



**Countywide Recycling & Disposal Facility**

**Remediation Unit**

**Monthly Progress Report  
Of  
Operations, Monitoring & Maintenance Activities**

**January 2011**

*Prepared By:*

Countywide Recycling & Disposal Facility

Remediation Unit

3619 Gracemont Street S.W.,

East Sparta, Ohio

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## Introduction

This document provides a monthly report of activities conducted in January 2011, as required by the Operations, Monitoring, and Maintenance (OM&M) Plan. The OM&M plan was developed for the facility and adopted by the Ohio Environmental Protection Agency (OEPA) on September 30, 2009. The primary objectives of the monitoring portion of this plan are as follows:

1. Monitor status/progression of the reaction.
2. Monitor characteristics of leachate and gas.
3. Track settlement and slope movement/stability of waste mass and perimeter berms.
4. Monitor exposure conditions for engineered components.
5. Determine when conditions are suitable for composite capping.
6. Assess conditions requiring notification, repair, further evaluation or corrective action.
7. Provide a summary of monitoring and data collection, relevant activities conducted since the prior report, trigger events, and conditions which may require additional non-routine activities or investigation.

The OM&M Plan requires inspections, routine maintenance, and other activities that are not required to be presented in this submission. These activities are documented as required, and records are retained in the OM&M Managers office.

### 1. Monthly Summary Narrative

During the month of January, all daily, weekly, and monthly tasks were completed as required. The South Slope Relocation Project commenced on January 17, 2011. As part of this project, approximately 44,000 cubic yards of material were excavated and relocated during the month of January. This material consisted of approximately 70% buttress soil material and 30% waste. No obvious or dramatic signs of the reaction were observed. Installation of replacement landfill gas wells was also initiated late in the month.

### 2. New Construction

No new construction is currently required or planned.

### 3. Major Non-Routine Maintenance, Repairs or Events

Routine maintenance and repairs of the temporary cap, leachate, and gas systems were completed during the month of January. Temporary cap and sub-cap gas collection visual inspections were limited due to snow and ice cover on the cap, however no obvious issues were noted. No major maintenance, repairs, or events were conducted.

As part of the South Slope Project, the following landfill gas collection points were abandoned. These include both vertical gas wells and odor control collection points; PW-155, PW-154, AINC6, AINC4, GVS1, AHEAD3, PW-180, PW-114, PW-41R2, PW-124, PW-118R, PW-61R2, 40HL, ULFP001, N1R, PW-14R(3), B1R, DWW1, DWW2, A1R(2), PW-120, PW-121R(2), PW-122R, PW-147R, PW-149, PW-151, PW-152, ALRS01, ALRS02, ALRS03, ALRS04, ALRS05, ALRS06, ALRS10, and C06B. Well abandonment details will be included in the facilities normal NSPS reporting as required.

Countywide intends to replace/redrill approximately nine gas extraction wells on the Remediation Unit in February 2011. An additional seven wells will be replaced as part of the relocation project.

Countywide also intends on replacing approximately 10 acres of temporary cap based upon age and condition. This cap replacement will commence in February, and is in addition to approximately 16 acres of cap which will be replaced as part of the South Slope Project.

#### **4. New Trigger Events**

##### **Settlement**

Areas of 2% or greater annualized settlement are depicted on the monthly settlement survey maps. Per the OM&M Plan, an exceedance of this settlement rate should only be considered a trigger if it occurs in a location where it had not been exceeded in the previous event. The majority, if not all, of the areas exceeding the settlement rate in January have exceeded the trigger in prior months. As can be seen on the settlement maps, the south slope excavation and relocation areas were excluded due to construction activity in those areas. Countywide intends to exclude these areas until the project is complete.

Areas along the toe of the waste mass have consistently shown false triggers due to the accuracy limits of the survey equipment and thickness of waste mass. These instances have been discussed on an ongoing basis during Team Countywide meetings. Upon extensive review and discussion, it has been mutually agreed upon that these values do not represent cause for immediate concern. Pin and plate monitoring along the toe of slope and near the waste limits supports that there is limited settlement/movement in these areas.

The settlement data across the facility was evaluated and is within the ranges and trends observed in prior months. The rate of settlement per day also appears to be within typical ranges and trends, although some fluctuation has been observed in the last few months. There does not appear to be any anomalies or significant excursions outside the trends within the settlement data set. The settlement data and pin and plate data do not suggest that the settlement observed should cause concern from a slope stability or engineering control integrity standpoint.

##### **Pin/Plate Monitoring**

As defined by the OM&M Plan, a vertical trigger for pin and plate movement consists of a change of 0.05 feet or greater from the original elevation, which was measured in October 2009. During the month of January, monitoring pins IP-B1, IP-C1, and IP-E1 exceeded the vertical trigger. IP-E1 exceeded the trigger during all three monitoring events, IP-C1 exceeded the second event of the month, and IP-B1 exceeded the trigger during the last two monitoring events of the month.

Elevation changes for these pins do not appear to represent a deviation from prior trends that would indicate slope instability. Little change was observed week to week, and in fact IP-E1 and B1 actually showed a decrease during the final event of the month, with the pin appearing to “rebound” to its original position. Based upon the analysis of data, Countywide does not believe that these triggers should prompt any additional measures beyond the requirements of the OM&M Plan and ongoing activities. Full analysis of this data is presented in Attachment 4. If these pins continue to trigger while only showing slight change from one monitoring period to the next, a new baseline elevation should be established to avoid false triggers.

#### **5. Investigation Results from Previous Trigger Events**

It was agreed upon between Republic and the Agencies that the values resulting in triggers during the December 2010 monitoring period were consistent with ranges and trends previously reflected, and represent no significant anomalies when compared to prior ongoing trends. The analysis of these triggers did not prompt any additional measures beyond the requirements of the OM&M Plan and ongoing activities.

## **6. Trend Graphs and Drawings**

The graphs, tables, and figures required by the OM&M Plan are included in the attachments to this report. Due to the vast number of these and the detail that they provide, a full written summary is not provided in this document. The data will be discussed in depth at the Team Countywide Meeting. The January monitoring data is generally within the ranges and trending of that observed in prior months. Please note that given the ongoing excavation and relocation on the south slope area, data was not collected from the piezometers on the south slope during the month of January. As such, Table 4 is not presented in this report. As these piezometers are being removed as part of the excavation, this Table will no longer be presented in this report.

## **7. Review of Potential Need to Extend Temporary FML Cap**

Currently, the Remediation Unit consists of approximately 18 acres which do not have a temporary cap. Volume 1, Section 7.1 of the OM&M Plan details conditions which would initiate an assessment which could require installation of temporary cap in this area. Such conditions include;

- Uncontrollable odor or fugitive emissions,
- Unusual settlement (Incremental settlement greater than 2% per year),
- Atypical or uncontrollable leachate outbreaks,
- Methane/carbon dioxide ratio less than 1.0,
- Maximum wellhead temperatures greater than 150°F,
- Maximum carbon monoxide greater than 100 ppmv.

At this time, the conditions observed in this area supplemented by the data collected during monitoring and inspections do not indicate the need for expansion of the temporary cap.

## **8. Petitions to Perform Work**

The monitoring and inspections conducted during the operating period do not indicate the need for additional work which would require approval. As such, there are no petitions to perform such work at this time.

## **9. Proposed OM&M Plan Revisions**

No revisions to the OM&M Plan are proposed at this time.

## **10. Odor Summary/Complaints**

During the month of January, a total of 25 odor complaints were received by Republic Services. A breakdown of those complaints is provided below.

- Two odor complaints were received prior to the beginning of the South Slope Project (January 17, 2011). Both complaints were received and investigated real-time, and were found to be unsubstantiated.

- 23 odor complaints were received following initiation of the South Slope Project. Results of complaint investigations were:
  - 16 complaints received real-time and investigated. Nine of these odor complaints were confirmed with odor detected, seven complaints could not be confirmed (no odor detected during investigation).
  - Seven complaints were not received real time and could not be investigated, nor did the time and location of these complaints correspond with other complaints.



2/16/11

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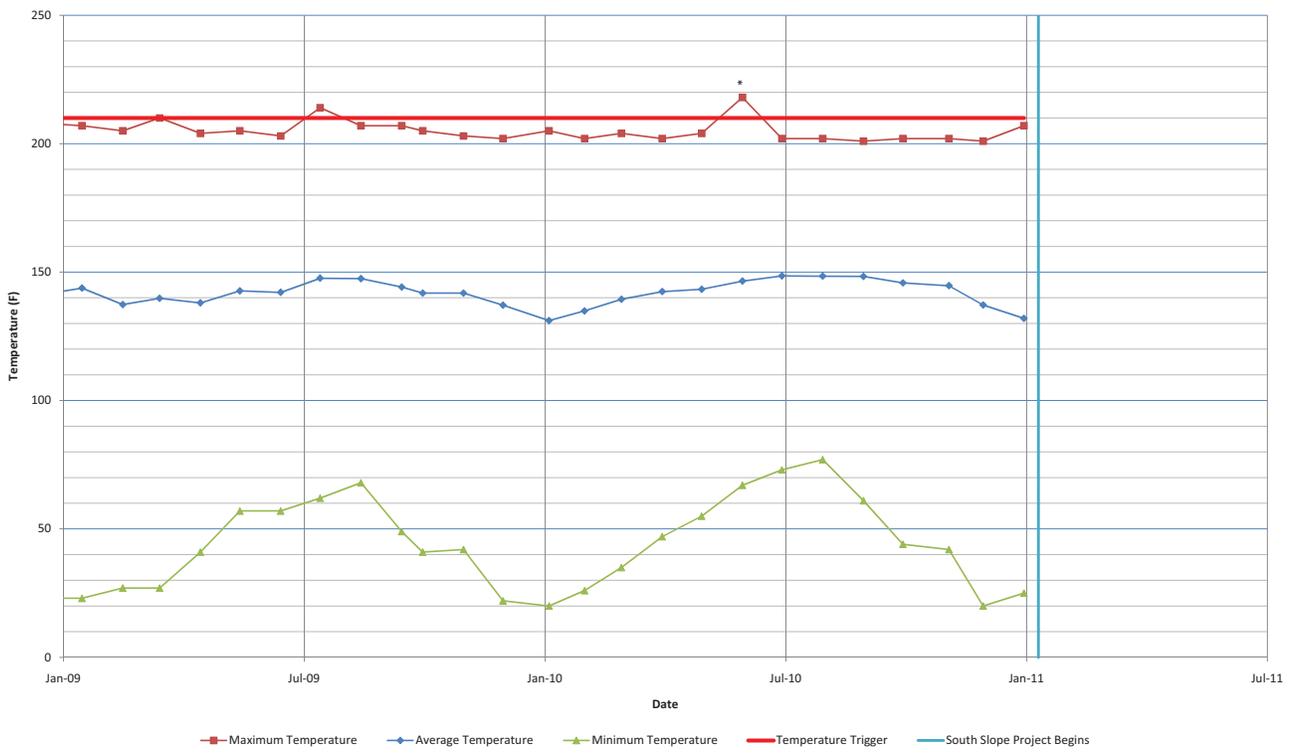
Michael Darnell  
OM&M Manager

Date

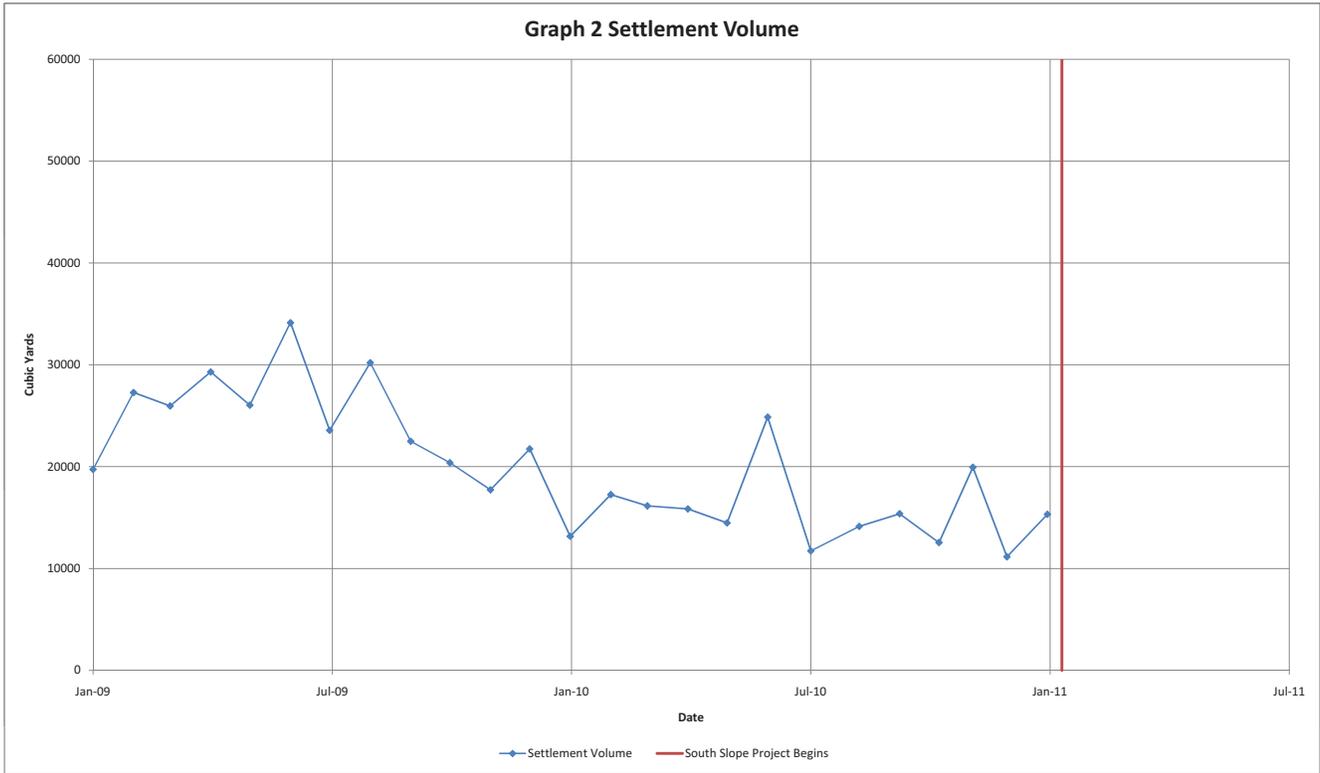
## **Attachment 1**

### **Graphs**

**Graph 1 Wellhead Temperature**

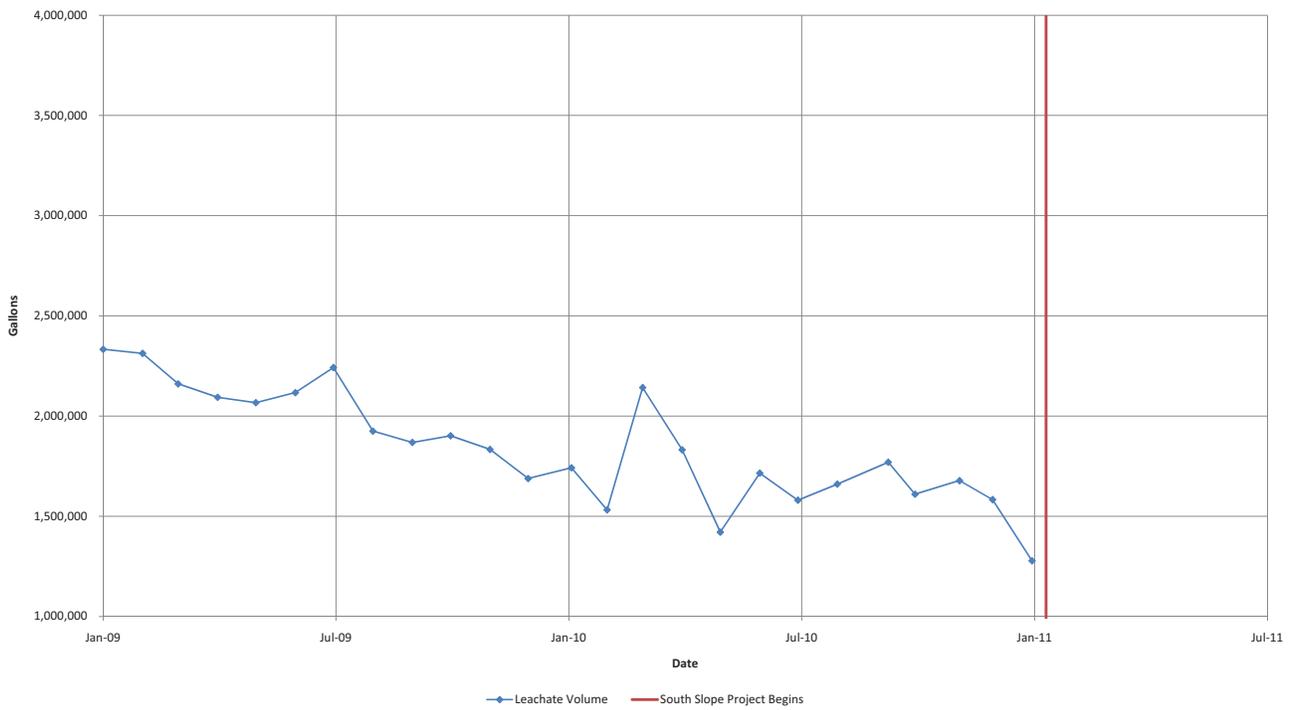


1. Maximum temperature depicted for June 2010 represents a single occurrence of a wellhead temperature over 210 degrees at a single well, caused by wellhead pressure. It does not represent a sustained temperature. Upon vacuum adjustment at the well, temperature returned to normal trend, below 210 degrees



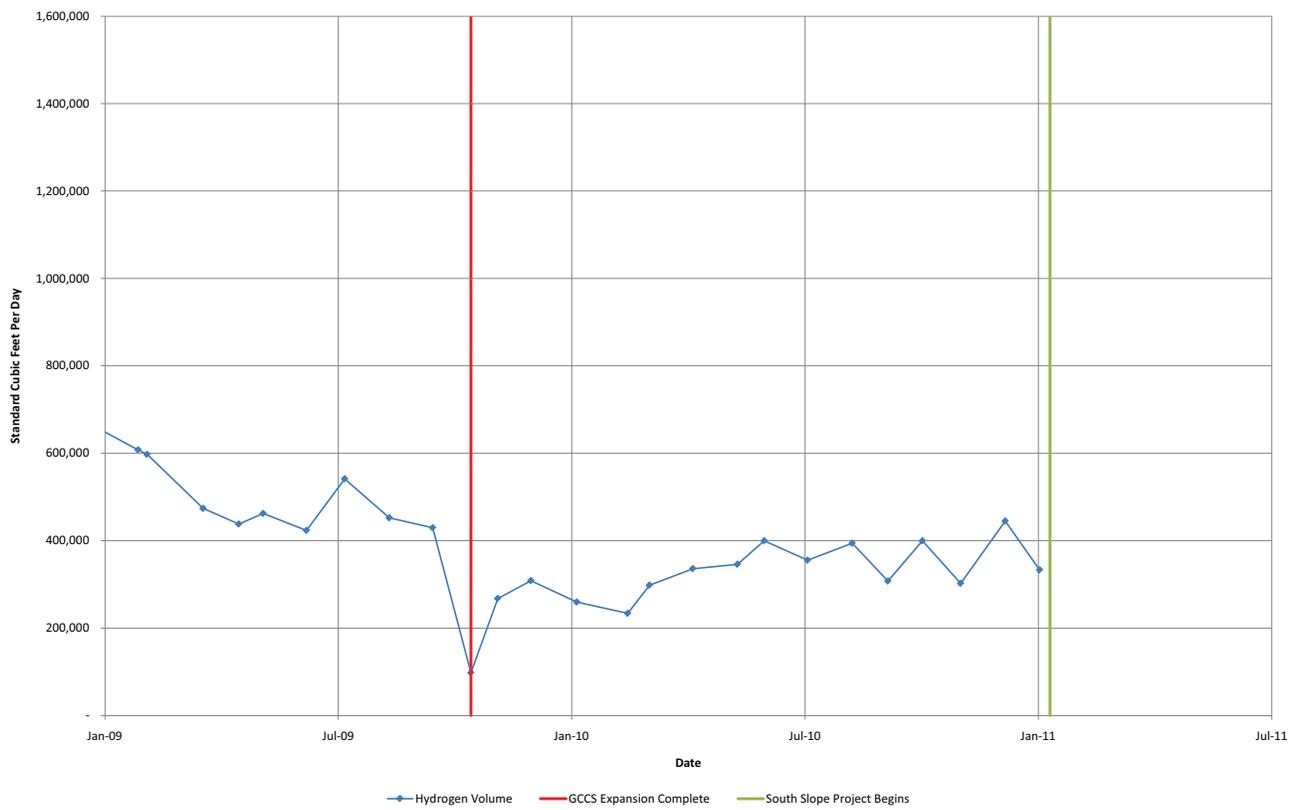
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Countywide Recycling and Disposal Facility.
2. Data presented on monthly basis.
3. Settlement volume reported prior to the 4th quarter of 2009 is for a limited area of the 88-acre reaction area.

**Graph 3 Leachate Volume**

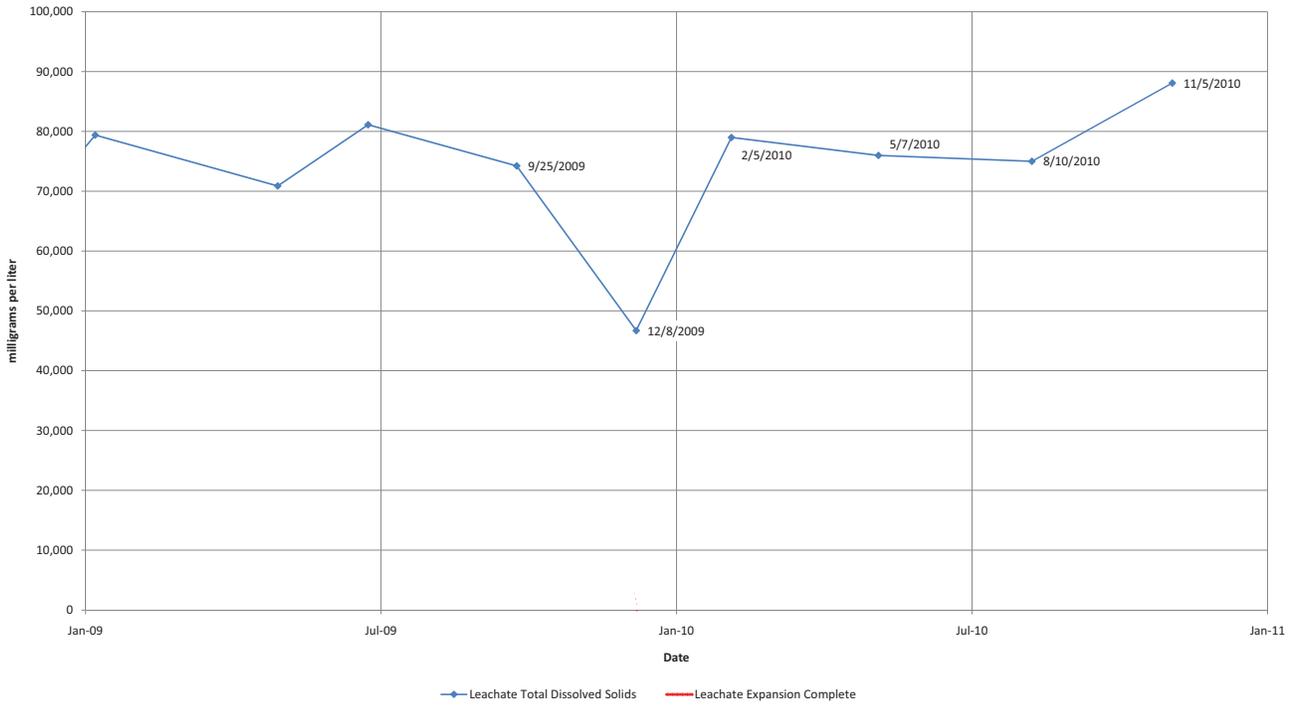


1. A freeboard of approximately 6 feet, approximately 90,000-gallons, is typically maintained at the 500,000-gallon tank. This freeboard volume was removed in July for tank cleaning and inspection. As such, the July 2010 leachate volume is elevated due to removal of this liquid.
2. Leachate generated from the Remediation Unit was stored in the same storage tank as that generated from the Operational Unit during the period July 19, 2010 through August 9, 2010 due to cleaning and maintenance to the Remediation storage tank. As such, the volume of leachate generated from the Remediation Unit was estimated for that period based upon typical daily averages.

Graph 4 Hydrogen Volume

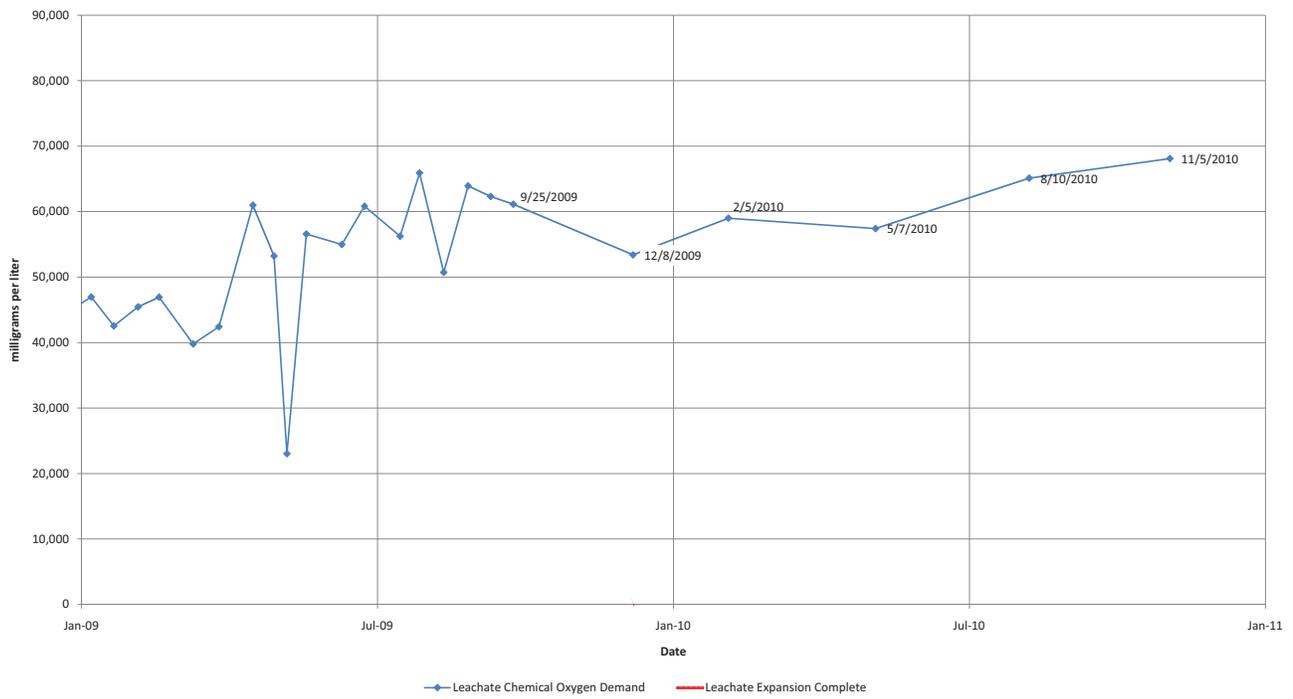


**Graph 5 Leachate Total Dissolved Solids**



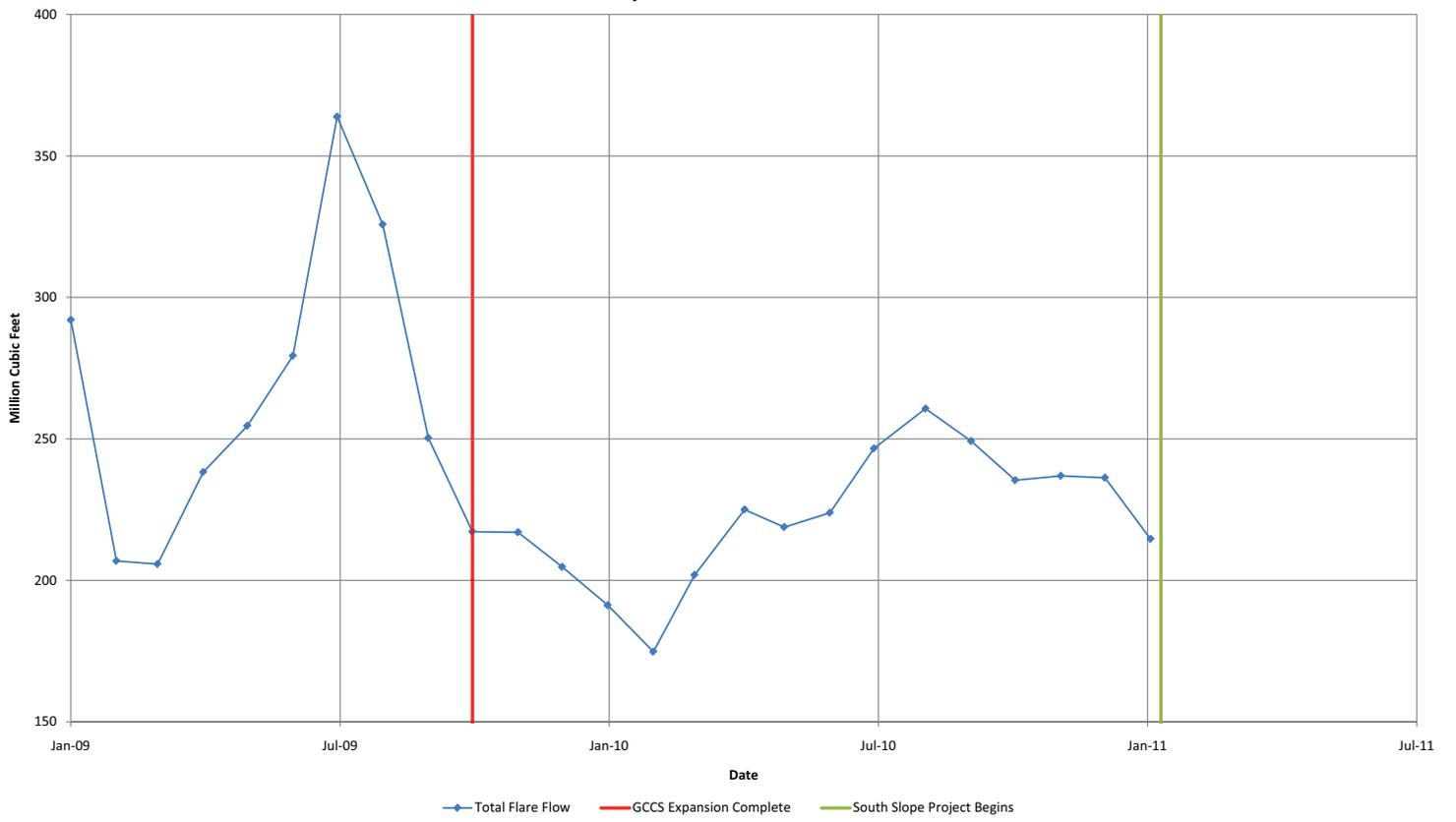
1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Countywide Recycling and Disposal Facility.
2. Data shown prior to October 2009 are flow-weighted averages of data from the East, North and South leachate collection tanks. Data from December 2009 is from combined Tank East 500.
3. Data shown prior to October 2009 comprises data from the leachate collection system only, and excludes certain leachate toe drains, sumps and gas collection wells.
4. Data labels beginning in October 2009 indicate date of quarterly analytical sampling.

**Graph 6 Leachate Chemical Oxygen Demand**

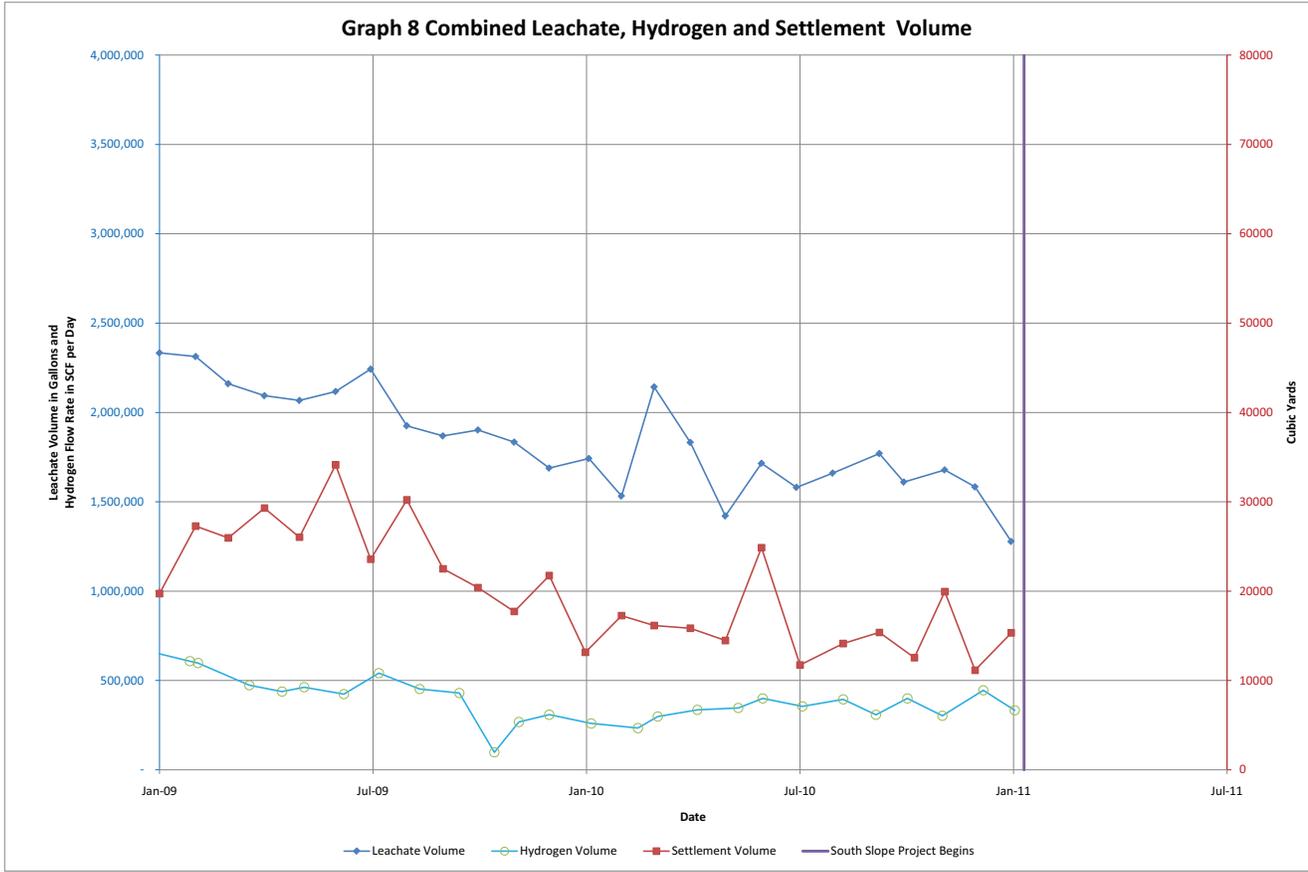


1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Countywide Recycling and Disposal Facility.
2. Data shown prior to October 2009 are flow-weighted averages of data from the East, North and South leachate collection tanks. Data from December 2009 is from combined Tank East 500.
3. Data shown prior to October 2009 comprises data from the leachate collection system only, and excludes certain leachate toe drains, sumps and gas collection wells.
4. Data labels beginning in October 2009 indicate date of quarterly analytical sampling.

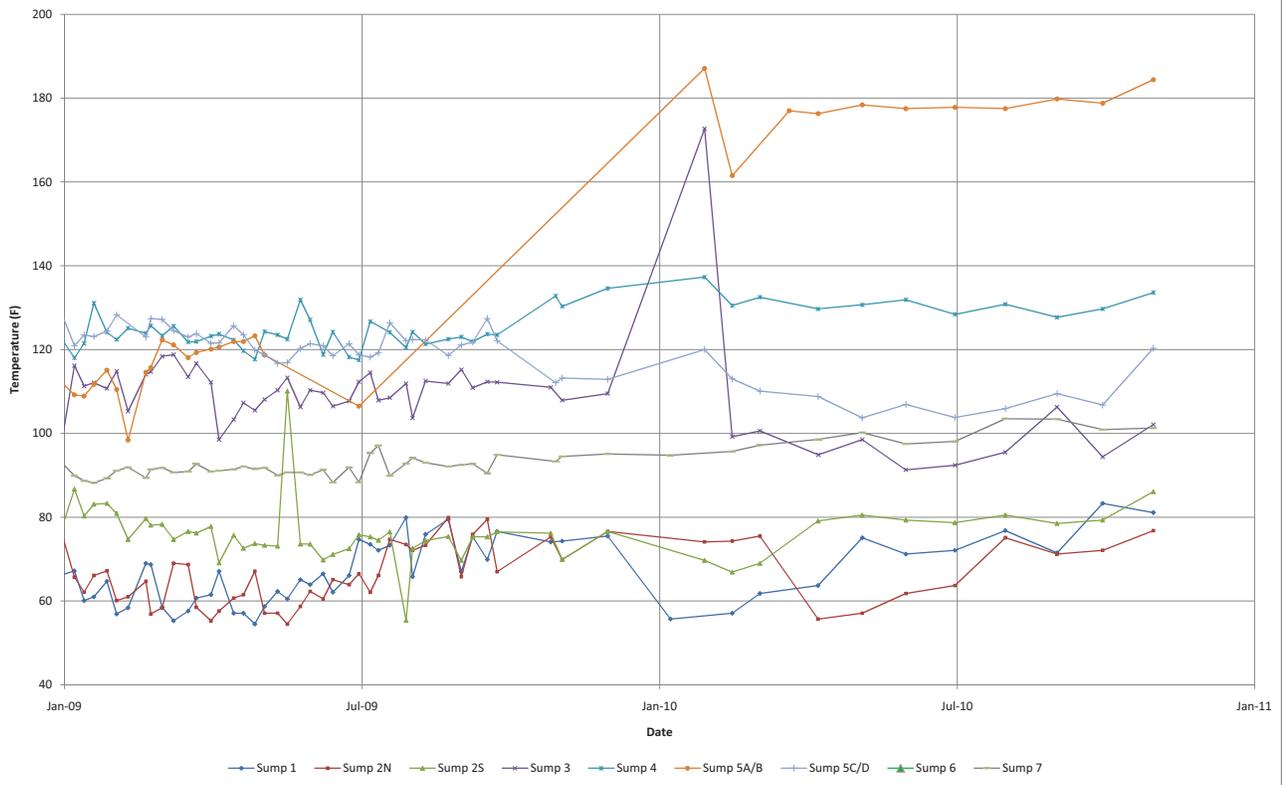
Graph 7 Total Flare Flow



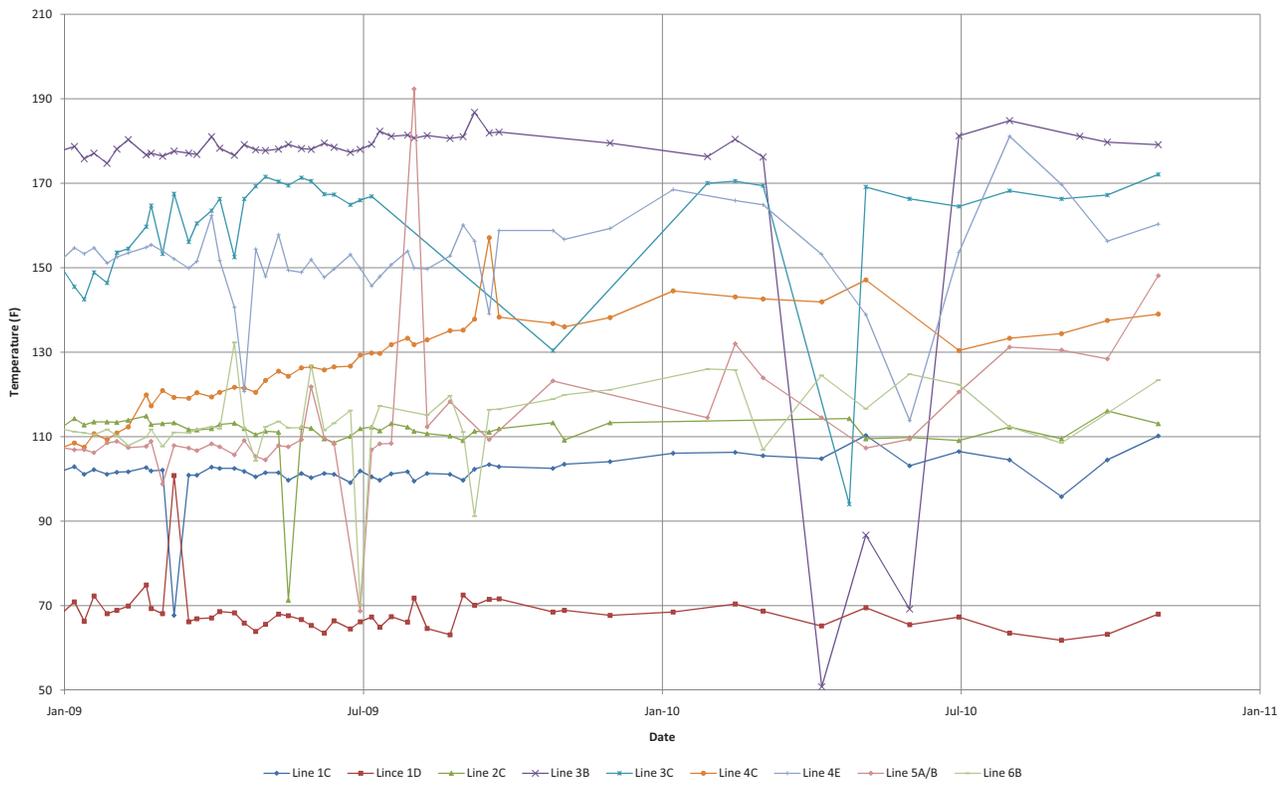
**Graph 8 Combined Leachate, Hydrogen and Settlement Volume**



Graph 9 Leachate Sump Temperature



Graph 10 Leachate Cleanout Temperature



## **Attachment 2**

### **Tables**

Table 1. Leachate Constituent Summary

Parameter Name		Value	Qualifier	Units	Detection Limit	Units
<b>Volatile Organic Compounds</b>						
1,1,1,2-Tetrachloroethane	<	710	U	ug/L	710	ug/L
1,1,1-Trichloroethane	<	710	U	ug/L	710	ug/L
1,1,2,2-Tetrachloroethane	<	710	U	ug/L	710	ug/L
1,1,2-Trichloroethane	<	710	U	ug/L	710	ug/L
1,1-Dichloroethane	<	710	U	ug/L	710	ug/L
1,1-Dichloroethylene	<	710	U	ug/L	710	ug/L
1,2,3-Trichloropropane	<	710	U	ug/L	710	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	<	1,400	U	ug/L	1,400	ug/L
1,2-Dibromoethane (EDB)	<	710	U	ug/L	710	ug/L
1,2-Dichloroethane	<	710	U	ug/L	710	ug/L
1,2-Dichloropropane	<	710	U	ug/L	710	ug/L
2-Hexanone	<	7,100	U	ug/L	7,100	ug/L
4-Methyl-2-pentanone	<	7,100	J	ug/L	7,100	ug/L
Acetone		47,000		ug/L	7,100	ug/L
Acrylonitrile	<	14,000	U	ug/L	14,000	ug/L
Benzene	<	710	U	ug/L	710	ug/L
Bromochloromethane	<	710	U	ug/L	710	ug/L
Bromodichloromethane	<	710	U	ug/L	710	ug/L
Bromoform	<	710	U	ug/L	710	ug/L
Carbon disulfide	<	710	U	ug/L	710	ug/L
Carbon tetrachloride	<	710	U	ug/L	710	ug/L
Chlorobenzene	<	710	U	ug/L	710	ug/L
Chloroethane	<	710	U	ug/L	710	ug/L
Chloroform	<	710	U	ug/L	710	ug/L
cis-1,2-Dichloroethylene	<	710	U	ug/L	710	ug/L
cis-1,3-Dichloropropene	<	710	U	ug/L	710	ug/L
Dibromochloromethane	<	710	U	ug/L	710	ug/L
Ethylbenzene	<	710	U	ug/L	710	ug/L
Methyl bromide	<	710	U	ug/L	710	ug/L
Methyl chloride	<	710	U	ug/L	710	ug/L
Methyl ethyl ketone		24,000		ug/L	7,100	ug/L
Methyl iodide	<	710	U	ug/L	710	ug/L
Methylene bromide	<	710	U	ug/L	710	ug/L
Methylene chloride	<	710	U	ug/L	710	ug/L
o-Dichlorobenzene	<	710	U	ug/L	710	ug/L
p-Dichlorobenzene	<	710	U	ug/L	710	ug/L
Styrene	<	710	U	ug/L	710	ug/L
Tetrachloroethylene	<	710	U	ug/L	710	ug/L
Toluene	<	710	U	ug/L	710	ug/L
trans-1,2-Dichloroethylene	<	710	U	ug/L	710	ug/L
trans-1,3-Dichloropropene	<	710	U	ug/L	710	ug/L
trans-1,4-Dichloro-2-butene	<	710	U	ug/L	710	ug/L
Trichloroethylene	<	710	U	ug/L	710	ug/L
Trichlorofluoromethane	<	710	U	ug/L	710	ug/L
Vinyl acetate	<	1,400	U	ug/L	1,400	ug/L
Vinyl chloride	<	710	U	ug/L	710	ug/L
Xylenes (total)	<	1,400	U	ug/L	1,400	ug/L

Table 1. Leachate Constituent Summary

<b>Dioxins/Furans</b>							
1,2,3,4,6,7,8-HpCDD	<	500	U	pg/L	500	pg/L	
1,2,3,4,6,7,8-HpCDF	<	500	U	pg/L	500	pg/L	
1,2,3,4,7,8,9-HpCDF	<	500	U	pg/L	500	pg/L	
1,2,3,4,7,8-HxCDD	<	500	U	pg/L	500	pg/L	
1,2,3,4,7,8-HxCDF	<	500	U	pg/L	500	pg/L	
1,2,3,6,7,8-HxCDD	<	500	U	pg/L	500	pg/L	
1,2,3,6,7,8-HxCDF	<	500	U	pg/L	500	pg/L	
1,2,3,7,8,9-HxCDD	<	500	U	pg/L	500	pg/L	
1,2,3,7,8,9-HxCDF	<	500	U	pg/L	500	pg/L	
1,2,3,7,8-PeCDD	<	500	U	pg/L	500	pg/L	
1,2,3,7,8-PeCDF	<	500	U	pg/L	500	pg/L	
2,3,4,6,7,8-HxCDF	<	500	U	pg/L	500	pg/L	
2,3,4,7,8-PeCDF	<	500	U	pg/L	500	pg/L	
2,3,7,8-TCDD	<	100	U	pg/L	100	pg/L	
2,3,7,8-TCDF	<	100	U	pg/L	100	pg/L	
OCDD		340	QBJ	pg/L	1000	pg/L	
OCDF	<	1000	U	pg/L	1000	pg/L	
Total HpCDD	<	500	U	pg/L	500	pg/L	
Total HpCDF	<	500	U	pg/L	500	pg/L	
Total HxCDD	<	120	QJ	pg/L	500	pg/L	
Total HxCDF	<	500	U	pg/L	500	pg/L	
Total PeCDD	<	500	U	pg/L	500	pg/L	
Total PeCDF	<	500	U	pg/L	500	pg/L	
Total TCDD	<	100	U	pg/L	100	pg/L	
Total TCDF	<	100	U	pg/L	100	pg/L	
<b>Metals</b>							
Aluminum	<	20,000	UG	ug/L	20,000	ug/L	
Antimony	<	1,000	UG	ug/L	1,000	ug/L	
Arsenic	<	500	UG	ug/L	500	ug/L	
Barium		1,840		ug/L	1,000	ug/L	
Beryllium	<	300	UG	ug/L	300	ug/L	
Cadmium	<	200	UG	ug/L	200	ug/L	
Calcium		4,270,000		ug/L	100,000	ug/L	
Chromium		634		ug/L	500	ug/L	
Cobalt	<	500	UG	ug/L	500	ug/L	
Copper	<	500	UG	ug/L	500	ug/L	
Iron		1,190,000		ug/L	10,000	ug/L	
Lead		497		ug/L	300	ug/L	
Magnesium		1,170,000		ug/L	100,000	ug/L	
Manganese		93,000		ug/L	500	ug/L	
Nickel	<	1,000	UG	ug/L	1,000	ug/L	
Potassium		5,450,000		ug/L	100,000	ug/L	
Selenium	<	500	UG	ug/L	500	ug/L	
Silver	<	300	UG	ug/L	300	ug/L	
Sodium		12,700,000		ug/L	100,000	ug/L	
Thallium	<	1,000	UG	ug/L	1,000	ug/L	
Vanadium	<	700	UG	ug/L	700	ug/L	
Zinc		40,300		ug/L	2,000	ug/L	

Table 1. Leachate Constituent Summary

<b>Field Parameters</b>					
Specific Conductance	55,000		umhos/cm	100	umhos/cm
Field pH	6.1		s.u.		s.u.
Field Temperature	73.8		F		F
<b>General Chemistry</b>					
Ammonia	33.1		mg/L		mg/L
Turbidity	490		NTU	50	NTU
Chloride	22,200		mg/L	500	mg/L
Fluoride	< 100	UG	mg/L	100	mg/L
Sulfate	841		mg/L	100	mg/L
Nitrate-Nitrite	< 10	UG	mg/L	10	mg/L
Total Alkalinity	10,300		mg/L	500	mg/L
Total Dissolved Solids	88,100		mg/L	1000	mg/L
Chemical Oxygen Demand (COD)	68,100		mg/L	2000	mg/L

**Notes:**

1. Results shown are reported for sample collected from the East 500 Leachate Tank on November 5, 2010 and were submitted to Test America Laboratories for analysis.

## 2. Laboratory Qualifiers:

- G The reporting limit is elevated due to matrix interference.
- J Amount reported is less than reportable limit
- a Spike analyte recovery is outside control limits
- D Dilution and reporting limit raised.
- U Non detect
- Q Estimated maximum concentration
- B Method Blank Contamination
- NC The recovery and/or RPD (relevant percent distance) were not calculated
- MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	A2	B1R	B2R	C1R(2)	C2R	D1	D2R	E1	E2R	F1-M	F2	I1R	J1R	K1R	N1R	PW-A1R(2)	PW-14R(3)	PW-0041R(2)	
Total Constructed Casing Length (ft)	68	36	78	48	123	57	123	70	123	60	68	121	122	56	122	61.5	43	73	
Total Constructed Perforated Pipe Length (ft)	45	16	54	23	99	36	99	45	99	39	44	96	97	31	97	38	21	55	
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11/12	N/A	N/A	11/12	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	73.3	N/A	N/A	62.1	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	111.1	N/A	N/A	90.1	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	87.1	N/A	N/A	65.1	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49.3	N/A	N/A	37.1	N/A	N/A	N/A	N/A	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12/17	N/A	N/A	12/17	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61.1	N/A	N/A	26.7	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	110.5	N/A	N/A	47.2	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86.5	N/A	N/A	22.2	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37.1	N/A	N/A	1.7	N/A	N/A	N/A	N/A	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1/20	N/A	N/A	1/20	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45.4	N/A	N/A	21.8	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	110.3	N/A	N/A	47.0	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	86.3	N/A	N/A	22.0	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.4	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	
Well ID	PW-43R(2)	PW-56R(2)	PW-57R	PW-61R(2)	PW-62R(2)	PW-101	PW-102	PW-103R	PW-104	PW-105	PW-106R	PW-107	PW-108R	PW-109	PW-110	PW-111	PW-112	PW-113	
Total Constructed Casing Length (ft)	102	102	85	74	91	78	78	105	78	78	69	66	50	37	31	62	77	78	
Total Constructed Perforated Pipe Length (ft)	84	84	67	48	73	60	60	81	60	60	45	45	26	19	13	44	59	60	
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-114	PW-115R	PW-117R	PW-118R	PW-119R	PW-120	PW-121R(2)	PW-122R	PW-123	PW-124	PW-125	PW-127	PW-128	PW-129	PW-130	PW-131R	PW-132R	PW-138R	
Total Constructed Casing Length (ft)	78	84	105	89	72	78	46	43.5	78	63	75	75	119.7	121	121	81	62	70	
Total Constructed Perforated Pipe Length (ft)	60	60	80	64	50	60	31	25	60	45	60	60	103	103	103	58	40	46	
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Well ID	PW-141R	PW-142R	PW-144	PW-145	PW-146	PW-147R	PW-148	PW-149	PW-150	PW-151	PW-152	PW-153	PW-154	PW-155	PW-156	PW-157	PW-158R	PW-159	
Total Constructed Casing Length (ft)	104	80	102	120	120	80	53	51	50	43	42	52	42	42	112	112	104	117	
Total Constructed Perforated Pipe Length (ft)	80	58	82	100	100	58	33	31	30	23	22	32	22	22	89	89	80	97	
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	11/12	11/12	11/12	N/A	N/A	N/A	N/A							
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	39.3	40.6	43.9	N/A	N/A	N/A	N/A							
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	68.9	45.3	50.5	N/A	N/A	N/A	N/A							
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	46.9	25.3	30.5	N/A	N/A	N/A	N/A							
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	17.3	20.6	23.9	N/A	N/A	N/A	N/A							
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	12/17	12/17	12/17	N/A	N/A	N/A	N/A							
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	46.7	40.5	50.4	N/A	N/A	N/A	N/A							
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	69.3	45.5	50.6	N/A	N/A	N/A	N/A							
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	47.3	25.5	30.6	N/A	N/A	N/A	N/A							
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	24.7	20.5	30.4	N/A	N/A	N/A	N/A							
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	1/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	45.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	25.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	9.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-160	PW-161	PW-162	PW-163R	PW-164	PW-165	PW-166	PW-167R	PW-168(M)	PW-169	PW-170	PW-171	PW-172	PW-173	PW-174	PW-175	PW-176	PW-177	
Total Constructed Casing Length (ft)	119	117	102	100	117	117	122	80	93	61	40	47	117	114	105	80	77	44	
Total Constructed Perforated Pipe Length (ft)	97	95	80	75	97	97	95	58	68	15	18	22	92	90	80	58	55	24	
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11/12	N/A	N/A	N/A	N/A	N/A	N/A	11/12	11/12	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44.7	N/A	N/A	N/A	N/A	N/A	N/A	34.4	46.2	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	76.0	N/A	N/A	N/A	N/A	N/A	N/A	100.1	62.3	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54.0	N/A	N/A	N/A	N/A	N/A	N/A	75.1	40.3	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22.7	N/A	N/A	N/A	N/A	N/A	N/A	9.4	24.2	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12/17	N/A	N/A	N/A	N/A	N/A	N/A	12/17	12/17	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42.1	N/A	N/A	N/A	N/A	N/A	N/A	37.6	46.6	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	75.7	N/A	N/A	N/A	N/A	N/A	N/A	99.7	62.2	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.7	N/A	N/A	N/A	N/A	N/A	N/A	74.7	40.2	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20.1	N/A	N/A	N/A	N/A	N/A	N/A	12.6	24.6	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1/20	N/A	N/A	N/A	N/A	N/A	N/A	1/20	1/20	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25.2	N/A	N/A	N/A	N/A	N/A	N/A	34.7	27.6	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	75.4	N/A	N/A	N/A	N/A	N/A	N/A	99.6	62.0	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.4	N/A	N/A	N/A	N/A	N/A	N/A	74.6	40.0	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.2	N/A	N/A	N/A	N/A	N/A	N/A	9.7	5.6	N/A	N/A	
November 2010																			
Date	N/A	N/A	N/A	11/12	N/A	N/A	11/12	N/A	11/12	11/12	11/12	N/A	11/12	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	37.5	N/A	N/A	52.3	N/A	43.4	49.4	42.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.2	N/A	N/A	64.3	N/A	77.6	80.6	79.5	N/A	52.0	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.2	N/A	N/A	40.3	N/A	52.6	56.6	55.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	12.5	N/A	N/A	28.3	N/A	18.4	25.4	18.5	N/A	24	N/A	N/A	N/A	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	12/17	N/A	N/A	12/17	N/A	12/17	12/17	12/17	N/A	12/17	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	62.2	N/A	N/A	52.5	N/A	57.3	49.7	40.3	N/A	40.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.6	N/A	N/A	64.3	N/A	77.8	80.4	79.6	N/A	51.9	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.6	N/A	N/A	40.3	N/A	52.8	56.4	55.6	N/A	37.9	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	37.2	N/A	N/A	28.5	N/A	32.3	25.7	16.3	N/A	26	N/A	N/A	N/A	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	1/20	N/A	N/A	1/20	N/A	1/20	1/20	1/20	N/A	1/20	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	24.9	N/A	N/A	55.0	N/A	58.0	49.6	38.8	N/A	25.1	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	74.9	N/A	N/A	63.9	N/A	77.6	80.2	79.5	N/A	51.7	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	49.9	N/A	N/A	39.9	N/A	52.6	56.2	55.5	N/A	37.7	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	0	N/A	N/A	31	N/A	33	25.6	14.8	N/A	11.1	N/A	N/A	N/A	N/A	N/A	
November 2010																			
Date	N/A	N/A	N/A	11/12	N/A	N/A	11/12	N/A	11/12	11/12	11/12	N/A	11/12	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	37.5	N/A	N/A	52.3	N/A	43.4	49.4	42.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.2	N/A	N/A	64.3	N/A	77.6	80.6	79.5	N/A	52.0	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.2	N/A	N/A	40.3	N/A	52.6	56.6	55.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	12.5	N/A	N/A	28.3	N/A	18.4	25.4	18.5	N/A	24	N/A	N/A	N/A	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	12/17	N/A	N/A	12/17	N/A	12/17	12/17	12/17	N/A	12/17	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	62.2	N/A	N/A	52.5	N/A	57.3	49.7	40.3	N/A	40.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.6	N/A	N/A	64.3	N/A	77.8	80.4	79.6	N/A	51.9	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.6	N/A	N/A	40.3	N/A	52.8	56.4	55.6	N/A	37.9	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	37.2	N/A	N/A	28.5	N/A	32.3	25.7	16.3	N/A	26	N/A	N/A	N/A	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	1/20	N/A	N/A	1/20	N/A	1/20	1/20	1/20	N/A	1/20	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	24.9	N/A	N/A	55.0	N/A	58.0	49.6	38.8	N/A	25.1	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	74.9	N/A	N/A	63.9	N/A	77.6	80.2	79.5	N/A	51.7	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	49.9	N/A	N/A	39.9	N/A	52.6	56.2	55.5	N/A	37.7	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	0	N/A	N/A	31	N/A	33	25.6	14.8	N/A	11.1	N/A	N/A	N/A	N/A	N/A	
November 2010																			
Date	N/A	N/A	N/A	11/12	N/A	N/A	11/12	N/A	11/12	11/12	11/12	N/A	11/12	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	37.5	N/A	N/A	52.3	N/A	43.4	49.4	42.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.2	N/A	N/A	64.3	N/A	77.6	80.6	79.5	N/A	52.0	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.2	N/A	N/A	40.3	N/A	52.6	56.6	55.5	N/A	38.0	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	12.5	N/A	N/A	28.3	N/A	18.4	25.4	18.5	N/A	24	N/A	N/A	N/A	N/A	N/A	
December 2010																			
Date	N/A	N/A	N/A	12/17	N/A	N/A	12/17	N/A	12/17	12/17	12/17	N/A	12/17	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	62.2	N/A	N/A	52.5	N/A	57.3	49.7	40.3	N/A	40.0	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	75.6	N/A	N/A	64.3	N/A	77.8	80.4	79.6	N/A	51.9	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	50.6	N/A	N/A	40.3	N/A	52.8	56.4	55.6	N/A	37.9	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	37.2	N/A	N/A	28.5	N/A	32.3	25.7	16.3	N/A	26	N/A	N/A	N/A	N/A	N/A	
January 2011																			
Date	N/A	N/A	N/A	1/20	N/A	N/A	1/20	N/A	1/20	1/20	1/20	N/A	1/20	N/A	N/A	N/A	N/A	N/A	
Depth To Fluid (ft)	N/A	N/A	N/A	24.9	N/A	N/A	55.0	N/A	58.0	49.6	38.8	N/A	25.1	N/A	N/A	N/A	N/A	N/A	
Measured Depth to Bottom (ft)	N/A	N/A	N/A	74.9	N/A	N/A	63.9	N/A	77.6	80.2	79.5	N/A	51.7	N/A	N/A	N/A	N/A	N/A	
Potential Exposed Perforations (ft)	N/A	N/A	N/A	49.9	N/A	N/A	39.9	N/A	52.6	56.2	55.5	N/A	37.7	N/A	N/A	N/A	N/A	N/A	
Actual Exposed Perforations (ft)	N/A	N/A	N/A	0	N/A	N/A	31	N/A	33	25.6	14.8	N/A	11.1	N/A	N/A	N/A	N/A	N/A	

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	U1R	W-1R	W1R(2)	W-2R(M)	W-3	W-4	W-5	W-7	W-8	W-9	W-10	W-11	W-12R	W-13R	W-31R	W-32R	W-33	W-34	
Total Constructed Casing Length (ft)	113	46	72	85	33	37	35	38	34	36	103	119	43	43	92	54	52	81	
Total Constructed Perforated Pipe Length (ft)	88	20	48	65	12	16	13	14	15	18	85	94	21	21	72	29	34	43	
November 2010																			
Date	N/A	11/12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth to Bottom (ft)	N/A	41.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations (ft)	N/A	15.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations (ft)	N/A	7.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
December 2010																			
Date	N/A	12/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	33.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth to Bottom (ft)	N/A	42.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations (ft)	N/A	16.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations (ft)	N/A	7.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
January 2011																			
Date	N/A	1/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	20.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth to Bottom (ft)	N/A	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations (ft)	N/A	15.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations (ft)	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Well ID																			
	W-35	W-36	W-37	W-38	W-39	W-42R(2)	W-56R(3)	W-58R	W-59	W-60	W-68	W-69R							
Total Constructed Casing Length (ft)	64	70	79	79	81	100	88	82	108	110	79	47							
Total Constructed Perforated Pipe Length (ft)	46	35	62	57	62	75	64	58	71	79	44	21							
November 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	11/12	N/A	N/A	N/A	N/A	N/A							
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	50.3	N/A	N/A	N/A	N/A	N/A							
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	83.2	N/A	N/A	N/A	N/A	N/A							
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	59.2	N/A	N/A	N/A	N/A	N/A							
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	26.3	N/A	N/A	N/A	N/A	N/A							
December 2010																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	12/17	N/A	N/A	N/A	N/A	N/A							
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	48.1	N/A	N/A	N/A	N/A	N/A							
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	82.7	N/A	N/A	N/A	N/A	N/A							
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	58.7	N/A	N/A	N/A	N/A	N/A							
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	24.1	N/A	N/A	N/A	N/A	N/A							
January 2011																			
Date	N/A	N/A	N/A	N/A	N/A	N/A	1/20	N/A	N/A	N/A	N/A	N/A							
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	N/A	32.9	N/A	N/A	N/A	N/A	N/A							
Measured Depth to Bottom (ft)	N/A	N/A	N/A	N/A	N/A	N/A	82.5	N/A	N/A	N/A	N/A	N/A							
Potential Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	58.5	N/A	N/A	N/A	N/A	N/A							
Actual Exposed Perforations (ft)	N/A	N/A	N/A	N/A	N/A	N/A	8.9	N/A	N/A	N/A	N/A	N/A							

Notes:  
Based upon discussions during the Team Countywide meeting on April 28, 2010, the table was revised to reflect potential exposed perforations (feet of constructed perforations above measured depth to bottom) and actual exposed perforations (potential exposed perforations minus measured thickness of liquid).

Table 3: West Slope Piezometer Readings

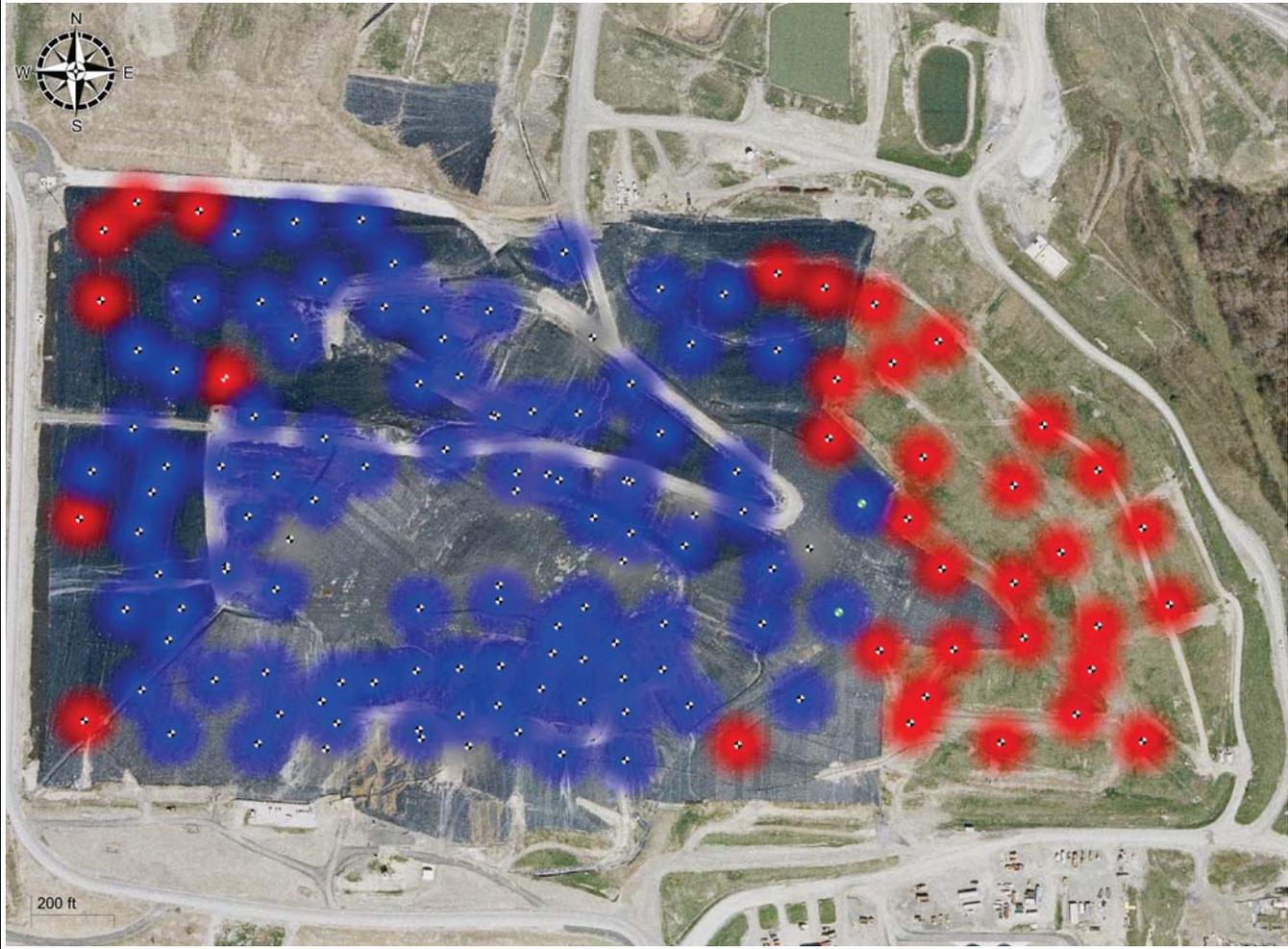
Installation Information		WBPZ-1 upper		WBPZ-1 lower		WBPZ-2 upper		WBPZ-3 upper		WBPZ-3 lower	
	Piezometer I.D.										
	Ground Elevation	1124.3		1124.3		1135.8		1145.7		1145.7	
	Depth to Transducer	74.5		102.0		85.5		59.5		84.5	
	Elevation of Transducer	1049.8		1022.3		1050.3		1086.2		1061.2	
		Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)
"Apparent" Piezometric Surface (see Note 1)	10/16/2009	1050.1	0.34	< 1022.3	-0.01	< 1050.3	-0.05	< 1086.2	-0.24	1062.7	1.50
	11/2/2009	1050.0	0.17	< 1022.3	-0.45	< 1050.3	-0.21	< 1086.2	-0.42	1061.4	0.17
	12/1/2009	1050.2	0.39	< 1022.3	-0.49	< 1050.3	-0.27	< 1086.2	-0.52	1061.3	0.08
	1/6/2010	1049.8	0.00	< 1022.3	-0.65	< 1050.3	-0.42	< 1086.2	-0.65	< 1061.2	-0.36
	2/1/2010	< 1049.8	-0.04	< 1022.3	-0.70	< 1050.3	-0.48	< 1086.2	-0.70	< 1061.2	-0.67
	3/4/2010	1049.9	0.14	< 1022.3	-0.51	< 1050.3	-0.31	< 1086.2	-0.54	< 1061.2	-0.49
	4/8/2010	1050.1	0.33	< 1022.3	-0.35	< 1050.3	-0.14	< 1086.2	-0.35	< 1061.2	-0.39
	5/6/2010	< 1049.8	-0.15	< 1022.3	-0.80	< 1050.3	-0.62	< 1086.2	-0.81	< 1061.2	-0.75
	6/2/2010	1049.9	0.07	< 1022.3	-0.54	< 1050.3	-0.35	< 1086.2	-0.63	< 1061.2	-0.60
	7/2/2010	< 1049.8	-0.05	< 1022.3	-0.77	< 1050.3	-0.57	< 1086.2	-0.73	< 1061.2	-0.67
	8/2/2010	< 1049.8	-0.04	< 1022.3	-0.75	< 1050.3	-0.57	< 1086.2	-0.71	< 1061.2	-0.65
	9/2/2010	< 1049.8	-0.04	< 1022.3	-0.75	< 1050.3	-0.57	< 1086.2	-0.72	< 1061.2	-0.67
	10/1/2010	< 1049.8	-0.13	< 1022.3	-0.82	< 1050.3	-0.67	< 1086.2	-0.78	< 1061.2	-0.67
	11/1/2010	< 1049.8	-0.16	< 1022.3	-0.9	< 1050.3	-0.69	< 1086.2	-0.82	< 1061.2	-0.7
	12/2/2010	< 1049.8	-0.24	< 1022.3	-0.90	< 1050.3	-0.82	< 1086.2	-0.94	< 1061.2	-0.74
	1/1/2011	1049.9	0.08	< 1022.3	-0.65	< 1050.3	-0.49	< 1086.2	-0.61	< 1061.2	-0.60
	2/3/2011	< 1049.8	-0.38	< 1022.3	-1.02	< 1050.3	-0.96	< 1086.2	-1.09	< 1061.2	-0.08
Trigger Elevations (see Note 2)	For F.S. < 1.5	Note 3		1048.0		1081.0		Note 3		1095.0	
	For F.S. < 1.2	Note 3		1102.0		1120.0		Note 3		1116.0	

Notes:

1. The piezometric surface is present at, or below, the elevation provided in ft.-MSL. The number in parentheses represents the water column pressure exerted on the transducer--a zero or negative pressure indicates non-saturated conditions causing soil suction
2. If the apparent piezometric surface rises above this elevation, the trigger has occurred
3. This is a redundant installation that can be used in event of failure of the corresponding lower transducer.

## **Attachment 3**

### **Figures**



**Figure 1**  
**Average Methane to Carbon Dioxide Ratio**  
 Countywide Recycling and Disposal Facility  
 3619 Gracemont St. S.W.  
 East Sparta, Ohio

Operation, Monitoring and Maintenance (O&M) Plan  
 Monthly Report

**Color Legend**



**Symbol Legend**

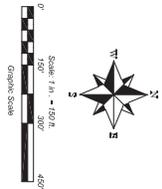
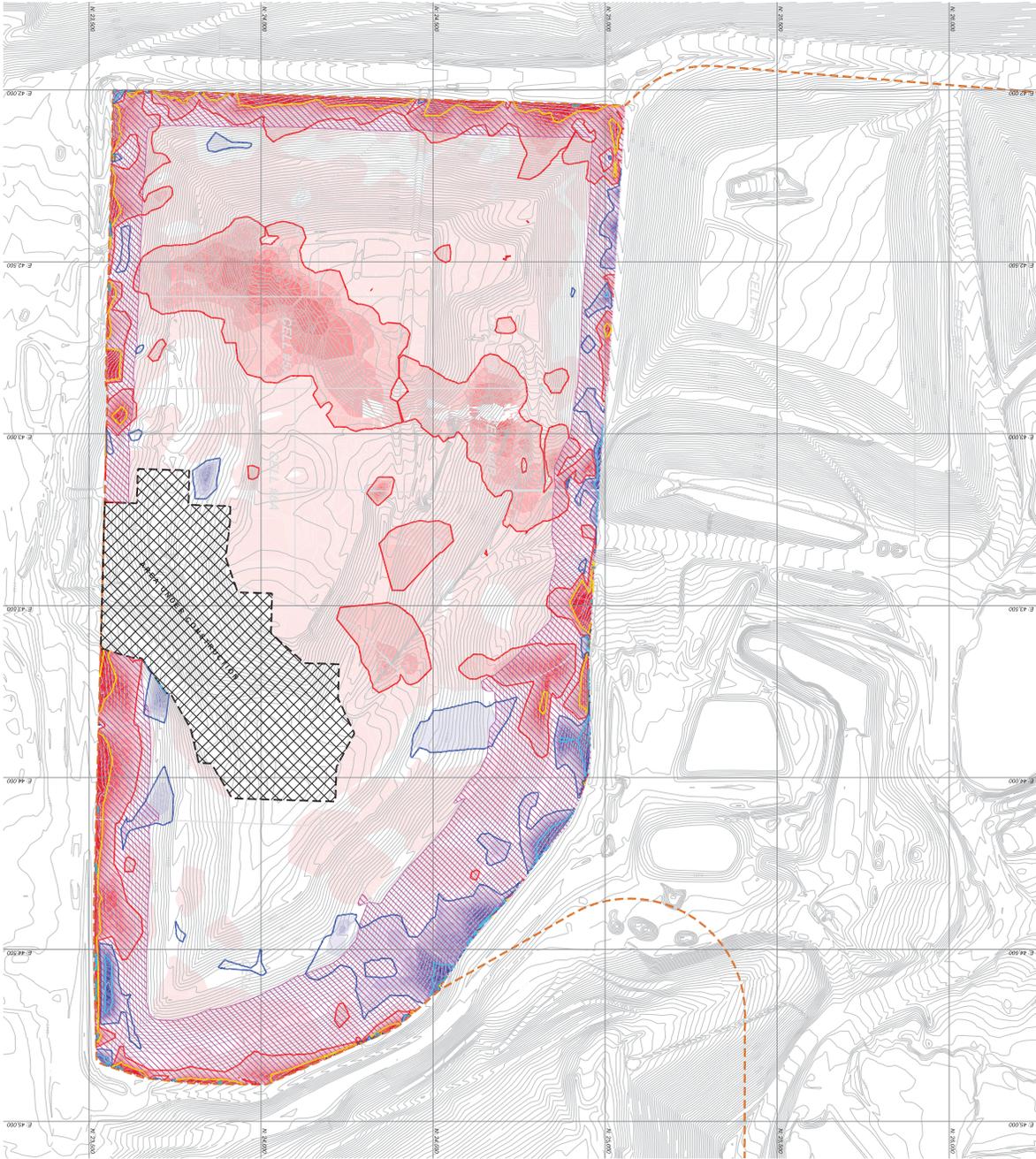
Gas Well

*(Red symbol denotes rise in value category from previous reporting period.)*  
*(Green symbol denotes decrease in value category from previous reporting period.)*

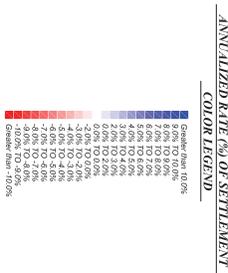
A radius influence of 100 feet is assumed at each device.

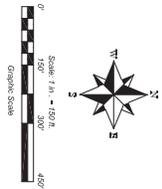
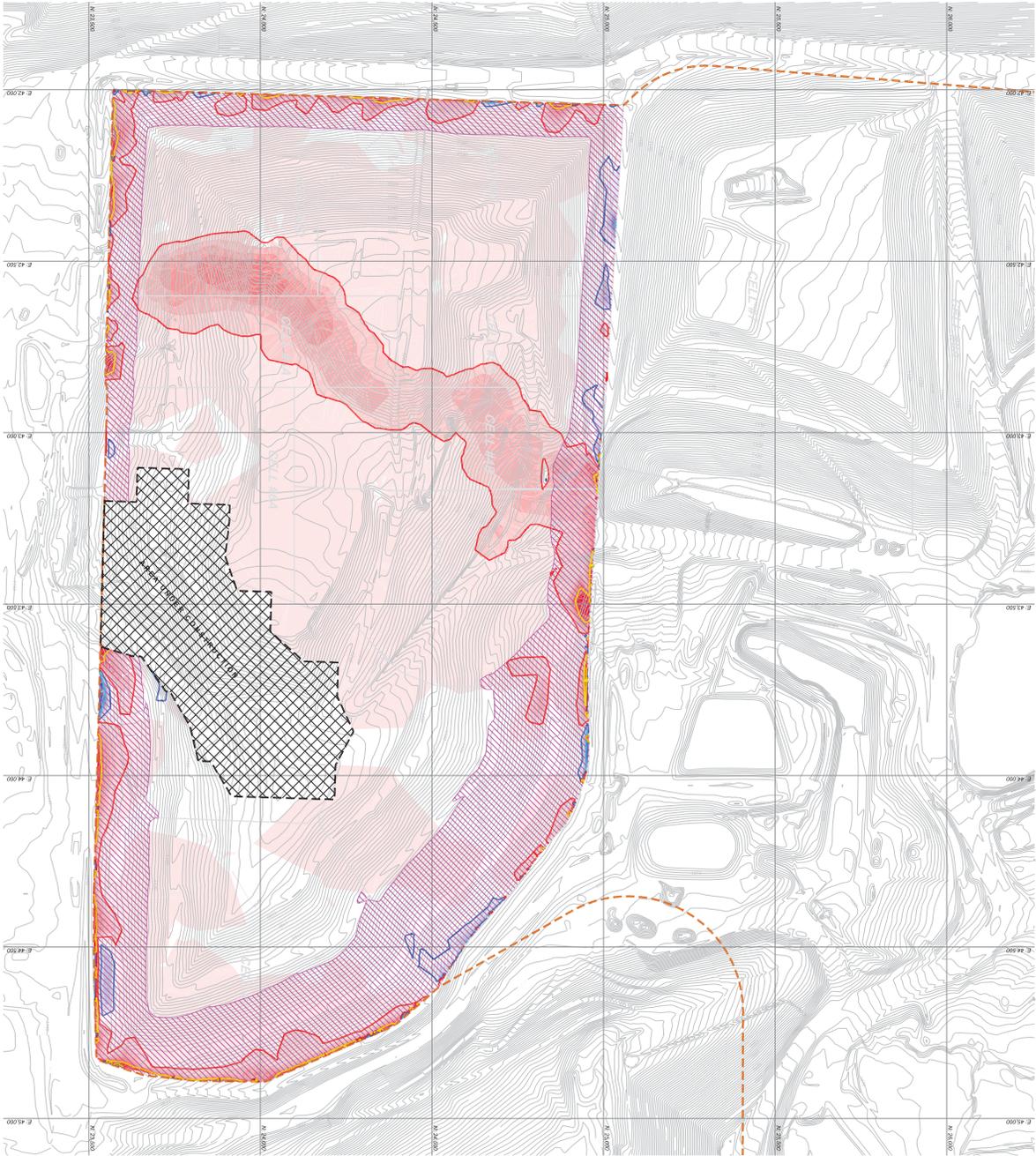
Reporting Period: January, 2011  
 Map Generated On: 02/04/2011





- LEGEND:**
- EXISTING CONTOUR (AERIAL MAPPING #1210), CTR INT. = 2'
  - GROUND FOR REFERENCE (GNL)
  - 5% RATE OF SETTLEMENT LIMIT
  - 2% RATE OF RISE IN ELEVATION
  - 10% RATE OF RISE IN ELEVATION
  - 4.0M OR WASTE DEPTH





- LEGEND:**
- EXISTING CONTOUR (AERIAL MAPPING #12/10). CTR INT. = 2'
  - SHOWN FOR REFERENCE ONLY
  - 5% RATE OF SETTLEMENT LIMIT
  - 2% RATE OF RISE IN ELEVATION
  - 1% RATE OF RISE IN ELEVATION
  - 4.0M OR WASTE DEPTH

- AVERAGE ANNUALIZED MONTHLY RATE (%) OF SETTLEMENT (OCTON LEGEND)**
- Greater than 10.0%
  - 6.0% TO 9.0%
  - 4.0% TO 5.0%
  - 3.0% TO 4.0%
  - 2.0% TO 3.0%
  - 1.0% TO 2.0%
  - 0.0% TO 1.0%
  - 1.0% TO 0.0%
  - 2.0% TO 0.0%
  - 3.0% TO -1.0%
  - 4.0% TO -2.0%
  - 5.0% TO -3.0%
  - 6.0% TO -4.0%
  - 7.0% TO -5.0%
  - 8.0% TO -6.0%
  - 9.0% TO -7.0%
  - 10.0% TO -8.0%
  - Greater than -10.0%

**COUNTYWIDE RDF**

PROJECT: 88 AC. REMEDIATION UNIT

SHEET TITLE: AVERAGE ANNUALIZED MONTHLY SETTLEMENT (OCTOBER 2010 - JANUARY 2011)

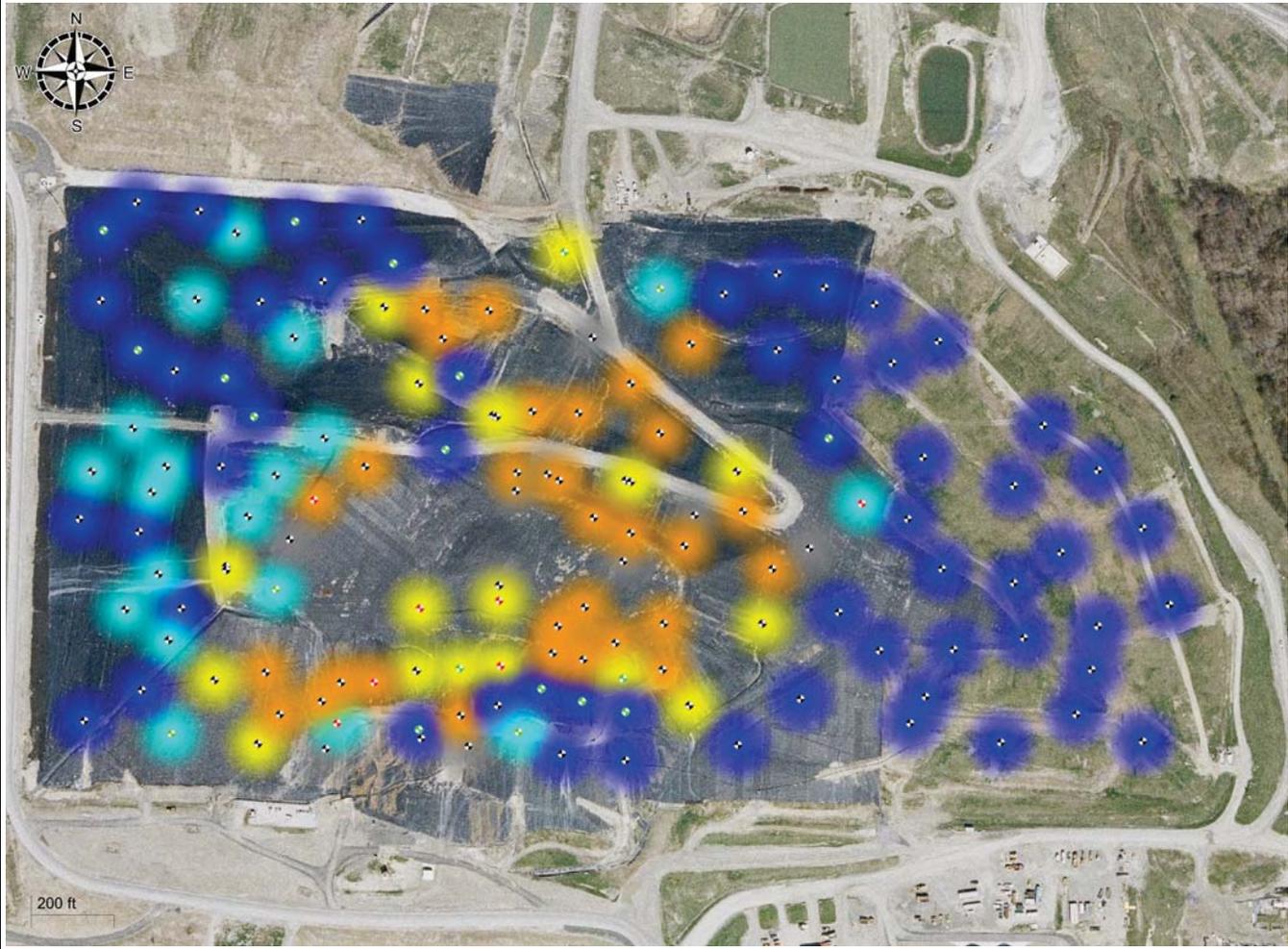
**Diversified Engineering Inc.**

1075 MAIN STREET, NE  
NEW PHELPSBURGH, OH 44663

Phone: 330.364.6211  
Fax: 330.364.6212  
www.dersiv.com

ISSUE DATE	01/27/11	SCALE	1" = 150'	CTR INT.	2'	
SUPERVISED BY	REIS	CHECKED BY	CRV	APPROVED BY	CRB	
DRAWN BY	REIS	DESIGNED BY	CRV	DESIGNED BY	CRB	
REV	DATE	DESCRIPTION	OWN BY	DES BY	CHK BY	APP BY

FIGURE  
**2A**



**Figure 3**  
**Average Wellhead**  
**Temperature**  
 Countywide Recycling  
 and Disposal Facility  
 3619 Gracemont St. S.W.  
 East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan  
 Monthly Report

**Color Legend (deg F)**

< 131
131 < 150
150 < 180
180 < 210
> 210

**Symbol Legend**

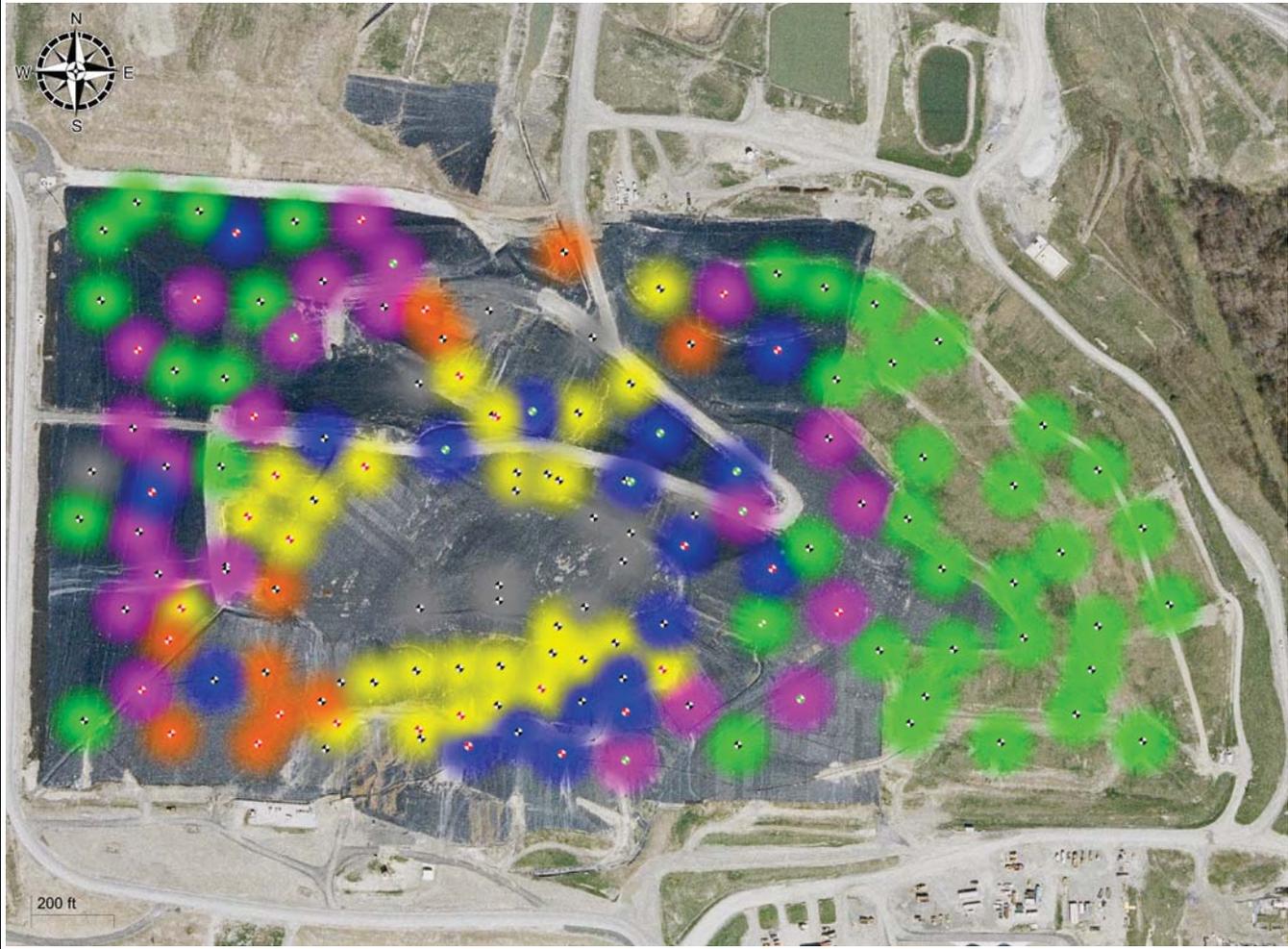
⊕ Gas Well

(Red symbol denotes rise  
 in value category from  
 previous reporting period.)  
 (Green symbol denotes de-  
 crease in value category from  
 previous reporting period.)

A radius influence of 100 feet  
 is assumed at each device.

Reporting Period: January, 2011  
 Map Generated On: 02/04/2011





**Figure 4**  
**Carbon Monoxide**  
**Distribution**  
 Countywide Recycling  
 and Disposal Facility  
 3619 Gracemont St. S.W.  
 East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan  
 Monthly Report

**Color Legend (ppm)**

- < 100
- 100 < 500
- 500 < 1000
- 1000 < 2000
- > 2000

**Symbol Legend**

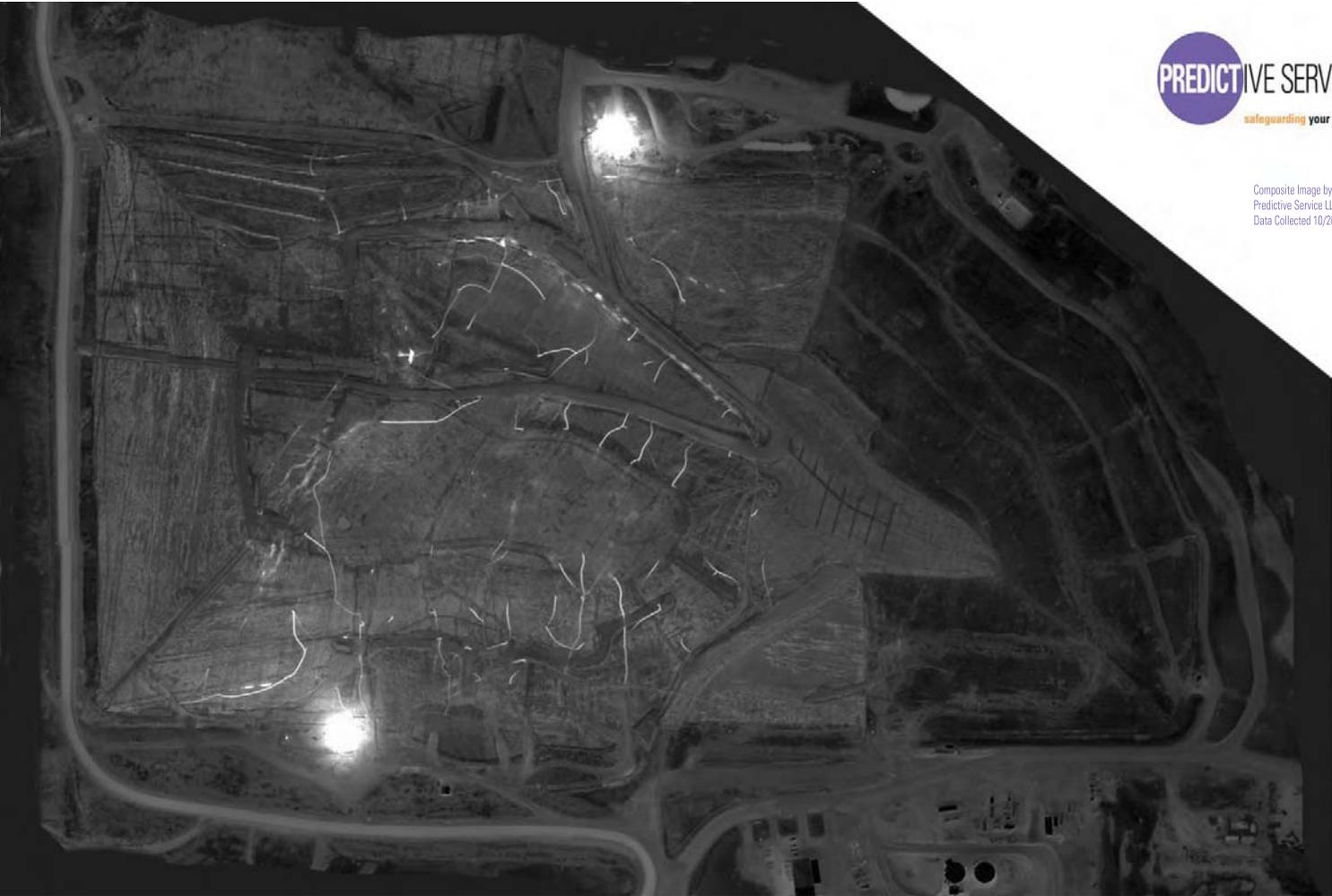
Gas Well

(Red symbol denotes rise  
 in value category from  
 previous reporting period.)  
 (Green symbol denotes decrease  
 in value category from  
 previous reporting period.)

A radius influence of 100 feet  
 is assumed at each device.

Reporting Period: August, 2010  
 Map Generated On: 02/04/2011

**REPUBLIC**  
 SERVICES  
**SANBORN HEAD**  
LAMPFL GAS MANAGEMENT SYSTEM



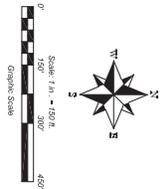
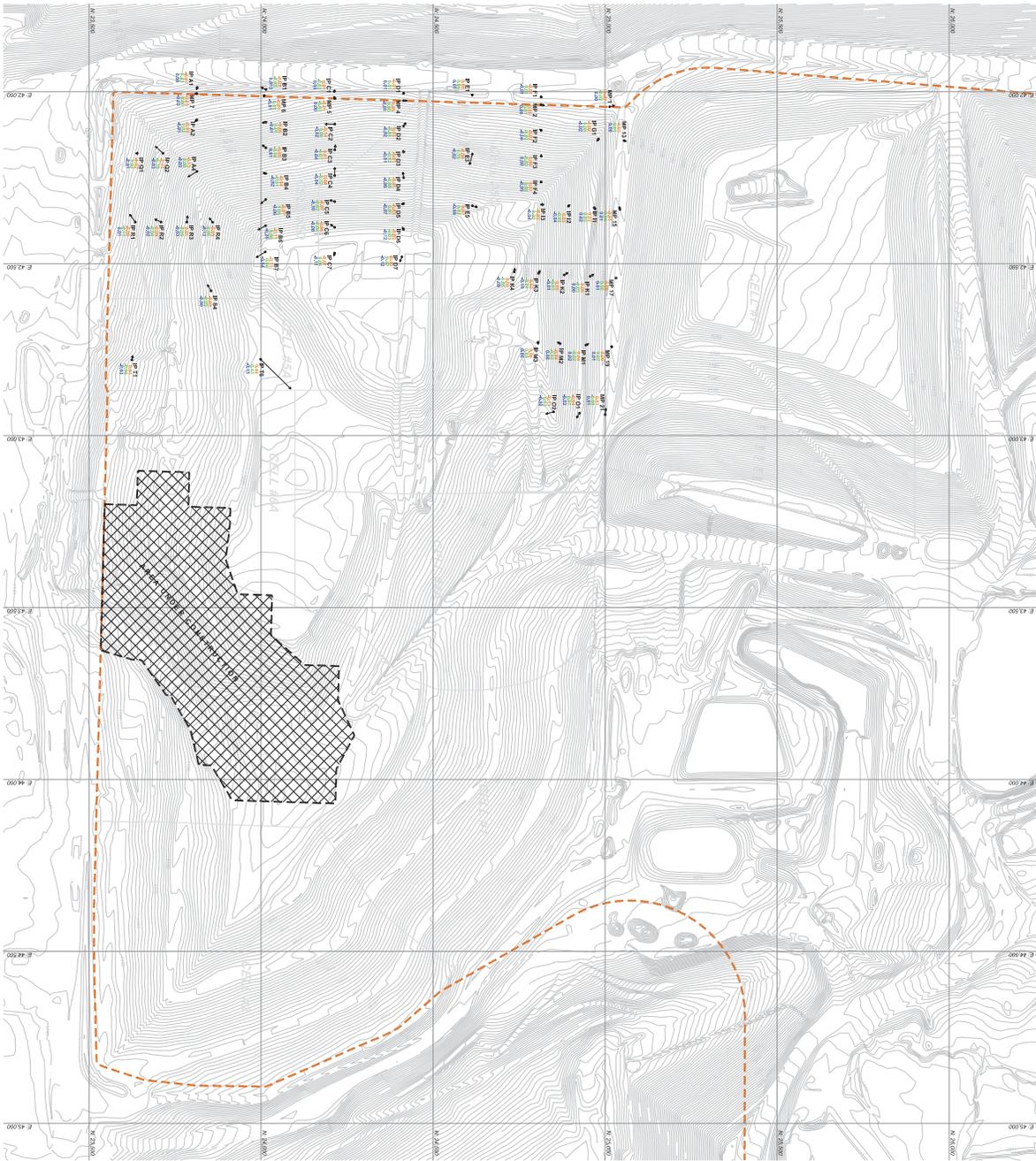
Composite Image by  
Predictive Service LLC. 216.378.3500  
Data Collected 10/20/2010





Composite Image by  
Predictive Service LLC. 216.378.3500  
Data Collected 10/20/2010





**LEGEND:**  
 EXISTING CONTOUR (AERIAL MAPPING 4/12/10). CTR INT. = 2'  
 (SHOWN FOR REFERENCE ONLY)

**VECTOR LABELING CONVENTIONS:**

IP S2  
 CHANGE IN ELEVATION IN  
 CHANGE IN ELEVATION IN

**GENERAL NOTES:**  
 1) SLOPE PIN MOVEMENT VECTORS WERE PROVIDED  
 BY P-4 CONSULTING & ASSOCIATES, P.C.  
 2) VECTORS DEMONSTRATE THE HORIZONTAL  
 MOVEMENT BETWEEN THE DATES OF 1/22/10 &  
 1/29/11

ISSUE DATE	02/04/11	SCALE	1" = 150'	CTR INT.	2'	
SURVEYED BY	REIS	CHECKED BY	CRV	APPROVED BY	CRB	
REV	DATE	DESCRIPTION	OWN BY	DES BY	CHK BY	APP BY



## **Attachment 4**

### **Pin Movement Evaluation**

February 3, 2011

Mr. Michael Darnell  
Division Manager  
Republic Services  
Countywide RDF  
3619 Gracemont Street, SW  
East Sparta, Ohio 44626

RE: Evaluation of Pin Movements  
Countywide Slopes  
January Period (12/27/10 – 1/25/11)

Dear Mike,

We have reviewed the pin survey data from the South, West and North Slopes at Countywide. The surveys during the January monitoring period (12/27/10 – 1/25/11) by Diversified Engineering, Inc. (DEI) were performed using optical survey methods for all pins (as of 10/5/2010).

The survey data has been presented in accordance with Section 6.5.4 of the Operation, Maintenance and Monitoring Plan, creating Figures 11 through 16 only for those points exceeding the trigger levels, as requested by Jerry Parker of the OH EPA. In addition, two vector plot maps that depict the horizontal pin movements for the monitoring period and since the onset of monitoring (October 6, 2009) are attached. Two tables which show the horizontal rate of movement for the monitoring period and elevation motion since the original monitoring survey (October 6, 2009) are attached after the aforementioned figures. Please note the at the reference elevation for pin IP-F1, MP-4 and MP-5 have been adjusted, as per the agreement with OH EPA. The baseline elevation of IP-F1 was re-established at the beginning of May 2010 and MP-4 and MP-5 was re-established on November 30, 2010. This is noted on the vector plot depicting movements since the beginning of the monitoring and on the Change of Elevation table.

A review of the data shows:

- No pins exceeded the trigger rate of 0.05 ft per day of horizontal movement during the monitoring period.
- Monitoring pins IP-B1, IP-C1 and IP-E1 exceeded the vertical trigger of more than 0.05 ft of upward motion since inception of monitoring.

In accordance with the OH EPA, the change of northing, easting and elevation plots versus time are attached of pin movement for the B, C and E lines which include aforementioned pins exceeding the vertical triggers. As can be seen on the attached Figures,

the plots for these lines do not present any pattern with time that could be interpreted as related to slope instability. The upward movements are most likely related to frost heave. Vector plots along the B, C and E profile lines are also included. These plots also do not indicate any changes in the ongoing trends since the inception of monitoring that would be indicative of any slope instability related behavior. Each of the points on the lines that exceeded the elevation trigger was had moved downward by the end of the monitoring period. The vertical movements are insignificant and should not trigger monitoring at a y increased frequency.

Based on the review of the data, no signs of instability are indicated. I hope that consideration is being given to modifying the trigger levels as was suggested in the last monthly report. Please call if there are any questions.

Sincerely,

A handwritten signature in blue ink that reads "Peter J. Carey". The signature is written in a cursive style with a large initial "P".

Peter J. Carey, PE  
President

## HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

ID	1/11/11	1/25/11
IP G1	0.0015	0.0010
IP I1	0.0024	0.0010
IP I2	0.00067	0.0016
IP I3	0.0030	0.0016
IP K1	0.0034	0.0014
IP K2		0.0020
IP K3	0.0019	0.0014
IP K4	0.0020	0.0016
IP M1	0.0027	0.0014
IP M2	0.0015	0.0016
IP M3	0.0013	0.00071
IP O1		0.0028
IP O2	0.0074	0.0014
MP 13	0.0021	0.0020
MP 15	0.0013	0.0029
MP 17	0.0021	0.0023
MP 19	0.0015	0.00071
MP 21	0.0047	0.0014
IP R1	0.0091	0.011
IP R2	0.0024	0.0045
IP R3	0.0060	0.0023
IP R4	0.0045	0.0014
IP S1		
IP S2		
IP S3		
IP S4	0.00094	0.0083
IP S5		
IP T1	0.0013	0.0058
IP T2	0.0013	
IP T3	0.0091	
IP T4		
IP T5		
IP T6		0.021
IP U1	0.0021	
IP U2	0.0063	
IP U3	0.0033	
IP U4	0.00094	
IP U5		
IP U6		
IP V1		
IP V2	0.00067	
IP V3	0.0045	
IP V4		
IP V5	0.0094	
IP V6		
IP W1	0.0015	
IP W2	0.0027	
IP W3	0.0024	
IP W4	0.0036	
IP W5	0.0054	
IP W6	0.0038	

## HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

ID	1/11/11	1/25/11
MP 10		
MP 11	0.0071	
MP 12	0.0019	
IP A1	0.0015	0.0016
IP A2	0.0015	0.0010
IP A3	0.0082	0.0023
IP A4	0.0091	0.0014
IP B1	0.0039	0.0014
IP B2	0.0034	0.0014
IP B3	0.0066	0.0036
IP B4		0.0014
IP B5	0.0052	0.0010
IP B6	0.0078	0.00071
IP B7*	0.009	0.002
IP C1	0.00094	0.0016
IP C2	0.0076	0.0030
IP C3	0.0041	0.00071
IP C4	0.0049	0.0038
IP C5	0.0054	0.0010
IP C6	0.0053	0.0032
IP C7*	0.003	0.001
IP D1	0.0021	0.0020
IP D2	0.0048	0.0023
IP D3	0.0039	0.0052
IP D4	0.0054	0.0014
IP D5	0.0033	0.0036
IP D6		0.0012
IP D7*	0.006	0.005
IP E1	0.0015	0.0014
IP E2	0.012	
IP E3	0.0063	0.011
IP E4		
IP E5	0.0066	0.0020
IP F1	0.00067	0.00071
IP F2	0.0024	0.00071
IP F3	0.00094	0.0010
IP F4	0.0015	0.0020
IP Q1	0.0020	0.0026
IP Q2	0.0048	0.0056
MP 1	0.0041	0.0023
MP 2	0.0021	0.0014
MP 3		
MP 4	0.0033	0.0000
MP 5	0.0033	0.0029
MP 6	0.0024	0.0014
MP 7	0.0027	0.00071
MP 8		
MP 9		

Notes:

1. Data compiled by PJ Carey & Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate pins which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.
4. All pins are surveyed using optical methods except pins B7, C7, & D7, which were surveyed using GPS up until October 5, 2010. Since October 5, 2010 all pins are surveyed using optical methods.
5. Values reported are limited to their respective significant digit.

**CHANGE IN ELEVATION (FT)  
CALCULATED BASED ON ORIGINAL SURVEY DATE OF 10-06-09**

ID	1/11/11	1/25/11
IP G1	-0.87	-0.87
IP I1	-0.21	-0.19
IP I2	-0.33	-0.33
IP I3	-1.29	-1.30
IP K1	-0.05	-0.03
IP K2		-0.41
IP K3	-1.58	-1.61
IP K4	-3.14	-3.16
IP M1	-0.04	-0.05
IP M2	-0.62	-0.61
IP M3	-1.61	-1.63
IP O1		-0.27
IP O2	-1.65	-1.65
MP 13	0.00	0.00
MP 15	0.00	0.00
MP 17	0.02	0.02
MP 19	0.00	-0.01
MP 21	0.00	-0.01
IP R1	-0.32	-0.31
IP R2	-0.39	-0.40
IP R3	-1.03	-1.07
IP R4	-1.67	-1.73
IP S1		
IP S2		
IP S3		
IP S4	-15.52	-15.76
IP S5		
IP T1	-0.81	-0.84
IP T2	-2.30	
IP T3	-3.48	
IP T4		
IP T5		
IP T6		-5.20
IP U1	-0.25	
IP U2	-0.68	
IP U3	-1.34	
IP U4	-1.30	
IP U5		
IP U6		
IP V1		
IP V2	-0.82	
IP V3	-0.78	
IP V4		
IP V5	-1.06	
IP V6		
IP W1	-0.20	
IP W2	-0.46	
IP W3	-0.49	
IP W4	-0.49	
IP W5	-0.88	
IP W6	-0.99	

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which there was a positive change greater than 0.05 ft in elevation since October 6, 2009.

**CHANGE IN ELEVATION (FT)  
CALCULATED BASED ON ORIGINAL SURVEY DATE OF 10-06-09**

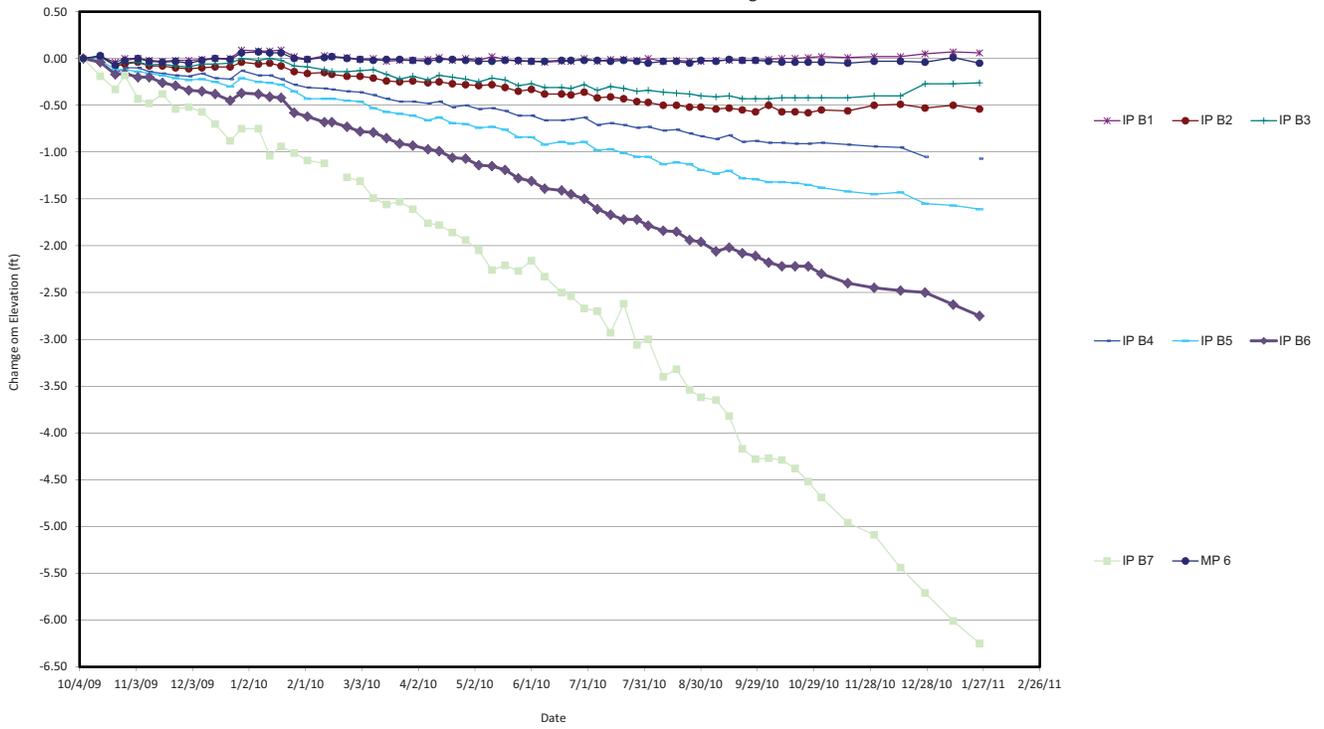
ID	1/11/11	1/25/11
MP 10		
MP 11	0.00	
MP 12	-0.01	
IP A1	0.04	0.02
IP A2	-0.37	-0.37
IP A3	-0.70	-0.74
IP A4	-0.74	-0.77
IP B1	0.07	0.06
IP B2	-0.50	-0.54
IP B3	-0.27	-0.26
IP B4		-1.07
IP B5	-1.57	-1.61
IP B6	-2.63	-2.75
IP B7	-6.01	-6.25
IP C1	0.07	0.05
IP C2	-0.35	-0.37
IP C3	-0.39	-0.40
IP C4	-0.88	-0.92
IP C5	-1.63	-1.70
IP C6	-2.42	-2.49
IP C7	-2.36	-2.39
IP D1	-0.05	-0.04
IP D2	-0.53	-0.54
IP D3	-0.41	-0.41
IP D4	-1.09	-1.11
IP D5	-1.38	-1.41
IP D6		-2.26
IP D7	-2.23	-2.25
IP E1	0.10	0.07
IP E2	-0.90	
IP E3	-0.52	-0.52
IP E4		
IP E5	-1.42	-1.45
IP F1 *	0.02	0.03
IP F2	-0.91	-0.93
IP F3	-0.94	-0.94
IP F4	-1.23	-1.24
IP Q1	-0.54	-0.53
IP Q2	-0.88	-0.91
MP 1	-0.02	-0.02
MP 2	-0.01	0.00
MP 3		
MP 4**	0.02	0.00
MP 5**	0.02	0.00
MP 6	0.01	-0.05
MP 7	-0.01	-0.10
MP 8		
MP 9		

\* On May 10, 2010, Ohio EPA approved an increase the baseline elevation of Iron Pin F1 from the original elevation of 1141.06', established on October 6, 2009, to 1141.15' due to the effects of frost heave.

\*\* On November 22, 2010, Ohio EPA approved an increase the baseline elevation of monitoring points MP-4 and MP-5 from the original elevation of 1154.82' and 1152.34', established on October 6, 2009, to 1154.88' and 1152.39', surveyed on November 30, 2010, respectively.

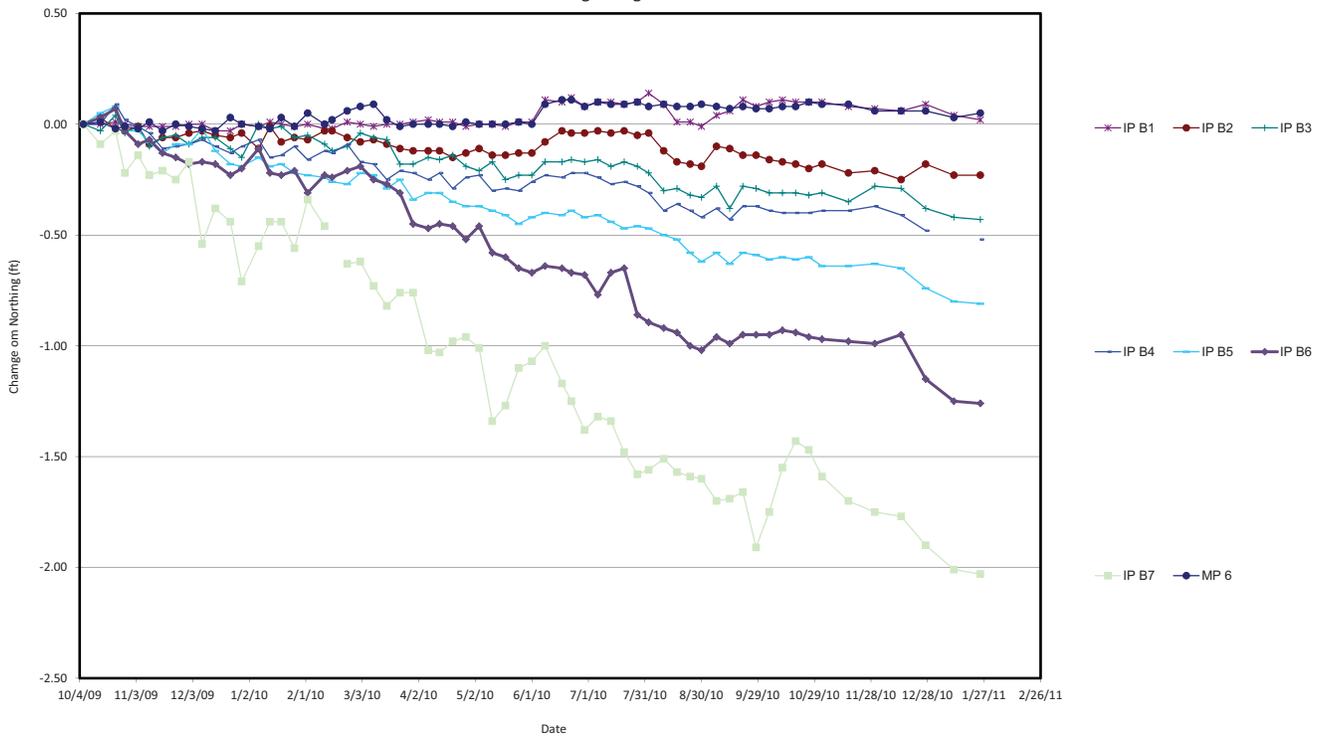
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which there was a positive change greater than 0.05 ft in elevation since October 6, 2009.

Graph 16 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Elevation Change



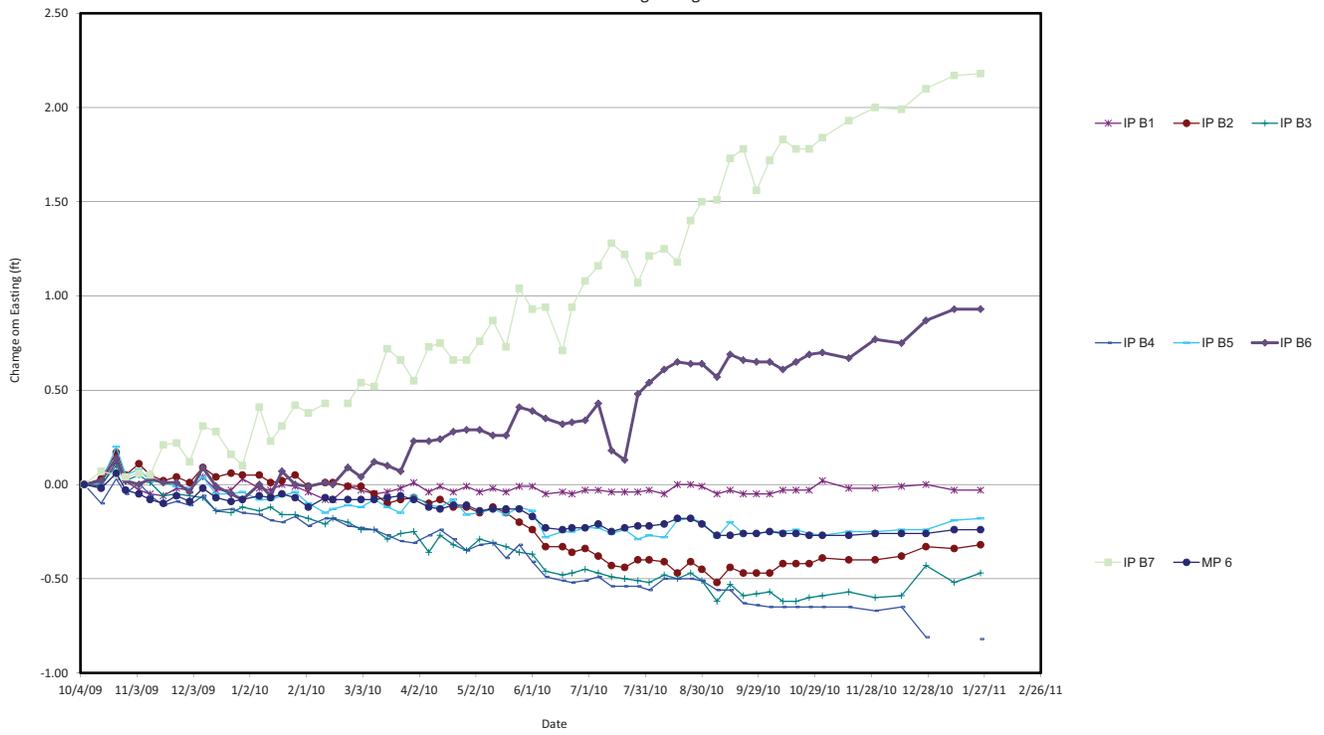
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 14 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Northing Change



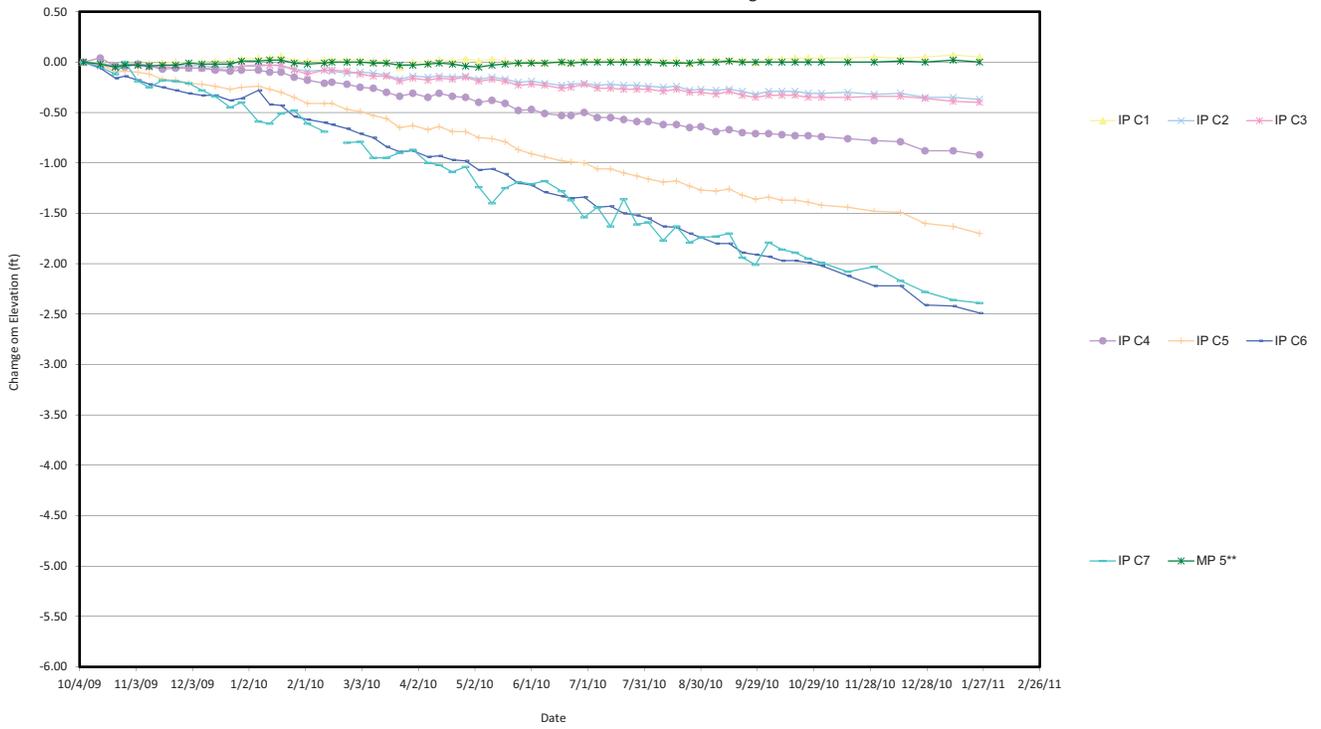
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 15 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Easting Change



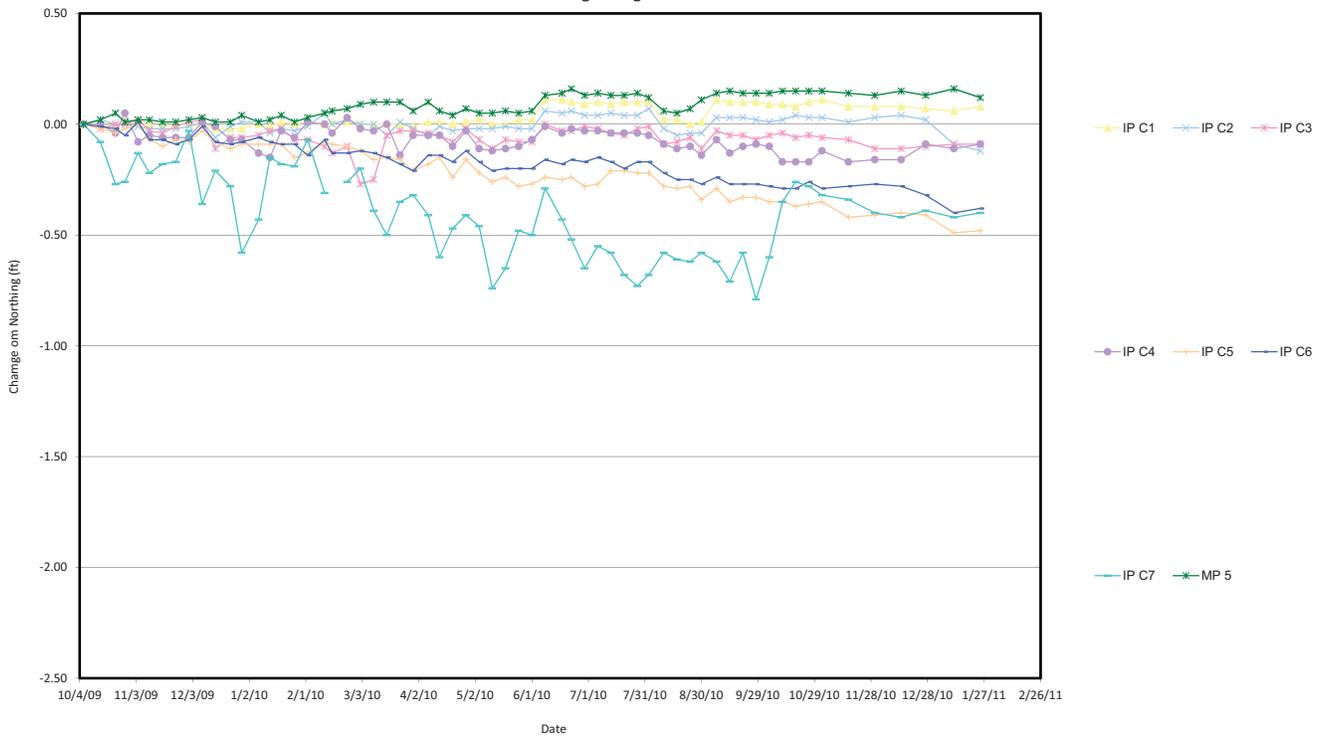
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 16 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Elevation Change



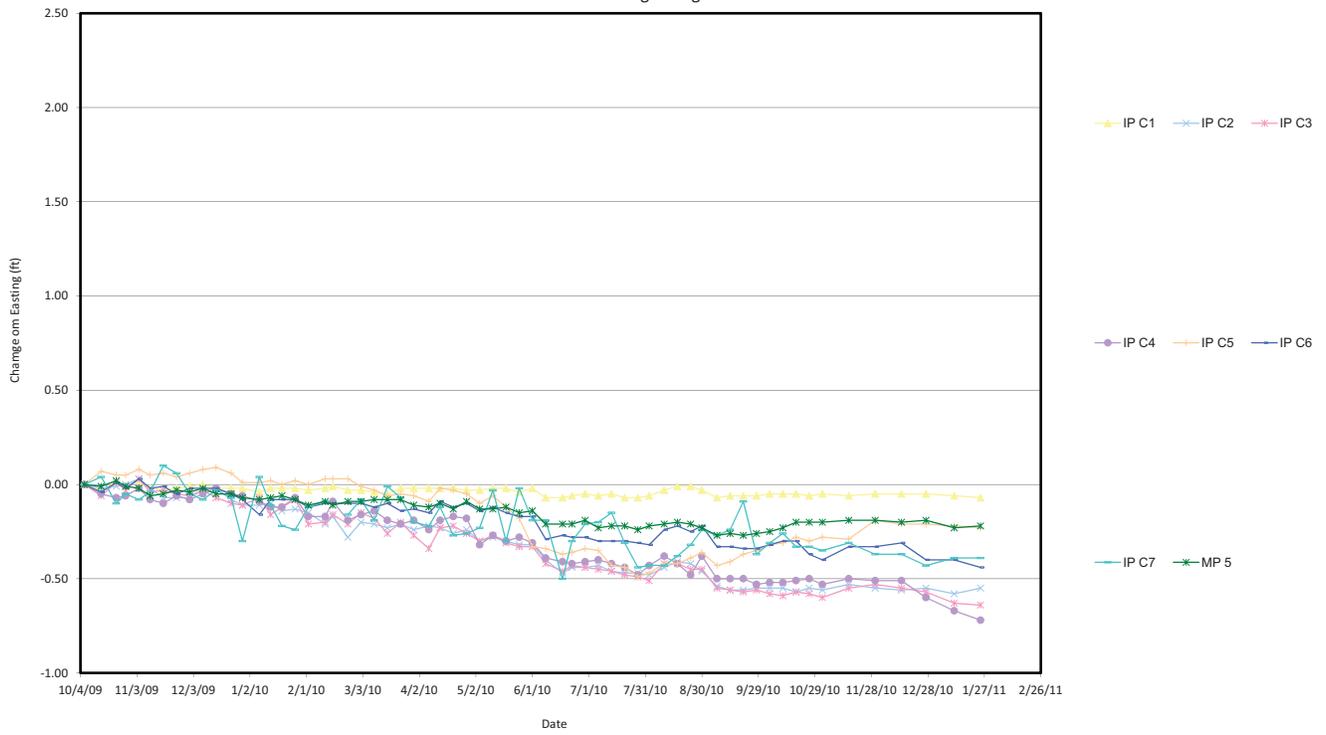
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 14 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Northing Change



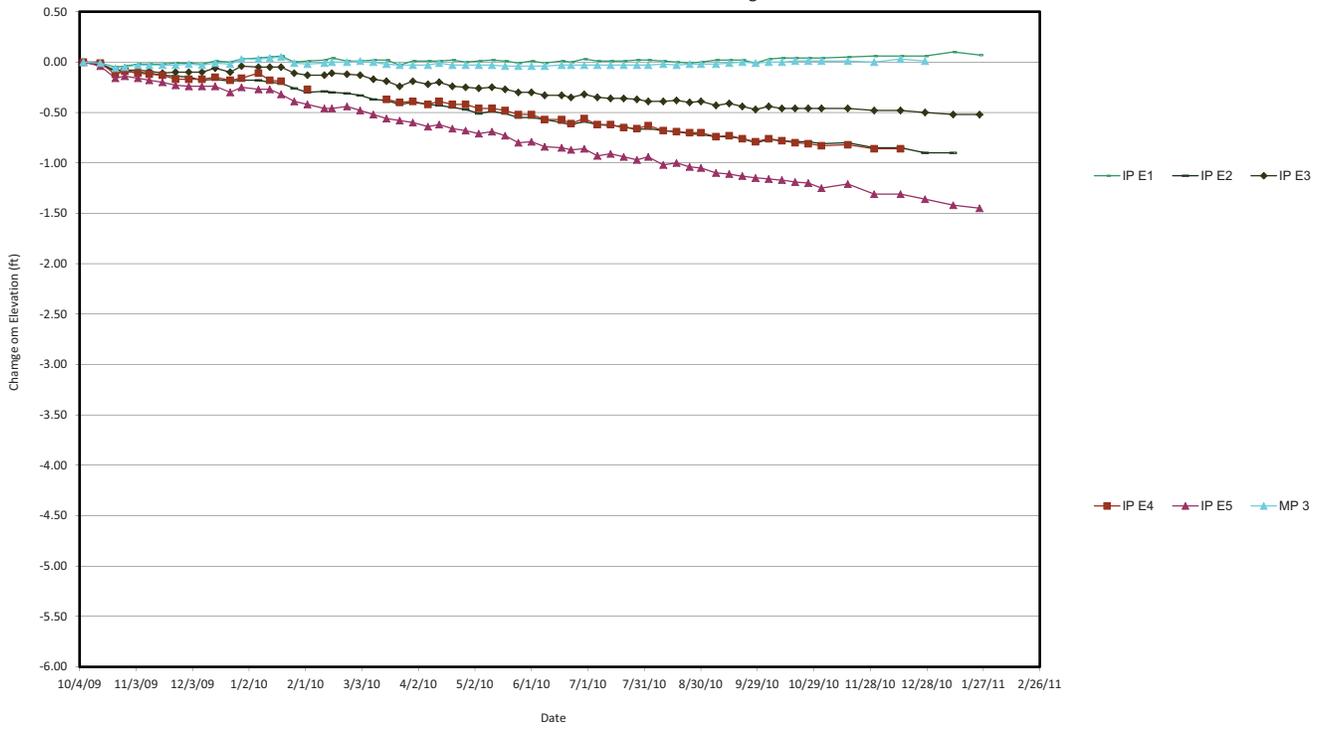
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 15 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Easting Change



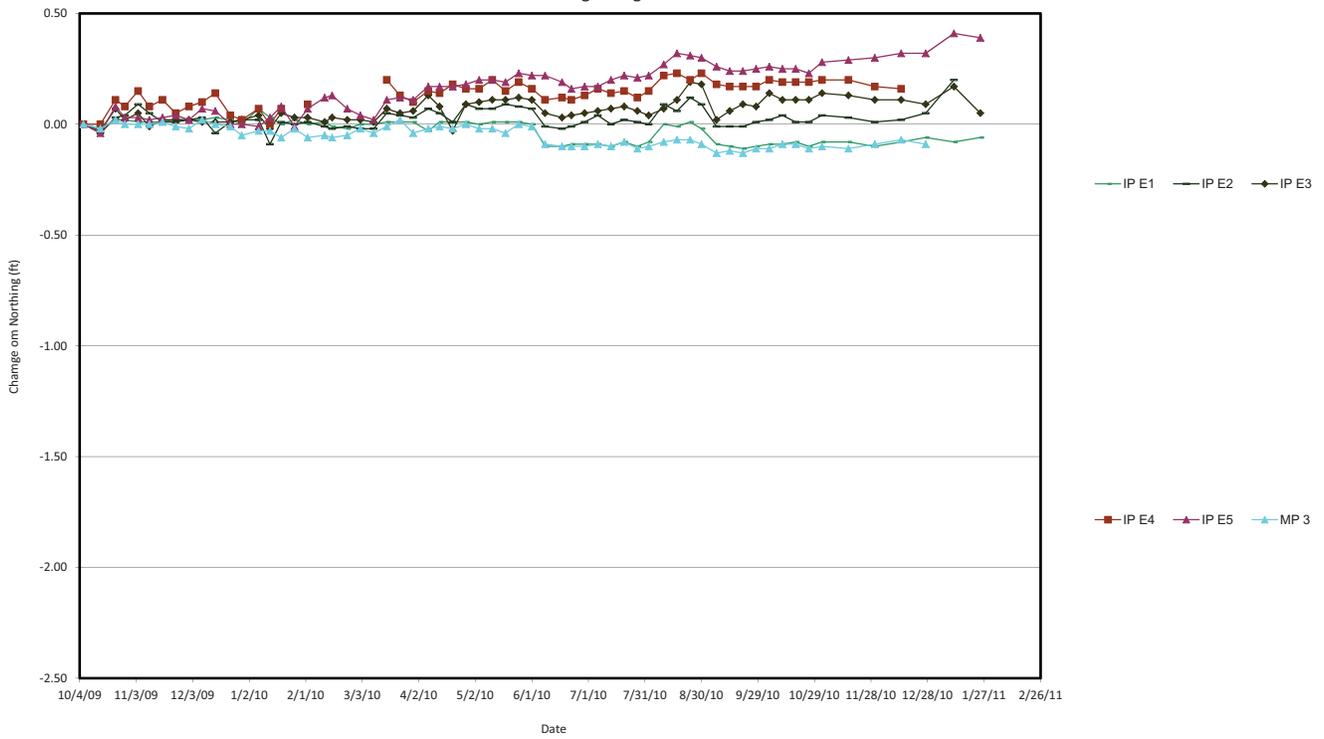
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 16 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Elevation Change



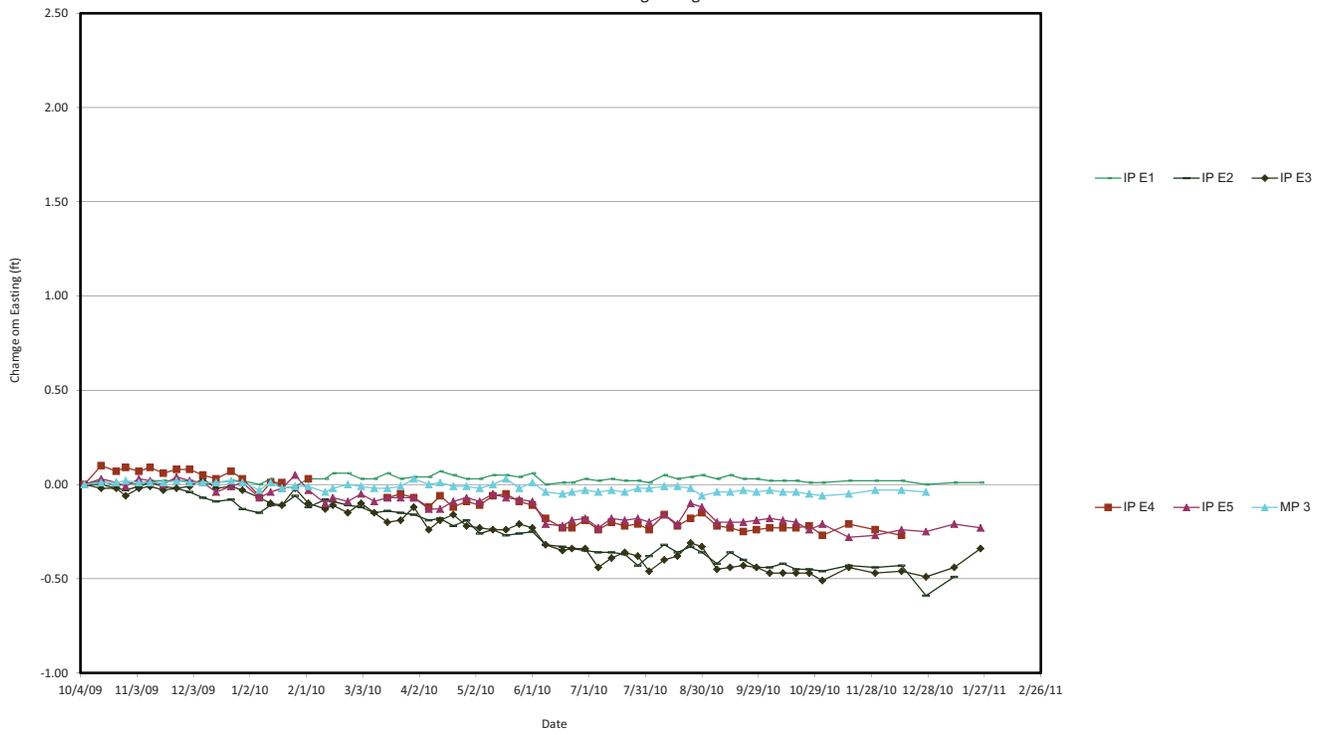
1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

Graph 14 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Northing Change

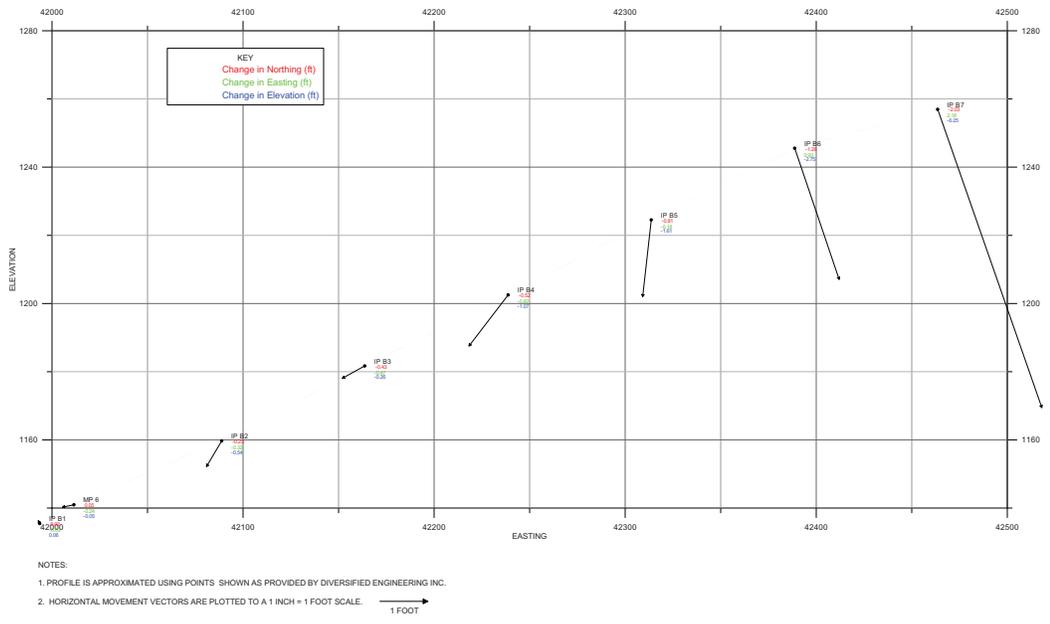


1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

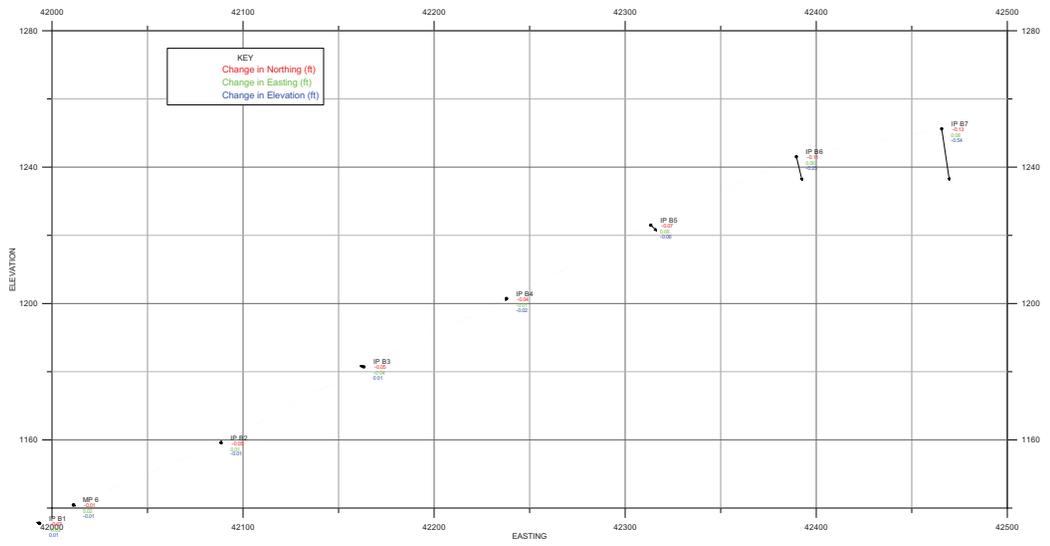
Graph 15 - West Slope Pin Movement  
 For Pins that Exceeded a Trigger During Reporting Month  
 Easting Change



1. Data compiled by PJ Carey Associates, PC.  
 2. Survey provided by DEI beginning on October 5, 2009.

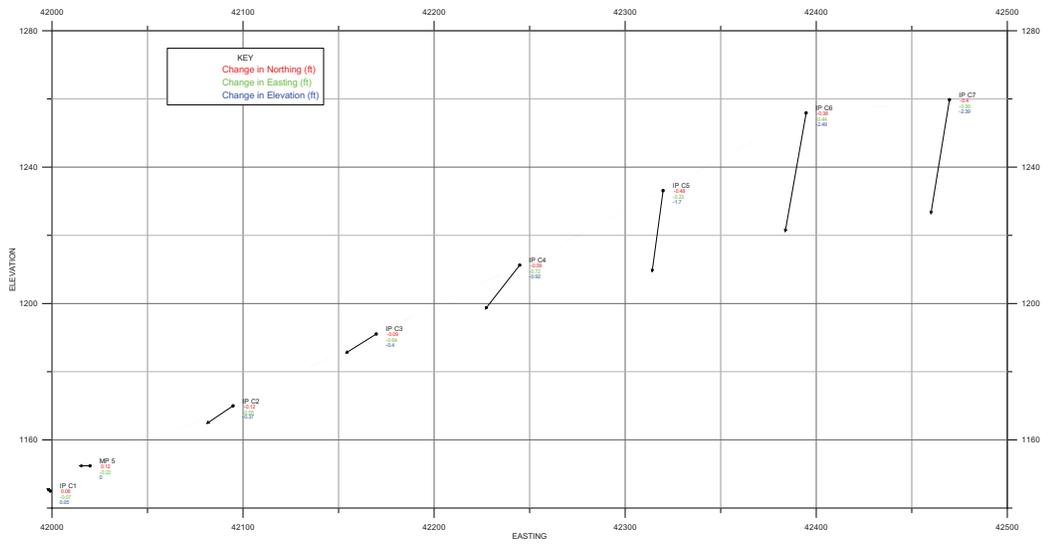


PROFILE MOVEMENT FOR ROW 'B'  
BETWEEN 10/06/2009 & 1/25/2011



- NOTES:
1. PROFILE IS APPROXIMATED USING POINTS SHOWN AS PROVIDED BY DIVERSIFIED ENGINEERING INC.
  2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 0.5 FEET SCALE. 

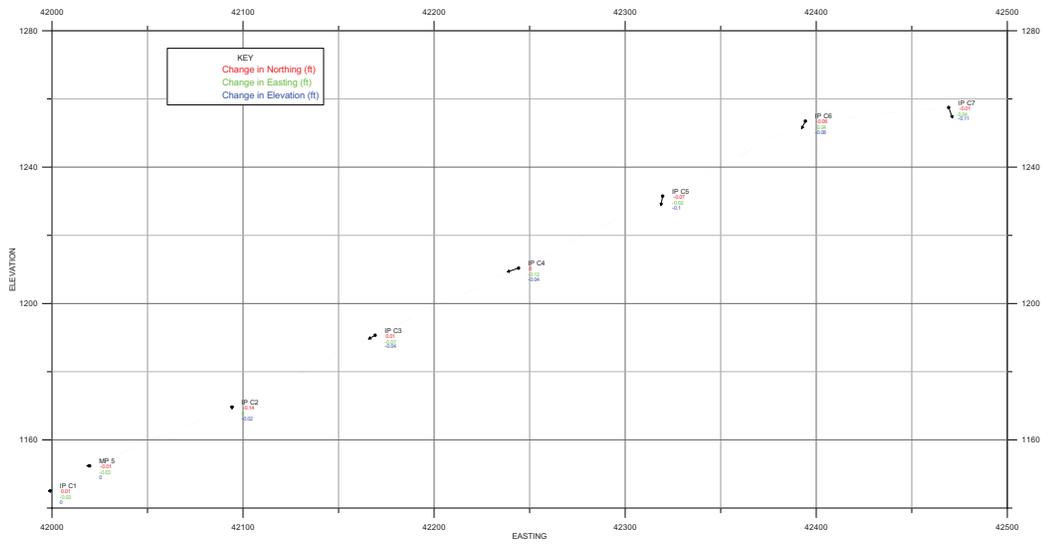
PROFILE MOVEMENT FOR ROW 'B'  
BETWEEN 12/27/2010 & 1/25/2011



- NOTES:
1. PROFILE IS APPROXIMATED USING POINTS SHOWN AS PROVIDED BY DIVERSIFIED ENGINEERING INC.
  2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 1 FOOT SCALE.

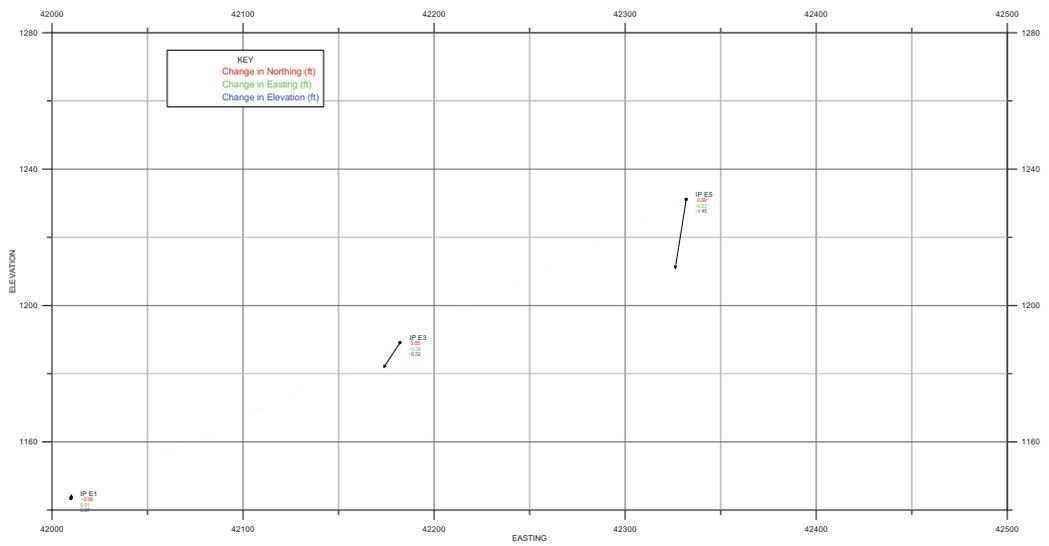
1 FOOT

PROFILE MOVEMENT FOR ROW 'C'  
BETWEEN 10/06/2009 & 1/25/2011



- NOTES:
1. PROFILE IS APPROXIMATED USING POINTS SHOWN AS PROVIDED BY DIVERSIFIED ENGINEERING INC.
  2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 0.5 FEET SCALE. 

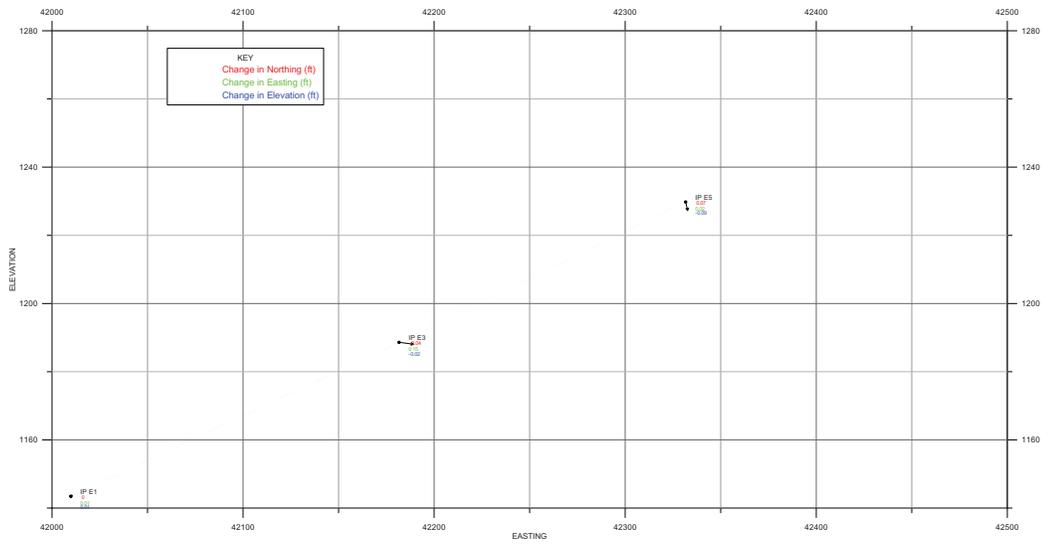
PROFILE MOVEMENT FOR ROW 'C'  
BETWEEN 12/27/2010 & 1/25/2011



- NOTES:
1. PROFILE IS APPROXIMATED USING POINTS SHOWN AS PROVIDED BY DIVERSIFIED ENGINEERING INC.
  2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 1 FOOT SCALE.

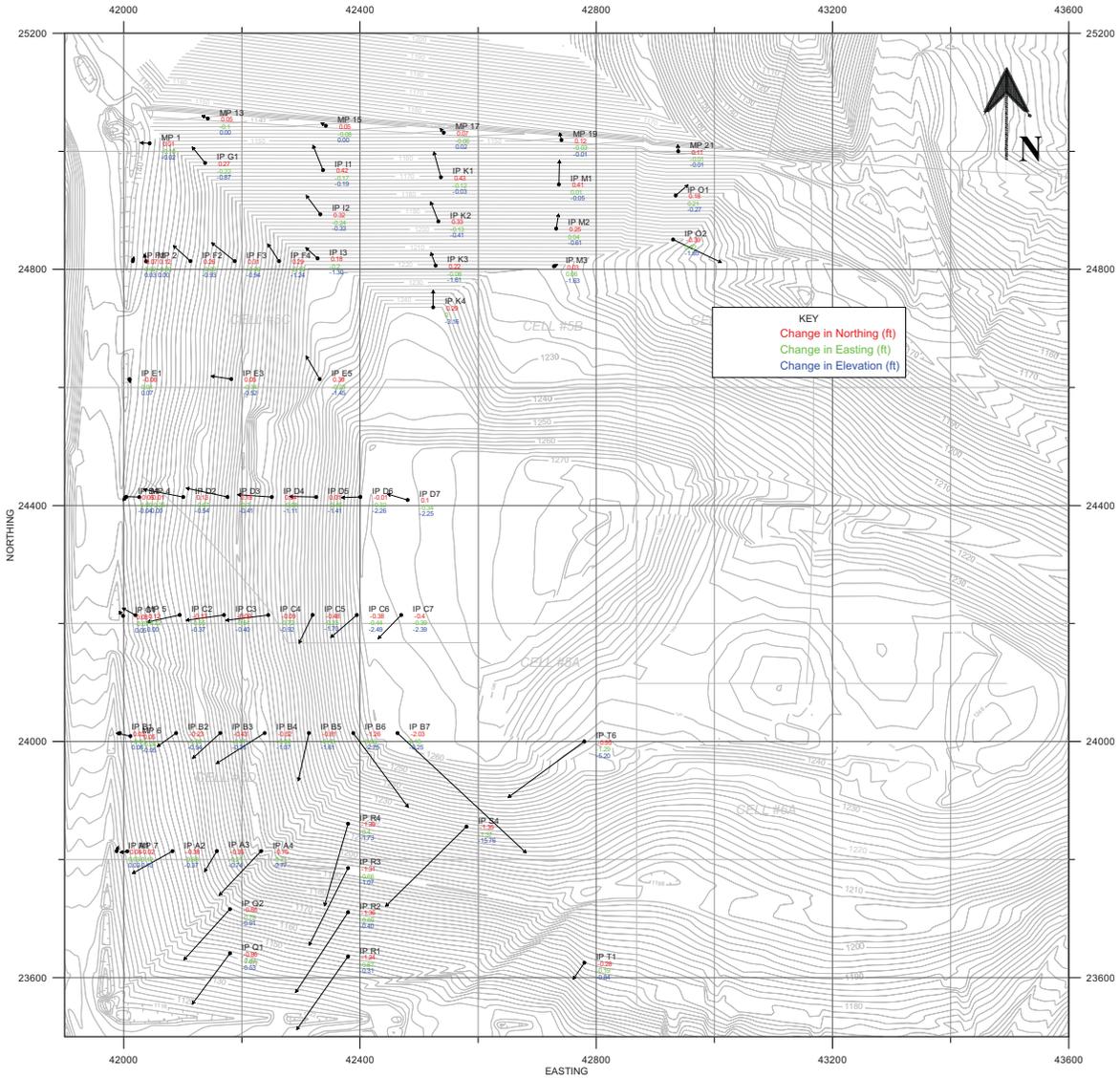
1 FOOT

PROFILE MOVEMENT FOR ROW 'E'  
 BETWEEN 10/06/2009 & 1/25/2011



- NOTES:
1. PROFILE IS APPROXIMATED USING POINTS SHOWN AS PROVIDED BY DIVERSIFIED ENGINEERING INC.
  2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 0.5 FEET SCALE. 

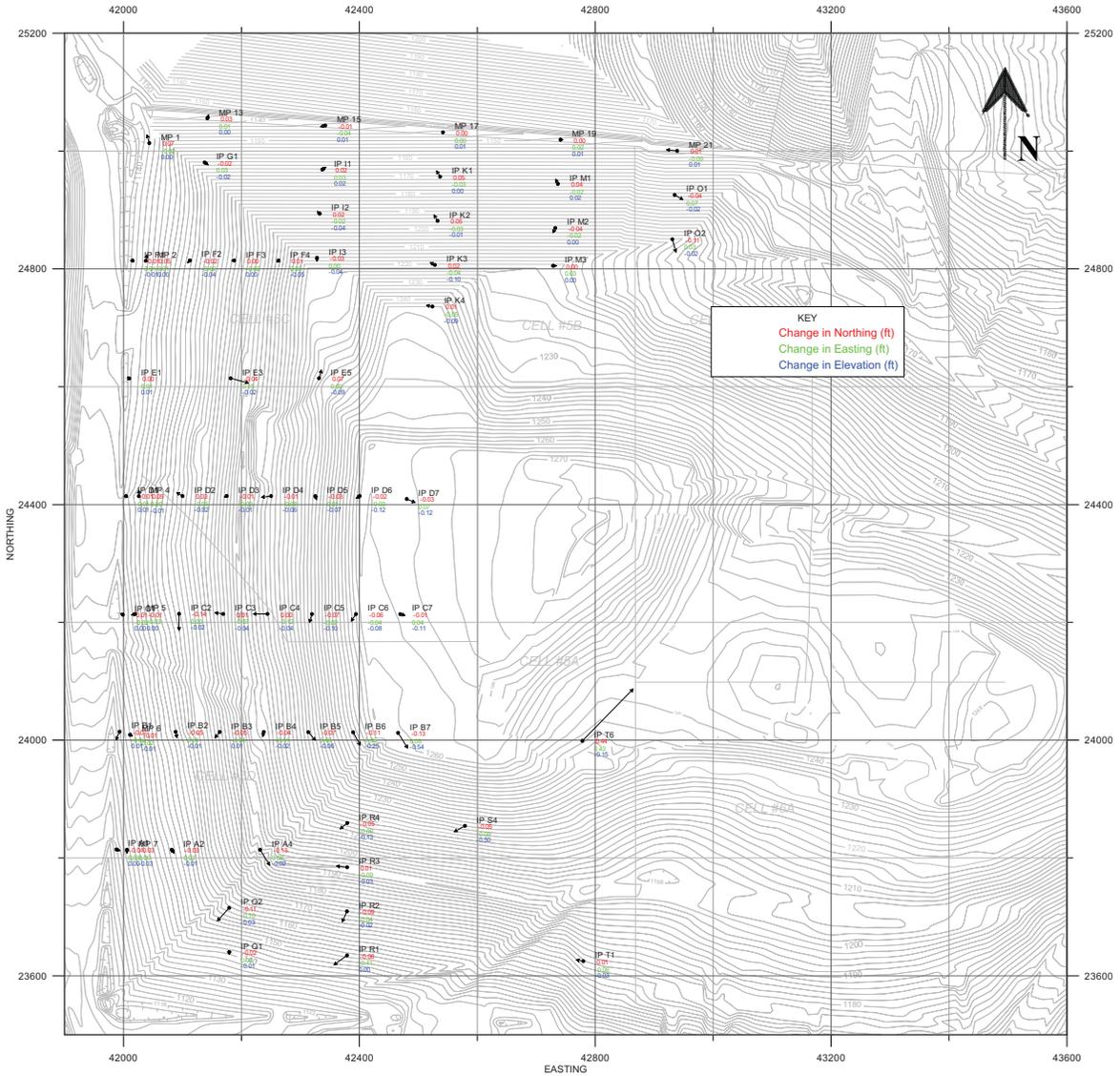
PROFILE MOVEMENT FOR ROW 'E'  
BETWEEN 12/27/2010 & 1/25/2011



NOTE:

1. TOPOGRAPHY PROVIDED BY DIVERSIFIED ENGINEERING INC AS PART OF THE "88 REMEDIATION UNIT SLOPE PINS AND MONITORING PLATES LOCATION" PROJECT, DRAWING DATED 7/21/2009.
2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 1 FOOT SCALE.   

3. ON MAY 10, 2010, OHIO EPA APPROVED AN INCREASE OF THE BASELINE ELEVATION OF IRON PIN F1 FROM THE ORIGINAL ELEVATION OF 1141.08', ESTABLISHED ON OCTOBER 6, 2009, TO 1141.19' DUE TO THE EFFECTS OF FROST HEAVE.
4. ON NOVEMBER 22, 2010, OHIO EPA APPROVED AN INCREASE THE BASELINE ELEVATION OF MONITORING POINTS MP-4 AND MP-5 FROM THE ORIGINAL ELEVATION OF 1154.82' AND 1152.34', ESTABLISHED ON OCTOBER 6, 2009, TO 1154.88' AND 1152.39', SURVEYED ON NOVEMBER 30, 2010, RESPECTIVELY.
5. VERTICAL MOVEMENT TRIGGERS WAS EXCEEDED AT IP E1, C1, AND B1 DURING MONITORING PERIOD.



**NOTE:**

1. TOPOGRAPHY PROVIDED BY DIVERSIFIED ENGINEERING INC AS PART OF THE "88 REMEDIATION UNIT SLOPE PINS AND MONITORING PLATES LOCATION" PROJECT, DRAWING DATED 7/21/2009.
2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 0.5 FEET SCALE.  0.5 FEET
3. HORIZONTAL MOVEMENT TRIGGER WAS NOT EXCEEDED DURING REPORTING PERIOD.
4. VERTICAL MOVEMENT TRIGGER WAS EXCEEDED AT IP E1, C1, AND B1 DURING THE REPORTING PERIOD.