsequent to the preparation of the RI Report for FTMM-18, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. Some historical test pits (6A, 7, 7A, 8, and 8A) that contain landfill debris did not appear to meet the criteria to be considered as part of the delineated landfill. The designation of these historical test pits was modified on **Figure H1** to indicate landfill solid waste was not present.

Test pits during the landfill boundary refinement were initially advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report (Parsons, 2015). Test pits were advanced at 13 locations at FTMM-18 as part of the landfill delineation activities on August 24, 2015. Additional step-out test pits were not performed due to Site conditions due to heavy vegetation consisting of dense brush and trees, and the presence of tidally influenced marsh areas. Historical (2010) and the 2015 test pit locations are shown in **Figure H1**.

Logs for the 2015 test pits excavated in 2015 are provided in **Attachment H-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table H1**.

Observations of the 2015 test pits on the interior of the landfill (M18TP11, M18TP12, and M18TP13) contained solid waste such as concrete pieces, ash, coal, and burned wood indicative of a landfill and consistent with the historical test pits logs. At two test pits along the southern boundary (M18TP16 and M18TP18), large pieces of concrete were observed at the bottom of the test pit. Based on the location of these test pits to the adjacent roads, it is assumed that the concrete is associated with the construction of the roads, and is not indicative of landfill solid waste. No changes were made to the western, northern, and southern landfill boundaries based on the contents of the historical and 2015 test pits. On the east of the landfill (M18TP14, M18TP16, M18TP17, M18TP19, and M18TP20) the 2015 test pits did not contain landfill solid waste and the eastern landfill boundary was moved west to align with the location of M18TP14.

The northern boundary of FTMM-18 was aligned with the northern extent of apparent landfilling based on the historical aerial photos. The mini excavator was unable to progress into the tidally-influenced marshy northern area along Parkers Creek, although historical aerial photographic evaluation indicated that this area was never filled. Based on visual observations of the Site conditions it seems unlikely that landfill material would be buried in between the creek and the northern landfill boundary.

**Figure H1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of six (6) landfill gas readings (including one QA/QC sample) were measured at five soil gas locations at FTMM-18 as part of the methane gas survey. Sampling was conducted on August 5, 2015. Methane was not detected at this landfill. The landfill gas readings are summarized in **Table H2.** The soil gas sampling locations are shown in **Figure H1**.

## 3.0 REFERENCES

Parsons. Remedial Investigation Report for Site FTMM-18, Fort Monmouth, Oceanport, Monmouth County, New Jersey, Final. Prepared for the U.S. Army Engineering and Support Center, Huntsville, Alabama. October 2015.

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

# **TABLES**

Table H1 Landfill Boundary Refinement Summary

Table H2 Methane Gas Survey Results

# Table H1 Landfill Boundary Refinement Summary Site FTMM-18

## Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M18TP8	N	3	No solid waste observed; not landfill.
M18TP9	N	2	Debris of de minimus quantity; not landfill.
M18TP10	Y	1	Solid waste including ash, coal, asphalt indicative of landfill.
M18TP11	Y	1	Solid waste including concrete, ash, burned wood indicative of landfill.
M18TP12	Y	1	Solid waste including concrete, ash, coal indicative of landfill.
M18TP13	Y	1	Solid waste including concrete, brick, ash, burned wood indicative of landfill.
M18TP14	N	3	No solid waste observed; not landfill.
M18TP15	N	3	No solid waste observed; not landfill.
M18TP16	N	3	No solid waste observed; not landfill.
M18TP17	N	2	Debris of de minimus quantity; not landfill.
M18TP18	N	3	No solid waste observed; not landfill.
M18TP19	N	3	No solid waste observed; not landfill.
M18TP20	N	3	No solid waste observed; not landfill.

### **Category notes:**

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

## Table H2 Methane Gas Survey Results Site FTMM-18

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M18SG3	8/5/2015	0.0	0.0	1.3	19.4	
M18SG4	8/5/2015	0.0	0.0	2.4	19.1	
M18SG5	8/5/2015	0.0	0.0	3.5	18.0	
M18SG7	8/5/2015	0.0	0.0	2.8	18.9	
M18SG7QA	8/5/2015	0.0	0.0	3.0	18.8	QA Sample
M18SG9	8/5/2015	0.0	0.0	1.3	20.0	

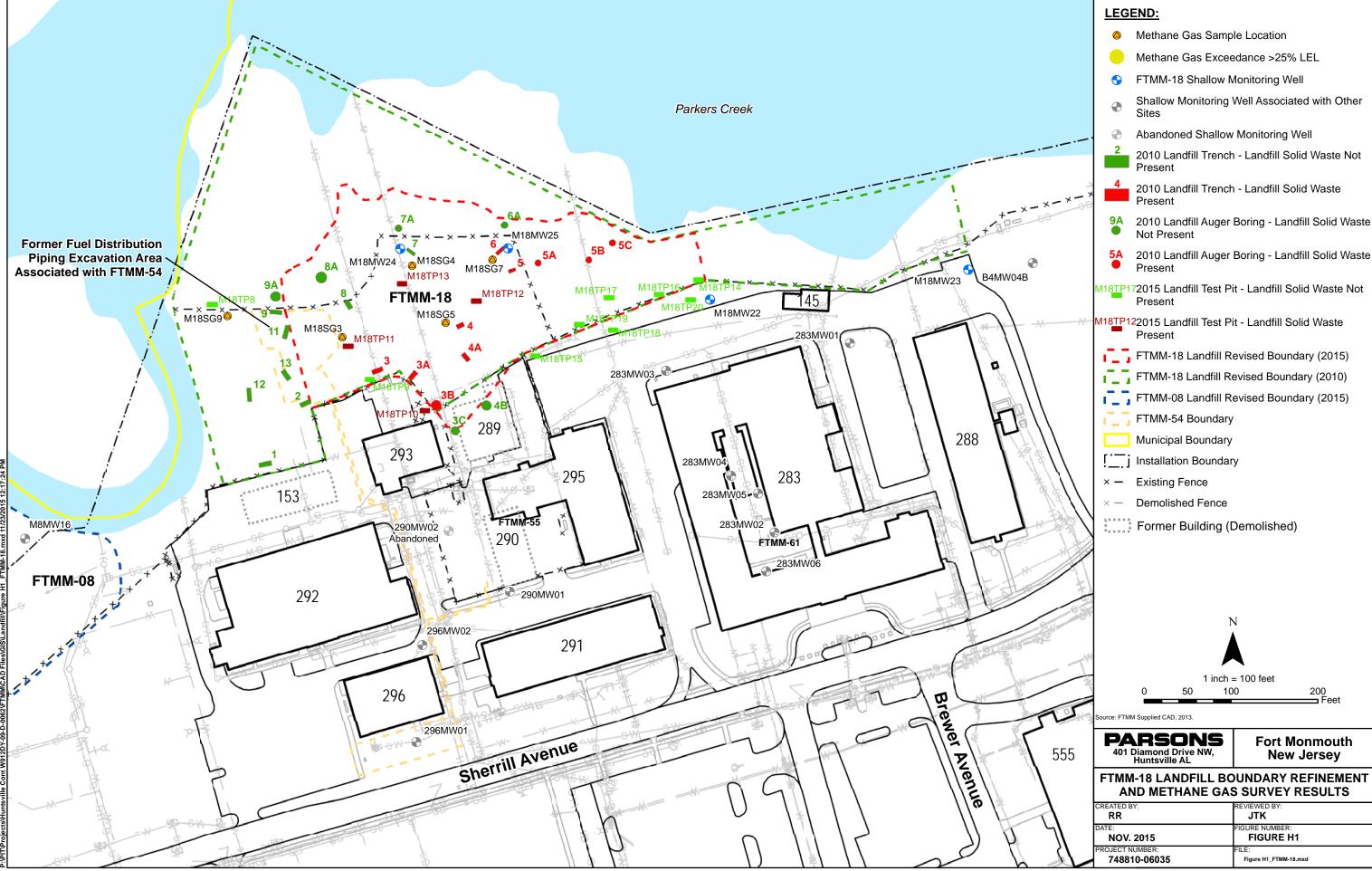
### **Notes:**

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

# **FIGURES**

Figure H1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix H



# **ATTACHMENTS**

Attachment H-A Test Pit Logs

	T	EST PIT FII	ELD LOG	TAGE 1 OF
PARSO	ONS	CLIENT:	TEST PIT NO.:	MISTP8
	MI MIE	3	JOB NUMBER: GROUND ELEV: INSPECTOR:	748810 R.M.D.M.R.d
TEST PIT DATA			CONTRACTOR:	ANIT
LENGTH WIDTH	DEPTH  4' min	EXCAVATION METHOD	START DATE: COMPLETION DATE	082415 1047
GROUNDWATER DATA	7 MAR	1-2K	CHECKED BY:	0624151
	049		CHECKED B1.	
	-11bss		LOCATION SKETCH	
MONITORING DATA			- 4 -	0/-
INSTRUMENT DETERMINENT DETERMINENT DETERMINENT	1 1 1 0	- /r		Phagny te North
REMARKS: immediate	ly N. of dd	Gen ce	Miso osprey	
DEPTH (FT) VOC NO.	DEPTH		SAMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		0-4' black silty organicma Phragmites TD=4' bgs multi-rae,	sand, decay they no was thizomes.	te.

			TES	ST PIT FIE	LD	LOG	PAGE 1 OF
	PA	RSONS		CLIENT:		TEST PIT NO.: 148T	P9
PROJECT:	F	TMM				JOB NUMBER: 7498	10
LOCATIO	N:	and fill	MIB			GROUND ELEV:	- 1
						1 1 2-	nale
LENGTH	TA WIDTH	DEPTH	EV	CAVATION METHOD		START DATE: 082415	11101
io'	18ª		mini-exc			COMPLETION DATE: () 62415	1101
GROUNDWA'	TER DATA		1 / HILL AC			CHECKED BY:	
DATE / TIM	ME	٨	111	/	7/		
DEPTH TO	WATER	/\	MA/			LOCATION SKETCH:	<b>†</b>
MONITORING	G DATA					T	
INSTRUME		DETECTOR	BACKGROUND	TIME/DATE	-1-	E 05N . 01 111	
Multi-R		CCO H2S	Cal. passe	082415/0	HO.	fence  NTS 2 Blds	go North
Plus		ta loxy		V		- fence	
REMARKS:		,				NTS 2 Blow	<b>*</b>
		SAMPLE	STRATA	SA	AMPLE D	ESCRIPTION	EXCAVATION
							EFFORT
DEPTH (FT)	VOC NO	DEPTH					E - Easy
							M - Moderate D - Difficult
2			-0-	-31 brown sili homogeneo	ty s.	andy I sam, asplat about of gpit. ces at about her waste.	
3			F	8"bgs@.	S. ea	dospit.	-
			-	· conquete	sie	ses at about	1 7
4			+	D'has m	o all	her waste.	1 -
5			4	2.9//			1 7
			-	1424			1 -
6			+3'	-4"			1 +
7			-	Silty land	d. m	ottled grey-green	] -
			Τ,			me pebble-size	
8						/	1 ]
			_	gravel			
9			+-7	5=4 bea			_
10			F ' '	1175			-
10			$\pm m$	ueti-rae lea	dine	2:0	
11			F /				
			T				
12							
	1		_				
13	1		+				-
,			F				-
14			+				
15							1 ]

			TES	T PIT FIE	LD LOG	PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: M/8	TPIÐ
PROJECT:	F	TMM			JOB NUMBER: 749	3810
LOCATION		ndfill	M18		GROUND ELEV:	1
				AVA TO THE PARTY OF THE PARTY O	INSPECTOR: L.M.	Donald
TEST PIT DAT		T	T		CONTRACTOR: AU	77
LENGTH 10'	WIDTH 2	DEPTH 4'	mini-exc	CAVATION METHOD	COMPLETION DATE: 0824	15/11/5
GROUNDWAT		1-7	Trum exc	ward	CHECKED BY:	[15]
DATE / TIN		.11	1	1		
DEPTH TO	WATER	N/	A		LOCATION SKETCH:	<b>†</b>
MONITORING	DATA	V				
INSTRUME		ETECTOR	BACKGROUND	TIME/DATE	7/8	1
MultiR		COLHOS	cal.	082415/072	Bidg	North
REMARKS:			15050	oid water line		
reswindres.	no record	pp. core.	4 Eloav	VIA TO ST CITE	NTS	
		SAMPLE	STRATA	SA	MPLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy M - Moderate
						D - Difficult
			- 0-	-/ '		_
1			+ 5	ilta soude	loam hown by	_
2			-	150 Secretary	1 care, surrein any	'   -
			+ /	some graye	P 0	
3			I /'-	-4		
			_ <	CAA Waste	Joan, brown, by gone including sphalt orange sand 4	
4			+ ]	10,000	idalt	-
5			- 9	ish, coar, ac	f price!	- 1
1			+ .;	ith bedded	orange sand +	1 1
6				10	, 0	1 1
				peen sand		
7			+ 7	- 1 h -1		1 4
0			- 11	)=4'bgs		
8			+m	ulti-rae rea	divarda	1 -
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14			+			-
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		- 1				1 -

			TE	ST PIT FIEI	LD LOG	PAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.: M	18TP/1 (near 543
PROJECT:	- 1	MM and G	11 1418		JOB NUMBER: 7 GROUND ELEV: INSPECTOR: R.	48810 490nd
TEST PIT DA	TA				CONTRACTOR: A	WF
LENGTH	WIDTH	DEPTH	E	XCAVATION METHOD	START DATE: OG	2415/1243
6	2'	4'	mini-es	cavato	COMPLETION DATE: 08	32415
GROUNDWA					CHECKED BY:	
DATE / TIP		1 1	A		LOCATION SYPTON	
DEPTH TO			1		LOCATION SKETCH:	<b>↑</b>
MONITORING	Tarking v	DETECTOR	BACKGROUND	TIME/DATE	543	
multi-	Rae Va	(co/425	Cal. pass	11	10	North
PILL	s le	40X4		1	$\dashv$	~35
REMARKS:		J				P9
		SAMPLE	STRATA	SAM	MPLE DESCRIPTION	EXCAVATION
						EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy M - Moderate
						D - Difficult
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1				6f	2	_
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3			-/	-4'		-
1			+	SAA come in	techedded ora	nge -
4				SAA SOMERI	161 as a wall	0   -
			工/	sand, med, li	terbedded ora He gravel - Concrete piece sh, burned woos	
5				· Wastezone	- Concrete place	
			-	to n'dia as	sh, burned wood	*   _
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8				4.05.0	1.	
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15						

	,	TEST PIT FII	ELD LOG	
PAR	SONS	CLIENT:	TEST PIT NO.: M   4	3TP12
PROJECT: FT LOCATION: La	MM ndGIIMIS	5	GROUND ELEV:	8810 Donald
TEST PIT DATA  LENGTH WIDTH  7 3'  GROUNDWATER DATA	LENGTH WIDTH DEPTH EXCAVATION METHOD  7 3 3.5 Mini-excavator			415/1256
Multi-Rae VOC	TECTOR BACKGR		LOCATION SKETCH:  07/0  S45  NTS	°S47   North
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH		SAMPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		TD=3.5160	Ity Sand topavel, pepple-size gravel, luding pieces of it dia. ash,	

		TI	EST PIT FIEI	LD LOG	PAGE 1 OF
	PARSONS		CLIENT:	TEST PIT NO.: M/87	P13
PROJECT: LOCATION:	FTMM Land F	II M18		JOB NUMBER: 7488  GROUND ELEV: INSPECTOR: R. M. G.	310 Sonald
GROUNDWATER DATE / TIME DEPTH TO WAT MONITORING DA	TER TA	mini-	EXCAVATION METHOD  VXCAV A TO 1	CONTRACTOR: AWT	15/1309
INSTRUMENT  MULTI-RA  Plus  REMARKS:	VOCICO H2S	Cal.	1 082AIS 07	NTS S	94 North
DEPTH (FT) VO	SAMPLE C NO. DEPTH	STRATA	SAI	MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			5-3.5'	ty town Sand, med size gravel - concrete, brick, I wood	

PROJECT: FTMM OBNIMBER: OBNIMBER: JAVO D OBNIMBER: ON ON INDESTRUCTOR DESTRUCTION OF THE PROJECT OR ON OTHER OBNIMBER: OBNIMBE					r	<b>FES</b>	T PIT FI	ELD	LOG		FAGE 1 OF
TEST PIT DATA  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE (027-15) [036]  CROUNDWATER DATA  DATE THATE  MOSTICING DATA  DEPTH OT VOC NO. DEPTH  SAMPLE STRATA  SAMPLE DESCRIPTION  PLUS 12td / 024  SAMPLE STRATA  SAMPLE DESCRIPTION  PLUS 12td / 024  SAMPLE STRATA  SAMPLE DESCRIPTION  PLUS 12td / 024  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  FORCE  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  EXCAVATION  EFFORT  E- Gay  North  PLUS 12td / 024  SAMPLE DESCRIPTION  FORCE  EFFORT  E- Gay  North  PLUS 12td / 024  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  SAMPLE DESCRIPTION  FORCE  EFFORT  E- Gay  North  AM Adente  D- Difficult  1  1  1  1  1  1  1  1  1  1  1  1  1			PAR	SONS			CLIENT:		TEST PIT NO.:	AMM	18TP14
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IEST PIT DATA  LENGTH WIDTH DEPTH EXCAVATION METHOD START DATE (07.74 15) 1039.  GROUNDWARE DATA  DATE / TIME  DEPTH OWNTER  MONITORING DATA  INSTRUMENT DETECTOR BACKGROUND TIMEDATE  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PLUL 15 FAR VORLEHAS (al. passed 08.2715/0730)  PASSET (al. passed 08.2715/0730)  PAS			10	and Fi	11 119	3			The second secon	710010	
DEPTH OF THE PROPERTY OF THE									INSPECTOR:	R.Mason	iald
GROUNDWATER DATA  GROUNDWATER DATA  DATE TIME  DEPTH TO WATER  MONITORING DATA  INSTRUMENT  DEPTH DELECTOR  SAMPLE  SA	TEST PIT DA	TA			1				CONTRACTOR:		
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# APPENDIX I FTMM-25: LANDFILL BOUNDARY REFINEMENT AND METHANE GAS SURVEY RESULTS

Appendix I

# APPENDIX I: FTMM-25 Landfill Boundary Refinement and Methane Gas Survey Results

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1.0	TEST PIT DELINEATION SUMMARY	I-1
2.0	METHANE GAS SURVEY ACTIVITIES AND RESULTS	I-2
3.0	REFERENCES	I-2

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I1	Landfill Boundary Refinement Summary
I2	Methane Gas Survey Results

### LIST OF FIGURES

Figure No.	Title
I1	Landfill Boundary Refinement and Methane Gas Survey Results

### LIST OF ATTACHMENTS

Attachment	11tle
I-A	Test Pit Logs

### 1.0 TEST PIT DELINEATION SUMMARY

Prior to test pit advancement, the landfill boundaries were reexamined by Parsons using the historical aerial photographs, and available historical test pit and soil boring data. The historical information review and related changes to the landfill boundaries will be discussed in further detail in the Remedial Investigation (RI) Report for FTMM-25 that will be issued under separate cover. These changes are reflected on **Figure I1**. The historical information review identified data gaps in the 2010 landfill boundaries. In addition, subsequent to the preparation of the RI Report for FTMM-25, historical test pit and soil borings were reassessed for consistency with the 2015 landfill delineation landfill waste criteria. Some historical test pits (8, 8A, 8B, and 15) did not appear did not appear to meet the criteria to be considered landfill solid waste. The designation of these historical test pits was modified on **Figure I1**.

Test pits during the landfill boundary refinement were initially advanced along the 2015 landfill boundaries to refine the landfill extent, and to address the data gaps identified in the RI report (Parsons, 2015). To form a more comprehensive view of the landfill, test pits were performed in other areas of the landfill. To confirm the historical test pit contents in the eastern portion of the landfill, test pits were advanced in the interior of the landfill since there was limited test pit data in this area. Test pits were advanced at 22 locations at FTMM-25 as part of the landfill refinement activities on September 1 and 2, 2015. Historical (2010) and the 2015 test pit locations are shown in **Figure I1**.

Logs for the test pits conducted in 2015 are provided in **Attachment I-A**. A summary of the test pit observations including the test pit ID, if contents were representative of landfill solid waste, the category, and rationale is presented in **Table I1**.

On the eastern portion of the landfill south of Shrewsbury Creek, observations of the 2015 test pits along the landfill northern (M25TP14) boundary and eastern boundary (M25TP10 and M25TP11) did not contain solid waste indicative of a landfill. Along the southern boundary M25TP5 was determined to consist of scattered debris that was not contiguous and was categorized as debris of *de minimus* quantity that did not meet the criteria to be considered as part of the delineated landfill. In the interior test pits, landfill solid waste such as ash, coal, slag, glass, brick, metal, and burned wood was observed. These observations were consistent with the historical test pits. At the eastern portion of the landfill, the landfill boundaries were not changed based on the contents of the historical and 2015 test pits.

To the northeast of the FTMM-25 landfill there are ten above-ground debris piles shown on the figure. These debris piles if varying sizes are located over 300 feet from the eastern landfill boundary and are not considered part of the landfill.

On the western portion of the landfill north of Shrewsbury Creek, based on historical aerial photographs in conjunction with 2015 test pit data, the 2010 landfill boundary north and west of Shrewsbury Creek previously shown has been removed, and the revised boundary is on the eastern side of Shrewsbury Creek in this area. On the western portion of the landfill north and west of Shrewsbury Creek, solid waste indicative of a landfill was not observed in the 2015 test pits (M25TP2, M25TP3 and M25TP7) and in the historical test pits 1, 7, 8, 8A, 8B, 8C, 9, 11, 12, 13, 15, and 15A. In addition, historical aerial photos show a road crossing Shrewsbury Creek from the south to north with no filling directly observed in the area to the west of Shrewsbury Creek (between the creek and road). Miscellaneous singular pieces of debris

observed may be attributed to use of this road to access the landfill south of the creek to areas farther north.

**Figure I1** shows the refined landfill limits based on the 2015 test pit data, available historical test pit and soil boring data, and historical aerial photographs.

### 2.0 METHANE GAS SURVEY ACTIVITIES AND RESULTS

A total of eight (8) landfill gas readings (including one QA/QC sample) were measured at seven soil gas locations at FTMM-25 as part of the methane gas survey. Sampling was conducted on August 5, 2015. Methane was detected at one location (M25SG4), and this location exceeded 25 percent of the methane LEL. Two step out locations (M2S5G6 and M2S5G7) were measured based on these methane detections. The collective methane results indicate the area within the landfill where methane was found above 25 percent of the LEL is limited. Soil gas locations on the perimeter (including step outs) of the landfill did not have methane detections and showed that landfill gases were not migrating off-site at FTMM-25. The methane detections are most likely attributed to methane gas generating conditions at the landfill. The landfill gas readings are summarized in **Table 12.** The soil gas sampling locations and the location where landfill gas exceeded 25 percent of the LEL are shown in **Figure 11**.

### 3.0 REFERENCES

Princeton Hydro, Sanitary Landfill Disruption Approval Construction Closeout Report, Monmouth County, NJ. January 2011.

# **TABLES**

Table I1 Landfill Boundary Refinement Summary

Table I2 Methane Gas Survey Results

# Table I1 Landfill Boundary Refinement Summary Site FTMM-25

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Test Pit	Landfill Solid Waste?	Category	Comments
M25TP1	N	2	Debris of de minimus quantity; not landfill.
M25TP2	N	3	No solid waste observed; not landfill.
M25TP3	N	3	No solid waste observed; not landfill.
M25TP4	Y	1	Solid waste including ash, some metal and burned wood, broken glass indicative of landfill.
M25TP5	N	2	Debris of de minimus quantity; not landfill.
M25TP6	Y	1	Solid waste including ash, coal, wood, glass bottles, broken glass, broken ceramics and terracotta, metal, misc plastic, wire indicative of landfill.
M25TP7	N	3	No solid waste observed; not landfill.
M25TP8	Y	1	Solid waste including ash, coal, slag, glass bottle, broken glass, brick, concrete, burned wood, metal wire indicative of landfill.
M25TP9	N	2	Debris of de minimus quantity; not landfill.
M25TP10	N	3	No solid waste observed; not landfill.
M25TP11	N	3	No solid waste observed; not landfill.
M25TP12	Y	1	Solid waste including burned lumber, ash, metal, broken ceramic indicative of landfill.
M25TP13	N	3	No solid waste observed; not landfill.
M25TP14	N	3	No solid waste observed; not landfill.
M25TP15	Y	1	Solid waste including ash, coal, slag, some broken concrete indicative of landfill.
M25TP16	Y	1	Solid waste including ash, coal, slag, glass, brick, burned wood, metal, concrete indicative of landfill.
M25TP17	Y	1	Solid waste including broken glass, brick, coal, ash, misc metal, glass bottle indicative of landfill.
M25TP18	Y	1	Solid waste including ash, coal, slag, broken glass indicative of landfill.
M25TP19	Y	1	Solid waste including ash, coal, slag, broken glass, brick indicative of landfill.
M25TP20	Y	1	Solid waste including ash, coal, slag, broken glass, broken glass, burned wood indicative of landfill.
M25TP21	Y	1	Solid waste including ash, slag, rusting metal, broken ceramic, wood indicative of landfill.
M25TP22	N	2	Debris of de minimus quantity; not landfill.

### Category notes:

- 1) Contiguous soil and solid waste mixture. Solid waste indicative of landfill.
- 2) Soils with miscellaneous singular pieces of debris or scattered debris that is not contiguous. Debris of de minimus quantity; not landfill.
- 3) Soils only. No solid waste observed; not landfill.

## Table I2 Methane Gas Survey Results Site FTMM-25

# Landfill Boundary Refinement and Methane Gas Survey Report for Nine Landfills Fort Monmouth, New Jersey

Soil Gas Sampling Point	Date	Percent Methane	Percent of LEL	Percent Carbon Monoxide	Percent Oxygen	Comments
M25SG1	8/5/2015	0.0	0.0	0.5	20.3	
M25SG1QA	8/5/2015	0.0	0.0	0.7	20.0	QA Sample
M25SG2	8/5/2015	0.0	0.0	6.6	14.9	
M25SG3	8/5/2015	0.0	0.0	11.6	11.4	
M25SG4	8/5/2015	5.8	OOR	10.4	4.4	
M25SG5	8/5/2015	0.0	0.0	1.1	19.8	
M25SG6	8/5/2015	0.0	0.0	6.7	15.3	Step out
M25SG7	8/5/2015	0.0	0.0	1.1	19.1	Step out

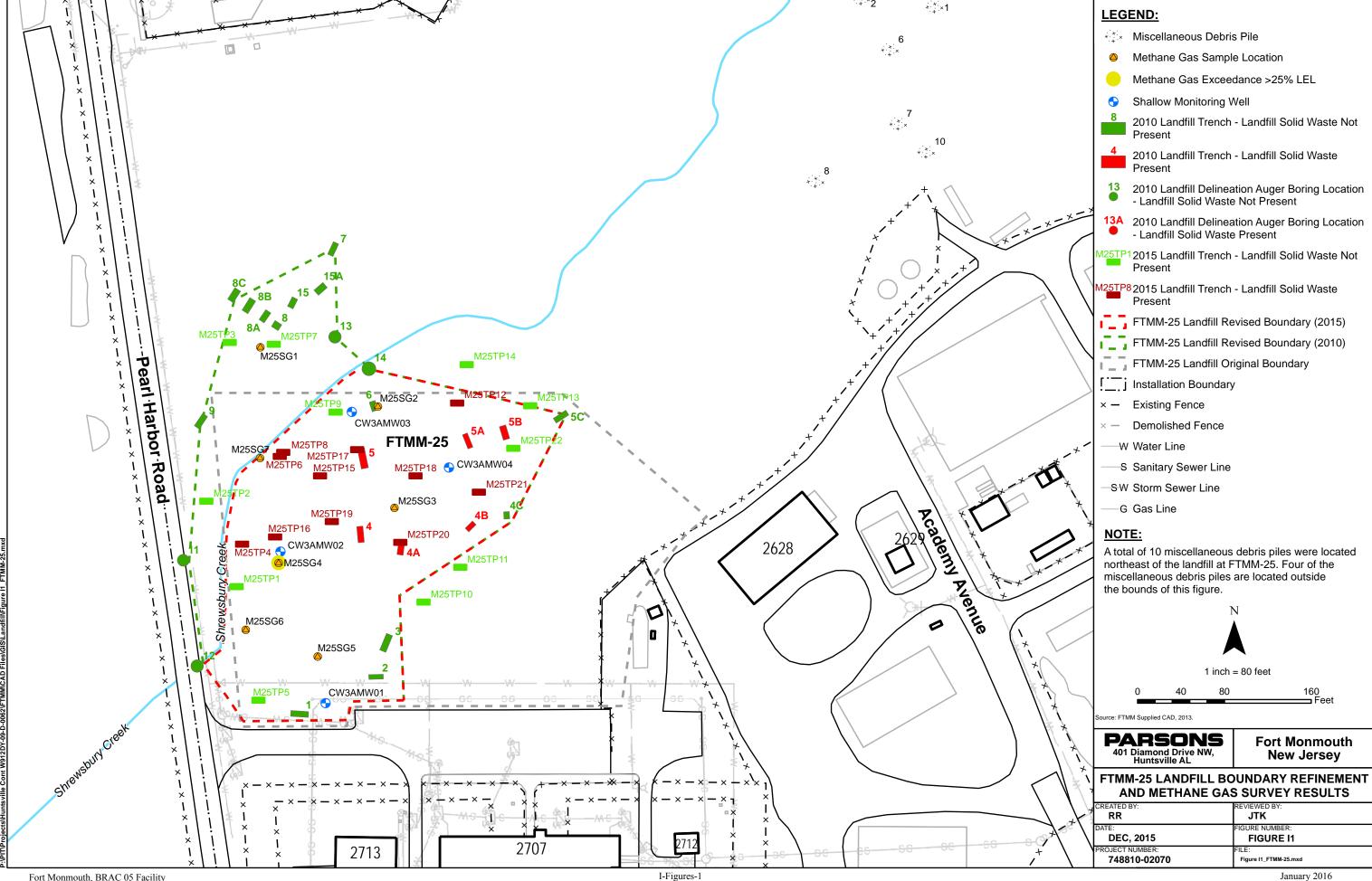
#### Notes:

- 1) OOR = Out of Range. Percent of Lower Explosive Limit was greater than 100% and out of the range of the instrument.
- 2) A LANDTEC Gas Extraction Monitor-2000 (GEM-2000) provided an instantaneous measurement of landfill gases. Each gas sample was analyzed for percent methane, percent of methane Lower Explosive Limit (LEL), percent CO (Carbon Monoxide), and percent oxygen.

# **FIGURES**

Figure I1 Landfill Boundary Refinement and Methane Gas Survey Results

Appendix I Landfill Boundary Refinement and Methane Gas Survery Report for Nine Landfills



# **ATTACHMENTS**

Attachment I-A Test Pit Logs

TEST PIT FIELD LOG										
	PAR	SONS			CLIENT:		TEST PIT NO.: M257	P1		
PROJECT: FTMM LOCATION: Landfill M25						JOB NUMBER: 748816  GROUND ELEV: INSPECTOR: R. M. Donald				
			-	CONTRACTOR: AW START DATE: 0901  COMPLETION DATE: 0901  CHECKED BY:			5/0930			
DEPTH TO WAT MONITORING DA' INSTRUMENT MULTI- RAE Plus REMARKS:	DE VOC	TECTOR ICO/H <sub>2</sub> S	BACKGROU Call, Dass	- 11	TIME/DATE 090115/0715		LOCATION SKETCH:	North		
DEPTH (FT) VOC		AMPLE DEPTH	STRATA		SAM	PLE D	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult		
1				abla	nown silte gravel, dry oucrete so a large (n at 11.5'k D=4' bgs ulti-ral rea	0	sand, some loose ces, including t <sup>3</sup> ) footing) so. No other wast			

	T	EST PIT FIELD	LOG			
PAR	SONS	CLIENT:	TEST PIT NO.: M257	PZ		
LOCATION: La	MM adfill M25		JOB NUMBER: 7488/ GROUND ELEV: INSPECTOR: R. M. D. OT			
TEST PIT DATA  LENGTH WIDTH  Length 2!  GROUNDWATER DATA  DATE/TIME	DEPTH Mini	EXCAVATION METHOD -EXCAVATOR	CONTRACTOR: AWT  START DATE: 090(15   1352  COMPLETION DATE: 090   15  CHECKED BY:			
A 1	ETECTOR BACKGROU		LOCATION SKETCH:	North		
DEPTH (FT) VOC NO.	AMPLE STRATA DEPTH	SAMPLE I	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult		
1		D-4! brown silty, sa some gravel, of lots of true so  Q4' lithe ash t coar sand  TD=4'bgs  multi-val readin	l, pale green			

			TI	EST PIT FI	ELD	LOG		TAGE T OF	
	PA	RSONS		CLIENT:		TEST PIT NO.:	M251	P3	
PROJECT:	F	-TMM				JOB NUMBER:	749811	)	
LOCATION	v: Lo	indfill	M25			GROUND ELEV:			
						INSPECTOR:	2.1490	rald	_
TEST PIT DAT	1		Τ			CONTRACTOR:	AWT	11010	_
LENGTH 5,5	WIDTH			excavation method		START DATE: COMPLETION DATE:	090115/	1345	-
GROUNDWAT		+-	Tright-	excavaror		CHECKED BY:	190113		
DATE / TIM		Α/	11.4		7				_
DEPTH TO	WATER	/\	IN		1/	LOCATION SKETCH:	^	. 4	
MONITORING	DATA					3	3	p7	
INSTRUME		DETECTOR	BACKGROUNI			12 41	-	( .	
Multi-Re		OCICO 1H2S	Cal pass	rd 090115/0	0715	13		North	
Plus	12	EYOXY				H	*		
REMARKS:		J				nts		_	
		SAMPLE	STRATA		SAMPLE D	ESCRIPTION		EXCAVATION	
								EFFORT	
DEPTH (FT)	VOC NO	). DEPTH						E - Easy	
								M - Moderate D - Difficult	
				4:					
1			+,	0-41		/*			4
			١,	1-4' tanto or fine-med pebble-siz I', dry No Waste		1.11. 10	1		-
2			+	tanto or	angl	Actory sa	nd,		$\dashv$
3			-	fine-med	1, well	Sorted A	ome		-
			+	nephlo-in	0 010	wel in to	ó .		1
4				person sig	e gen	out the of			7
	1		T	1, dry	toda	mp			]
5				1		,			1
	- 1		-	1/					4
6			-	No Waste					+
7			-						+
'-			+	7 - 111	1				+
8				10=4'bg	3				1
			T	O					1
9			$\perp$	multi-ral	Mad	ines = A			]
			L '	maca	nuna	7		1	1
10			-			U			+
.,			-						-
11			+			×	1		+
12			<b>-</b>				1		1
									1
13			工						
			T						
14								,	1
,,			-				1		-
15	1		+						4

		TES	ST PIT FIELD	LOG	PAGE 1 OF /
	PARSONS		CLIENT:	TEST PIT NO.: M25T	04
PROJECT: LOCATION:	FTMM Landfi	11 M25		JOB NUMBER: 7498/ GROUND ELEV: INSPECTOR: R.11438	10 nald
	1/		CAVATION METHOD  X CAVATOR	CONTRACTOR: A WT START DATE: 090115 COMPLETION DATE: 090115 CHECKED BY:	0945
MONITORING DATA INSTRUMENT MULTI-RAL PIUS REMARKS:	DETECTOR VOC/CO/H2S LELYOXY	BACKGROUND  COL.  Passed	TIME/DATE 090115/0730	TP4	
DEPTH (FT) VOC	NO. DEPTH	STRATA	SAMPLE I	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1			dk. brown to	d wood, broken	

			T	EST PIT	FIELD	LOG	TAGE 1 OF		
	PAR	SONS		CLIENT:		TEST PIT NO.: M25T	P5		
PROJECT: LOCATION:	FT	MM and fi	11 1425			JOB NUMBER: 7488 GROUND ELEV: INSPECTOR:	10		
TEST PIT DATA						CONTRACTOR: ANT	oraxa		
61 1				EXCAVATION METH		START DATE: 090   15   0852   COMPLETION DATE: 090   15   CHECKED BY:			
DATE / TIME DEPTH TO WAT	ER	N,	A	1	7/	LOCATION SKETCH:	<b>†</b>		
MONITORING DAT INSTRUMENT MULTI-RAL PLUS REMARKS:	VOC/	TECTOR COHLS LOXY	BACKGROU Cal. Pas	1	1	NIS Park	North		
DEPTH (FT) VOC	NO.	AMPLE DEPTH	STRATA		SAMPLE D	ESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult		
1				2'-2.5' Waste-	ash, co. h-bioni oorly gi	T .			

		TEST	PIT FIELD	LOG	The second secon		
PAR	SONS	C	LIENT:	TEST PIT NO.:	M25TP6		
	THIM and fill h	125		JOB NUMBER:  GROUND ELEV: INSPECTOR:	748810 2.McDonald		
LENGTH WIDTH  O 1 2011  GROUNDWATER DATA  DATE / TIME	DEPTH 4.5 1 12	EXCAV	ATION METHOD  avator	CONTRACTOR:  START DATE:  COMPLETION DATE:  CHECKED BY:	PLETION DATE: 090115 100 (0		
Multi-Rae Voc	colH35 ca	ekground 1. Passed	TIME/DATE 090115/0715	LOCATION SKETCH:	TPB North		
DEPTH (FT) VOC NO.	AMPLE STRA	NTA .	SAMPLE D	ESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult		
1		1.5 the 2.5 was of pi	1.5' cown silty some gravel, -2.5' brown tota d-fine, well -4.5' ) aste incl. odd, glass be lass broke enacetta, n astic, wire 4.5'bgs lti-rae rea	n sand, sold sorted  ash, coal, offles, beomeranic metal, mi	ilty :		

			TES	ST PIT FIELD	LOG		PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.:	M25TF	7
PROJECT:	F	ПММ			JOB NUMBER:	748810	
LOCATION: Land fill M25					GROUND ELEV:		
		110.2			INSPECTOR:	R.MyDO	rald
TEST PIT DATA	A WIDTH	DEPTH	EV	CAMATION METHOD	CONTRACTOR:	AWT	1339
LENGTH	7.i	A <sup>i</sup>		CAVATION METHOD	START DATE: COMPLETION DATE	090115	1339
GROUNDWATI	ER DATA		VIIII	, (2000)	CHECKED BY:	0101131	
DATE / TIM	Е	K / /	1	11/			
DEPTH TO V	VATER	11/	77		LOCATION SKETCH:		1
MONITORING I					- /5	TP3	TP7
Multi-Ra		CO/H <sub>2</sub> 5	BACKGROUND	090115/07/5	135	•	North
Plus	& VOL	UDXU.	Cal-passed	070113/07/0			North
REMARKS:		7000		The second secon	<b>-</b>	10/	
				New rest Charles	NTS	,	
	S	AMPLE	STRATA	SAMPLI	E DESCRIPTION		EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH					E - Easy
							M - Moderate
							D - Difficult
			-0	2008 silty cootzone, du			1 -1
1			+ 1	siown silty	, sandij	loans	
2				controne da	X	9	
			T	ger, acc	1		]
3			1907		)	196	
		1		8-4"			_
4			+ 0	rangish-bion	msilty sa	ed.	
5			m	ed-fine, well gravel	e sotal o	:41,	
				212120	To i day	11 9	
6			4	graves			
_ —			F 1	10 Waste			-
7			(1)				
8			14	1=4'bgs			7
			TIL	s - i sys			]
9			$\perp m$	ulti-valuead	(ha = 1		
			-		10		-
10			-		V		-
11			=			•	
		Ų.					
12							
							-
13			+				-
14		ł	-				-
15							_

		TES	T PIT FIELD	LOG	PAGE 1 OF
PAR	ISONS		CLIENT:	TEST PIT NO.: M25 T	P8
PROJECT: LOCATION:	TUM and fill	M25		JOB NUMBER: 74881  GROUND ELEV: INSPECTOR: R.M.A.D.D.	
TEST PIT DATA  LENGTH WIDTH  OF TOTAL STATE OF THE STATE	DEPTH 4.5' /		AVATION METHOD  (CONSTO)	CONTRACTOR: AWT  START DATE: 090115  COMPLETION DATE: 090115  CHECKED BY:	11023
	Ice HS C	ACKGROUND a.D. passed	TIME/DATE 090115/0715	LOCATION SKETCH:	North
DEPTH (FT) VOC NO.	SAMPLE ST	TRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		-3! 	iown to or ity sand one as phat op 8"	l will	

	TE	ST PIT FIE	LDLOG	PAGE 1 OF
PARSON		CLIENT:		125TP9
PROJECT: FTM LOCATION: Land	M GII M25		JOB NUMBER: 7 GROUND ELEV:	49810 2,44) onald
TEST PIT DATA  LENGTH WIDTH DEI  10, 5 2 4  GROUNDWATER DATA  DATE/TIME DEPTH TO WATER	7 1 1	CAVATION METHOD  XCANATON	CONTRACTOR:	90115/1037
MONITORING DATA  INSTRUMENT DETECTOR  Multi- Pae Woccopy  Plus LECTOX  REMARKS:	425 cal pass	TIME/DATE 090115/07/:	the drow	tr9 E HWO3 North
DEPTH (FT) VOC NO. DEPT			MPLE DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		5-4' dk gray s ned-coalse	ty sand, med  1) tree roots  termittantpise brick  ilty sand, some bia  itter, V. mois	ck -

	TES	T PIT FIELD	LOG	TAGE T OF
PARSONS		CLIENT:	TEST PIT NO.: M25 TF	10
PROJECT: FTM			JOB NUMBER: 74881	0
LOCATION: Land	GII M25		GROUND ELEV:	
TEST PIT DATA			INSPECTOR: R.M. 400 CONTRACTOR: AM/T	nald
LENGTH WIDTH DEPT	EXCA	VATION METHOD	START DATE: 1901/5/	0907
5.51 201 41	mini-exc	avator	COMPLETION DATE: 090/15	0101
GROUNDWATER DATA			CHECKED BY:	
DATE / TIME	11/1	1		
DEPTH TO WATER /	MATI		LOCATION SKETCH:	1
MONITORING DATA	DACKCDOLDID	TUCATE	OT	Pij
Multi-Rae VOC COH,	BACKGROUND S Ca O. Dassed	09011510785	· ·	North
Plus Lelloxi		0101.510105	<del></del>	North
REMARKS:			TPIO	
			L N15	1
SAMPLE	STRATA	SAMPLE L	DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT) VOC NO. DEPTH				E - Easy
				M - Moderate
				D - Difficult
	1 -0-	.0.51		-
' <del>-  </del>	1 + %	in a will 1	indy loam. matter (fallen	-
2	- 0	in stray, No	may loam.	
	Tlo	tsof organic	matter (fallen	
3	1 tea	mes, etc.), dr	11	_
	1		X .	-
4——	+0.5	-41	U	-
5	1 F 1	ando silta da	adula al	_
	1 + 00	ange silty sa	C. Walley	
6	I JA	tales med-	the, well	
	1 10	ried, gravel,	is pebble size,	_
7	+ ive	Il-rounded	, ,	-
8	-			-
	+			
9	L	- 411		]
	F 1 12	=4'bgs		<i>r</i>
10	1	9		-
,,	- mu	lti-ral readi	1g=0.	4
11	1 +		0	4
12				-
	T			
13	+			
	<b> </b> -			-
14	+			+
15	上			

				7	ΓES	T PIT FI	ELD	LOG		PAGE 1 OF /	
		PAR	SONS			CLIENT:		TEST PIT NO.:	25T	PII	
PROJECT	·:	F	TWM					JOB NUMBER: 7	48810	)	
LOCATIO	N:	10	ind fil	M2:	5			GROUND ELEV:			_
	-				-			INSPECTOR:	M4Da	male	_
TEST PIT DA	1		т	T				CONTRACTOR: A	WT	1 = 1 = 1 =	
LENGTH		DTH B"	DEPTH 5	200:10		AVATION METHOD		START DATE:	5090	115/085	6
- Ce		<u></u>	15	MIN	1-0%	cavato	7	COMPLETION DATE: 09	0115	,	_
GROUNDWA DATE/TI		AIA	1 . 1	11 .	T /	7 -		CHECKED BY:		- Alexander	_
DEPTH TO		R	IN	1.A			/	LOCATION SKETCH:			_
MONITORING				1/2/2/						Ī	
INSTRUM			ETECTOR	BACKGRO	UND	TIME/DAT	E				
Multi	Rae	Voc	celt15	Cal. Do	158ed	090115/0	715		TP	North	
Plus		Lt	1111111	1				0			
REMARKS:			7 - 0					TPIO			
	T-	T	SAMPLE	STRATA		THE PERSON OF TH	SAMPLE D	NTS DESCRIPTION		EXCAVATION	_
		-	AMPLE	SIKAIA			DAMI LL D	LICKII TION		EFFORT	
DEPTH (FT)	voc	NO.	DEPTH							E - Easy	
										M - Moderate	
										D - Difficult	_
	-			1	-0-	051					-
1	-			+	- ,	. 11	1	0 1: -			-
2				-	- b	cown sill	y loa	m, lots of			-
-				+	Bi	aquir ha	Itan	m, lots of			-
3	1 1			1	-	J GE MG	ar ce				-
					0.5	- 4					7
4	1 1				AP	daish ora	angish	i-hinon rilta	1		
					10	4 d = 1	0	Little graves en sand	b 1		
5		- 1			.44	na, med-	- Ane,	lettle grave	۲,		
					. to	pl'is lor	se th	en sand			
6				+	. ,	/	1	0, 1			4
				-	. be	comes d	ittica	lt to advanc	2		4
7				-	be	icket cho	reh				4
				-			0				+
°-			- 1	+	No	Waste					$\forall$
9				-	. 4		40				$\forall$
			1	+		4(1	620			1	1
10					11.	5=4'bg	A		1		7
				T			,	7.4			7
11				$\perp$	mu	Oti-rae D	luste	rading: 6	1		]
					,	1			ľ		1
12				+							4
			- 1	-							4
13				+							-
				-							+
14				+							-
15				上							

	TEST PIT FIEL	D LOG	PAGE 1 OF
SONS	CLIENT:	TEST PIT NO.: M25	5 TP12
ПИМ		JOB NUMBER: 74918	310
and fill M	15	GROUND ELEV:	A
		INSPECTOR: P.MC	Donald
		CONTRACTOR: AWT	-
. = /			5/1051
4.3 111	ni-excavator	D 10113	- /
1053		CHECKED B1.	
41		LOCATIONSKETCHTLASING	ge +
			5
	Jassed 090115/0715		North
Yoxy		14.0	4
		NTS	MW04
AMPLE STRAT	SAM	PLE DESCRIPTION	EXCAVATION
			EFFORT
DEPTH			E - Easy
			M - Moderate D - Difficult
	brown sil gravel, med dry 3.5'-4.5' waste-mes some ash, ceramics.	tly lumber, burned, metal, broken Vet.	
	DEPTH  4.5' M  1053  TECTOR BACKO  CO H25 COL.	DEPTH EXCAVATION METHOD  4.5' MINI-EXCAVATO  1053  4'  TECTOR BACKGROUND TIME/DATE  CO/H2S Cal. passed 090/15/07/5  LOXY  AMPLE STRATA SAM  DEPTH  - 0-3.5  - brown sil  gravel, med  dry.  3.5-4.5'  waste-mos.  some ash, ceramics.i  - D=4.5'bgs	DOB NUMBER: 749/10 and fill 1/25  DEPTH EXCAVATION METHOD START DATE: 0901/15  DEPTH EXCAVATION METHOD START DATE: 0901/15  COMPLETION DATE: 0901/15  CHECKED BY:  LOCATION SKETCH LIGHTHAM  THECTOR BACKGROUND TIMEDATE  COLLEG BY:  NTS  MAPLE STRATA SAMPLE DESCRIPTION  DEPTH  DEPTH  DEPTH  -0-3.5  - brown silty sand, some gravel, med-fine, well sorted, and any metal, broken ceramics. Wet.

			T	ES	T PIT FIELI	DI	LOG	TAGE 1 OF	-
	PAR	SONS			CLIENT:		TEST PIT NO.: M25 TI	0/3	
PROJECT:	FI	MM					JOB NUMBER: 748810	7	
LOCATION		nolfill	M25			$\neg$	GROUND ELEV:		
							INSPECTOR: R. MCDON	rald	_
TEST PIT DAT.	`A						CONTRACTOR: AUIT		
LENGTH	WIDTH	DEPTH		EXCA	VATION METHOD	s	START DATE: 090115	11101	
6.5	20"	4.51	minie	xca	vator		COMPLETION DATE: 090 15		_
GROUNDWAT							CHECKED BY:		_
DATE / TIM		NI	1	1	1		OCATION OVERON		_
DEPTH TO		1 - 17				-	OCATION SKETCH: TP12	<b>↑</b>	
MONITORING INSTRUMEN		TECTOR	BACKGROU	ND	TIME/DATE	$\dashv$	Trp 13	,	
Multi-R		100/Has	Cal Das		090115/0715		VIPE	> I North	
pius		LIOXY	code par	1501	0,0110,0110			Holur	
REMARKS:		100				Ti.	o MWO4		
	-						NTS		
	SA	AMPLE	STRATA		SAMPL	LE DE	SCRIPTION	EXCAVATION	
12,2727,072,800,073								EFFORT	
DEPTH (FT)	VOC NO.	DEPTH						E - Easy	
								M - Moderate D - Difficult	
				12	151			Τ	
1				0-	4.51	,	1		
			_	fo	an Ally S	an	gravel top, foredband		4
2			+	e	oose som	e	gravel top		4
_			-	11	24 Di. Ita	n al	lood band		4
3			+	12	, signue	-1	o or the original	-	+
4			-	fi	om 18" to 2	2'		-	1
'-		- 1	+		om 18" to 2 10 Waste			-	1
5		- 1		V	o Waste			-	1
									1
6				TA	= 4.5'bgx				]
			_	1 .0	1.5			_	1
7					11: 100 000	1		_	1
			-	mu	lti-vae rea		ing = 0	-	4
8			-					-	+
0			-			4		-	+
<b>'</b> —		1	+	3				-	1
10		1	F					-	1
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11									1
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12								_	
			_						1
13								_	1
			-					_	-
14			+					-	
15			-					-	1
13			-					1	1

		TEST PIT FIELD	LOG	TAGE T OF
PAR	SONS	CLIENT:	TEST PIT NO.: M2577	014
PROJECT: FI	MM ndfill 1	125	JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: 2.M. Done	ald
TEST PIT DATA			CONTRACTOR: AWT	
LENGTH WIDTH	DEPTH	EXCAVATION METHOD	START DATE: 0901151	1200
0.51 2'	4' W	ini-excavator	COMPLETION DATE: 090115	
GROUNDWATER DATA	14		CHECKED BY:	
DATE / TIME	N/A	11/1		
DEPTH TO WATER	1417		LOCATION SKETCH:	1
MONITORING DATA	TECTOR DAG	VCD OLD TO TO TO TO	- 11 TP14	
Multi-Rae Voc	Co/H2S Ca	Dassed 090115/07/5	38'17'	l North
REMARKS:	Yoxy	4	TTP12	
			NTS	
S	AMPLE STR.	SAMPLE	DESCRIPTION	EXCAVATION
DEPTH (FT) VOC NO.	DEPTH			E - Easy
DEFIN(FI) VOC NO.	DEFIN	1		M - Moderate
				D - Difficult
1		- silty sandrof of silty sandrof of brown grading brown, look true roots to throughout - TD=4' bgs - multi-val read		

				7	<b>TES</b>	T PIT FIEI	LD	LOG	PAGE 1 OF
	ı	PAR	SONS			CLIENT:		TEST PIT NO.: 1425 TP	15
PROJECT:		_	MM dfill	M25				JOB NUMBER: 748810 GROUND ELEV:	Description of the second second second second
TEST PIT DAT  LENGTH  LOCATION  LENGTH  GROUNDWAT	wid 20	) <sub>I-1</sub>	DEPTH 4	mi		AVATION METHOD  LX CAN ator		CONTRACTOR: AWT START DATE: 090115 COMPLETION DATE: 090115 CHECKED BY:	1220
DATE / TIM DEPTH TO MONITORING INSTRUMEN MULTI- K	ME WATER DATA	DE VôC <sub>1</sub>	TECTOR	BACKGRO	- 7	TIME/DATE 090/15/07/5		LOCATION SKETCH:	North
Plus REMARKS:		LEC	loxy						1112
DEPTH (FT)	voc	NO.	AMPLE DEPTH	STRATA		SAN	IPLE D	NTS DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1					. 2.	ned.	h,	tan silty sand, ize glavel, concrete ding: O	

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	The state of the s	TES	ST PIT FIELD	LOG	PAGE 1 OF
P	ARSONS		CLIENT:	TEST PIT NO.: M25	TP/Le
PROJECT: LOCATION:	LOCATION: Land Fill M25				810 Donald
LENGTH WIDT  LO, 5' Z'  GROUNDWATER DATA	4'		CAVATION METHOD	CONTRACTOR: AND START DATE: 0901/3  COMPLETION DATE: 0901/3	15/1232
	DETECTOR  OC CO H-S	BACKGROUND Cal. DM58ed	TIME/DATE 090115/0715	LOCATION SKETCH:	Pile North
Plus remarks:	LEY'OXY!	prison		NTS	
DEPTH (FT) VOC	SAMPLE NO. DEPTH	STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1		- 2- W	-4'	on silty sand, well! avel  al, slag, glass, wod, metal,	

	**	TES	T PIT FIEL	D LOG	TAGE T OF
PA	RSONS		CLIENT:	TEST PIT NO.: M25 T	P17
PROJECT: FIMM LOCATION: Landfill M 25				JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: L. M. D.	2
TEST PIT DATA  LENGTH WIDTH  LOCAL  GROUNDWATER DATA  DATE/TIME	DEPTH		AVATION METHOD  X CANATOR	CONTRACTOR: AWT START DATE: 190115 COMPLETION DATE: 090115 CHECKED BY:	1407
DEPTH TO WATER  MONITORING DATA  INSTRUMENT  I	/ /:	BACKGROUND Cal. passed	TIME/DATE 0901(5/07/3		North
DEPTH (FT) VOC NO.	SAMPLE S	STRATA	SAMPI	LE DESCRIPTION	EXCAVATION  EFFORT  E - Easy  M - Moderate D - Difficult
1		b   a   2	-41	te-brokenglass, oh, mis c, metal,	

		TEST P	IT FIELD	LOG		
PAI	RSONS	CLIEN	Т:	TEST PIT NO.: M25	5TP18	
PROJECT: F	TMM and fill h	125		JOB NUMBER: 748810  GROUND ELEV: INSPECTOR: RICHORALD		
TEST PIT DATA  LENGTH WIDTH	DEPTH	EXCAVATION		CONTRACTOR: 4W7 START DATE: 090	115/1422	
5,5 20"  GROUNDWATER DATA  DATE/TIME	$3^{\prime}$ $n$	rini-excar	7 1	COMPLETION DATE: 090 CHECKED BY:	1151	
DEPTH TO WATER MONITORING DATA	N/A			LOCATION SKETCH:	1	
Multi-Rae Voc		ekground O. passed 090	TIME/DATE 0/15/07/5	719 36 -54 - 71918 NTS	MW-64 North	
DEPTH (FT) VOC NO.	SAMPLE STRA	NTA .	SAMPLE	EDESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult	
1		TD=3'	on to tar -med, loo te-ash. nglass	se, dry sand, tool, slags		

	TES	T PIT FIELD	LOG	PAGE 1 OF
PARSO	NS	CLIENT:	TEST PIT NO.: M25 TF	019
PROJECT: FTM LOCATION: Land	M Fail 1425		JOB NUMBER: 748810 GROUND ELEV: INSPECTOR: R.WYOO	0
	DEPTH EXC 4' Minieko	Cavation METHOD	CONTRACTOR: AWT  START DATE: 090215/0  COMPLETION DATE: 090215  CHECKED BY:	9840
DEPTH TO WATER  MONITORING DATA  INSTRUMENT DETECT  Multipar Vocco  Plus LETT  REMARKS:	1H25 Cal. Dassed	TIME/DATE 090215/0720	LOCATION SKETCH:  TP16 56' - TP19  NTS	North
DEPTH (FT) VOC NO. D	E STRATA	SAMPLE	DESCRIPTION	EXCAVATION EFFORT E - Easy M - Moderate D - Difficult
1	- 1.5 - 1.5 - W	-4'	end w/gravel, l is pebblesize, slag, brokenglass,	

			TE	ST PIT FIEI	LD LOG	PAGE 1 OF
	PA	RSONS		CLIENT:	TEST PIT NO.: M'	25TP20
PROJECT:		FIMA	1 Sill M2s		18810	
LOCATIO	N	canoli	111 1920			44) on ald
TEST PIT DA	TA				CONTRACTOR: A	NT .
LENGTH	WIDTH	DEPTH		XCAVATION METHOD		0215/0902
5.5'	/8"	141	mini-	excavator	COMPLETION DATE: 090	02/5'
GROUNDWA?		1 1	/ /	1111	CHECKED BY:	
DEPTH TO	WATER	I/V/	AX		LOCATION SKETCH:	<b>A</b>
MONITORING	DATA					7TP20
INSTRUME		DETECTOR	BACKGROUND		~ 61' ESE ~	6
Multi-R	ae Vo	DC/CO/Hz	S Cal. Dassio	1 090215/0720	TP19	Worth North
REMARKS:		Egorg				61'ESE OTPH
					NTS	<del>2771</del>
		SAMPLE	STRATA	SAN	MPLE DESCRIPTION	EXCAVATION
DEPTH (FT)	VOC NO.	DEPTH				E- Easy
DLI III (F1)	, roc   no.	DEI III				M - Moderate
		-				D - Difficult
			-0	-1.5'	/ / /	-
1			1 + ;	brown silty	sand w/ gravel,	
2				de la lane	' 0	
			T	July, all se	sand w/ gravel,	
3				5'-31		-
4			F '	•	0 01	
1			+	waste-ash	, Coal, brick, Al	$ag_{i}$
5			$\perp$	broken gli	1, Coal, brick, Aliast, burned woo	ط
					· .	
6			+ 3	-4'	:14 10 10	
7			F .	et. orange Al	ilty sand, tine-	med -
				loose	U	1 ]
8						_
			F-	= 4'has		-
9———			+11	) = 4'bgs		-
10			In	weti-tal rea	ding = 0	
					J	
11						
12			-			-
-			+			
13		1 1				
14			+			-
15			上			

			TES	T PIT FIELI	LOG	PAGE 1 OF
	PAR	SONS		CLIENT:	TEST PIT NO.: M	25 TP21
PROJECT:	: F7	ПИМ				18810
LOCATIO		and f			GROUND ELEV:	
TECT PER DA	T. A.					Monald
TEST PIT DA'	WIDTH	DEPTH	EXC	AVATION METHOD		NT 90215/1000
Let	20"	4'	mini-ex		COMPLETION DATE: // 90	
GROUNDWA	TER DATA				CHECKED BY:	
DATE / TIN	ME	ALI	14	200		
DEPTH TO		1111	7	VV	LOCATION SKETCH:	MW84
MONITORING			D. GWODOV D. D.	TIV CO. 1 TT		2.5'
Multi-		CICOLHS	BACKGROUND	090215/0726	7	North
Plu		ENT OXA	Passed	0702137012	ABOUT TP	21 59' - 0 TP N
REMARKS:		7			TPII	-OTO M
					Salahahara Tahun Tahun Salahara	THE R. LEWIS CO., LANSING MICH.
	S	AMPLE	STRATA	SAMPLI	E DESCRIPTION	EXCAVATION EFFORT
DEPTH (FT)	VOC NO.	DEPTH				E - Easy
						M - Moderate
				1 01		D - Difficult
			1.0	hsphalt @su	yace	-
1-					0	-
2			F 0 -	2.51	1 1	
			T +	an silty sa	nd w/ gravel.	
3			+ 3	and is mod-	fine loose	_
4			F 2	nauel is rebl	od w/gravel. fine, loose. buto cobble so	ae -
*			+ 7	See See See See	111	0 1 -
5				counted. Is	7	_
					O	
6			1 2.3	51-41		
7			F (	waste incl.	ash slag	-
7			+ 4	usting metal	broken ceras	
8					200	45,
			Tw	ood J		
9		- 1				-
,,			F-77	- 111 - 1		· -
10		1	1	=4'bg1		
11			t mu	Oti-val load		1
				Sti-rae read	7=0	]
12			+		9	
			F			-
13			+			-
14			-			-
						-
15						

		TES	ST PIT FIE	LD LOG	PAGE 1 OF
P	ARSONS		CLIENT:	TEST PIT NO.: M 25	5TP22
PROJECT:	-TMM Landfi	II M25		JOB NUMBER: 748 GROUND ELEV:	Donald
TEST PIT DATA		T		CONTRACTOR: AW	)
LENGTH WIDTH			cavation method	START DATE: <u>090</u> COMPLETION DATE: 090	215/1021
GROUNDWATER DATA DATE/TIME				CHECKED BY:	
DEPTH TO WATER	N	AXI		LOCATION SKETCH:	<b>*</b>
MONITORING DATA				o T	P13
Plus	DETECTOR DCCO/H2S DCCO/H2S	Cal. Dassed	090215 0720	) <sup>47'</sup>	 North
REMARKS:				NTS	
	SAMPLE	STRATA	SAN	MPLE DESCRIPTION	EXCAVATION
DEPTH (FT) VOC N	O. DEPTH				EFFORT  E - Easy  M - Moderate  D - Difficult
1			177	ge silty sand, some growel ieces of coal.  ying organic roist.	