

## SCS ENGINEERS

September 10, 2014  
File No. 23212007.02

Ms. Tracy Buchanan  
Ohio EPA Southwest District Office  
401 East Fifth Street  
Dayton, Ohio 45402-2911

Subject: Village of St. Bernard Landfill  
Certification Report for the Installation of Monitoring Probe MP-17

Dear Ms. Buchanan:

Enclosed please a certification report for the installation of monitoring probe MP-17, which was installed to replace those monitoring probes that were removed during the remedial activities at 441 Bank Avenue.

Should you have any questions or comments, please contact the undersigned.

Sincerely,



Randall C. Mills, P.G.  
Senior Project Professional  
**SCS ENGINEERS**



James J. Walsh, P.E.  
Principal  
**SCS ENGINEERS**

cc: Chuck DeJonckheere, Hamilton County Health Dept.  
Nick Schapman, CRA  
Bill Burkhardt, Mayor, Village of St. Bernard

Enclosures



**CERTIFICATION REPORT  
EXPLOSIVE GAS MONITORING PROBE  
MP-17 INSTALLATION  
ST. BERNARD LANDFILL**

Presented to:

**Village of St. Bernard**



110 Washington Avenue  
St. Bernard, Ohio 45217  
(513) 242-7770

Presented by:

**SCS ENGINEERS**  
2060 Reading Road, Suite 200  
Cincinnati, Ohio  
(513) 421-5353

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**Offices Nationwide**  
[www.scsengineers.com](http://www.scsengineers.com)

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# CERTIFICATION REPORT

## EXPLOSIVE GAS MONITORING PROBE MP-17 INSTALLATION

### 1 INTRODUCTION

In accordance with paragraph F of the OAC Rule 3745-27-12, this report and accompanying drawings document the construction and certification of the installation of a new permanent monitor, and the abandonment of existing permanent monitors at the St. Bernard Landfill.

The abandonment of old monitors was completed by Petro Environmental under the direction of SCS Engineers. The installation of the new monitor was completed by Terra Probe, Inc. under the direction of SCS Engineers.

### 2 SUMMARY OF FIELD ACTIVITIES

#### **Permanent Monitoring Probe Installation**

The replacement permanent monitoring gas probe (MP-17) drilling and installation was completed by Terra Probe, Inc. under the supervision of SCS Engineers.

The replacement permanent monitoring probe was constructed in general accordance with Section 1.7.2 of the approved EGMP dated November 18, 2011. MP-17 was installed with a Geoprobe direct push rig. Sampling was performed in 4-foot intervals using 1-inch inside diameter (ID) lined sample tube. The probe was installed using 3-inch ID drive tube.

The replacement permanent monitoring probe was constructed of 1-inch Schedule 40 PVC pipe with factory threaded flush joints and a factory slotted screen. The annulus around the screen was backfilled from the target depth to approximately one foot above the top of screen with silica sand. A one foot thick annular seal of hydrated 3/8-inch sodium bentonite chips was placed above the sand. The borehole above the seal was filled with sand and concrete placed around the flush mount protective casing.

After installation, the location of the replacement permanent monitoring probe was field located using the surveyed property corner markers. The boring log and as-built construction diagram for the replacement permanent monitor is included under Appendix A.

A map identifying the surveyed locations of the permanent monitors is attached as Figure 1 in Appendix D.

#### **Initial Monitoring Results**

The replacement permanent monitoring probe has been and will continue to be monitored on a monthly basis for gas pressure, percent LEL, percent methane, and depth to water in accordance with Section 2.1 of the approved EGMP. The initial monitoring result for the new permanent monitoring probe is included in Appendix C.

### **Permanent Monitoring Probe Removal**

The probe removals were performed by Petro Environmental under the supervision of SCS Engineers during the remediation of the back yard of 441 Bank Avenue. The remediation of the back yard of 441 Bank Avenue consisted of excavation of landfill related debris down to the top of the native soil and backfilling with compacted clean fill soil. Gas probes MP-1A, MP-11, MP-12A, MP-12B and MP-13 were removed since they were within the limits of the excavation. The existing permanent monitoring probes were abandoned by complete excavation to the top of the native soil. Any screen that extended below the top of the native soil was also pulled out by the excavator.

## **3 CONCLUSION AND CERTIFICATION**

The explosive gas permanent monitor referenced in this report was installed in accordance with the OAC Rule 3745-27-12 and substantial compliance with the EGMP as revised in November 2011.

APPENDIX A

BORING LOG, PERMANENT MONITORING PROBE  
CONSTRUCTION DIAGRAM

PROJECT INFORMATION		DRILLING INFORMATION	
Project:	St Bernard Landfill	Drilling Co.:	Terra Probe
Address:		Driller:	Joe Fojtik
City, State:	Village of St. Bernard, OH	Rig Type:	Geoprobe
Job No.	23212007.02	Tooling:	3-inch tube
Logged By:	R. Mills	Sampler Type:	1-inch
Date:	8/29/2014	Total Depth:	14 feet

DEPTH	SOIL DESCRIPTION	SAMPLE	RECOVERY	PID (ppm)	WELL DESCRIPTION
	<b>FILL SOIL</b> Reddish brown SILT & CLAY, some Sand, little Gravel,	S-1	23"		
5	Brown SILT & CLAY, some Sand, little Gravel, moist.	S-2	20"		
10	<b>NATIVE SOIL</b> 4" olive gray SILT & CLAY, trace Sand 8" brownish gray fine SAND, little Clayey Silt 6" gray SILT & CLAY 10" olive gray SILT & CLAY, trace Sand	S-3	32"		
15	Bottom of boring at 14 feet.				

APPENDIX B  
REVISED EGMP TABLE 1

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**Table 1**  
**St. Bernard Landfill**  
**Landfill Gas Monitoring Network Summary**

Probe ID	Use Category			Former ID
	Compliance	Special Purpose	Extraction	
MP-1	●			
MP-1A	●			EW-1
SP-1		●		
SS-1		●		
SP-2		●		EW-2
SP-2R		●		EW-2R
EW-2S			●	
SS-2		●		
SP-3R		●		EW-3R
EW-3S			●	
SS-3		●		
EW-4S			●	
SS-4		●		
EW-5S			●	
SS-5		●		
SP-6R		●		EW-6R
EW-6S			●	
SS-6		●		
MP-7E	●			
MP-7F	●			
MP-7G	●			
MP-7H	●			
MP-7T		●		
SS-7		●		
MP-8R	●			
MP-8AR	●			
MP-8BR	●			
MP-8CR	●			
MP-8D	●			
MP-8E	●			
MP-8F	●			
MP-8G	●			
SS-8		●		
MP-9	●			
SS-9		●		
MP-10	●			
SS-10		●		
MP-11	●			
SS-11		●		
SP-12		●		MP-12
SS-12		●		
MP-12A	●			
MP-12B	●			
MP-13	●			
SP-14		●		MP-14
EW-14S			●	EW-14S

**Table 1**  
**St. Bernard Landfill**  
**Landfill Gas Monitoring Network Summary**

Probe ID	Use Category			Former ID Compliance
	Compliance	Special Purpose	Extraction	
MP-15	•			
MP-16	•			
<i>MP-17</i>	•			
(un-named probe at base of hillside)		•		

Removed

*Italics* – newly installed probe.

APPENDIX C  
INITIAL ROUND OF MONITORING

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## Compliance Probe Monitoring Form for St. Bernard Landfill

Date: <u>9/4/2014</u>	Sampler: <u>Randall Mills</u>
Instrument: <u>GEM 5000</u>	Weather: <u>Clear, calm</u>
Calibration Prior to Sampling: <u>Yes</u>	Ambient Air Temperature (°F): <u>71</u>
Calibration Gas: <u>ambient air</u>	Barometric Pressure (in Hg): <u>30.11</u>
Recalibration: <u>No</u>	Relative Humidity (%): <u>93</u>

Probe ID	Start Time	Stop Time	Gas Pressure (inches water)	Initial CH <sub>4</sub> (% by Volume)	Sustained CH <sub>4</sub> (% by Volume)	Depth to Water Level (feet below ground surface)	Depth to Top of Screen (feet below ground surface)	Open Screen* (feet)
MP-1	8:14	8:15	0.01	0	0	9.30	not known	
MP-7E	9:13	9:14	0.01	0	0	8.40	3	5.4
MP-7F	9:21	9:22	-0.39	0	0	6.93	3	3.9
MP-7G	9:18	9:19	0.01	0	0	6.90	2	4.9
MP-7H	9:27	9:28	0.02	0	0	5.86	2	3.9
MP-8D	8:44	8:45	0	0	0	8.20	4	4.2
MP-8E	8:59	9:00	-0.04	0	0	8.96	4	5.0
MP-8F	9:03	9:04	-0.01	0	0	9.05	4	5.0
MP-8G	9:08	9:09	0.01	0	0	8.88	4	4.9
MP-9	8:40	8:41	0.01	0	0	8.32	2	6.3
MP-10	8:36	8:37	-0.01	0	0	5.24	2	3.2
MP-15	8:17	8:18	0	0	0	3.93	2	1.9
MP-16	8:22	8:23	0	0	0	5.03	2	3.0
MP-17	8:29	8:30	-0.01	0	0	11.79	3	8.8

Notes: Next complete round of probe monitoring with water level measurements is scheduled for first full week in October.

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Signature: Randall C. Mills

\* A zero or negative value indicates that the probe is watered in.

APPENDIX D  
REVISED EGMP FIGURE

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