2014 ANNUAL REMEDIAL ACTION GROUNDWATER MONITORING REPORT

FORMER ORMET CORPORATION SUPERFUND SITE HANNIBAL, OHIO

SEPTEMBER, 2015

Prepared for:

Hannibal Development Partners, LLC
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Hannibal, OH 43931

Prepared by:

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- Consulting in environmental and geological sciences

September 21, 2015

Mr. Thomas Barounis
Remedial Project Manager
USEPA, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Subject: **Ormet Site, Hannibal, Ohio**
2013 Annual Groundwater Monitoring Report

Dear Mr. Barounis:

Enclosed, on behalf of the Hannibal Development Partners, LLC, are two copies of the 2014 Annual Groundwater Monitoring Report for the former Ormet Corporation Superfund site. The report has been prepared in accordance with the Remedial Action Ground-Water Monitoring Plan (Revision 1 – April 28, 1997), which was submitted to the USEPA during Remedial Design.

Respectfully,

Geo Resource Group

Robert L. Fargo

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Principal/Senior Consultant
Robert.L.Fargo@georesourcegroup.com

cc: J. Moriarity – HDP w/enc.
M. Sherron – Ohio EPA, SEDO w/enc.

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1.0 BACKGROUND

Under the terms of a Consent Decree entered on December 18, 1995, and modified on March 11, 2009, between the United States Environmental Protection Agency (USEPA) and the Ormet Primary Aluminum Corporation (Ormet), Ormet completed Remedial Action (RA) at the Hannibal, Ohio, Superfund site consisting of the following:

- Containment of the plume in the alluvial aquifer by pumping of groundwater using the Reduction Plant Ranney well;
- Installation and operation of a soil flushing system in the Former Spent Potliner Storage Area (FSPSA);
- Capping of the former Construction Material Scrap Dump (CMSD) with a multi-layer cap, including construction of a Toxic Substances Control Act (TSCA)-compliant cell within the CMSD for disposal of backwater area sediment containing polychlorinated biphenyls (PCBs);
- Installation of a drain system along the toe of the former CMSD to collect seeps;
- Excavation of carbon material from the former carbon runoff and deposition area and disposal of the material in the former CMSD;
- Excavation of sediment from the former Outfall 004 backwater area and disposal of the sediment in the CMSD; and
- Relocation of the Outfall 004 channel.

Areas of the site that were subject to RA are shown on Figure 1.

Remedial construction was initiated in April 1997, and was certified complete in August 1998. During the period from August 1998 through October 1998, the FSPSA soil flushing system was operated on a trial basis, with flushing for a period of approximately three hours per day. Beginning in April 1999, the soil flushing system began full operation (i.e., flushing for eight hours per day). To reduce ponding of water that occurs over a portion of the FSPSA, the flushing schedule is modified annually based on storm events. Under the typical schedule, the flushing system is on for four hours each day. The flushing system is not operated during winter

months, when the ground may be frozen and freezing of the lines could occur, typically from November through March.

As specified in the Statement of Work (SOW) attached to the Consent Decree, a program of routine groundwater monitoring was initiated in conjunction with the completion of remedial construction and is ongoing. The purpose of groundwater monitoring is to document and evaluate changes in the groundwater condition beneath the site associated with the remedial actions. To provide a baseline characterization of groundwater conditions prior to remedial activities, a sitewide groundwater monitoring event was conducted during May 1997. Routine groundwater monitoring was initiated in May 1998, in accordance with the Remedial Action Groundwater Monitoring Plan (Revision 1 - April 28, 1997) that was submitted to the USEPA during Remedial Design.

In July 2014, Hannibal Development Partners, LLC (HDP) acquired specific assets of the former Ormet Corporation, including the Ormet reduction plant property, on which the Ormet Superfund site is located. By this acquisition, HDP assumed responsibility for the continued operation, maintenance, and monitoring of the site, which is ongoing.

2.0 SUMMARY OF GROUNDWATER MONITORING PROGRAM

The current system of groundwater monitoring wells and piezometers at the Ormet site is shown on **Figure 1**. Under the RA Groundwater Monitoring Plan, monitoring was conducted three times per year (approximately once every four months) beginning in 1998 through 2012. Given the substantial groundwater flow and water quality database established for the Ormet site, the USEPA, by letter dated January 29, 2013, approved a shift from tri-annual to annual monitoring beginning in 2013. The 2014 annual groundwater monitoring event was conducted from July 21 to 23.

The annual monitoring event included measurement of water level elevations at MW- and TH-series monitoring wells, PPB-series piezometers monitoring the alluvial aquifer, and Ohio River pool measuring points RP-1 and RP-2. Water level elevation data collected in conjunction with the 2014 monitoring event are provided in **Table 1**, and a groundwater contour map based on the data is provided as **Figure 2**.

The annual monitoring event includes collection of groundwater samples from the following wells:

MW-1	MW-14	MW-31*
MW-2*	MW-15	MW-32*
MW-5*	MW-16*	MW-34 S&D
MW-7	MW-17	MW-35*
MW-8	MW-18*	MW-36*
MW-10	MW-19	MW-37*
MW-11	MW-28*	MW-39 S&D
MW-12*	MW-29 S&D	MW-40 S&D
	MW-30	MW-42 S&D

Of these wells, MW-7 and MW-19 are regarded to be background monitoring wells. Wells designated with * were identified in the RA Groundwater Monitoring Plan as Points of Compliance, as required under Section II.6. of the Consent Decree SOW.

Water Sampling Log forms for the 2014 annual monitoring event are provided in **Appendix A**.

A primary purpose of the annual monitoring event is to collect data to prepare plume isopleth maps. The isopleth maps are then used to estimate contaminant mass-in-place and the total

area of the aquifer having fluoride concentrations greater than 4.0 milligrams per liter (mg/L) and total cyanide concentrations greater than 0.2 mg/L. These estimates are then compared to previous years' estimates to document changes in groundwater quality during the remediation program.

From the start of routine groundwater monitoring in May 1998 through 2012, groundwater samples from all monitoring wells were analyzed for constituents for which cleanup goals were specified in the Record of Decision (ROD) for the site; i.e., arsenic, beryllium, cyanide, manganese, vanadium, and fluoride. Samples were also analyzed for pH, specific conductance, and sodium, which are additional indicators of the plume in the alluvial aquifer. Tetrachloroethene (PCE) is analyzed in samples from the MW-2, MW-5, MW-18, MW-30, and MW-31 monitoring wells in which PCE was detected during the Remedial Investigation (RI). By the USEPA's approval on January 29, 2013, PCBs, beryllium, and vanadium were deleted from the list of analyses performed, as past data have shown these parameters to be non-detectable or consistently below cleanup goals. Also, weak acid dissociable (WAD) cyanide replaces cyanide amenable to chlorination (amenable cyanide), as WAD cyanide is regarded to be a more reliable surrogate for free cyanide, on which the cleanup goal for cyanide is based.

Analyses of groundwater samples were performed by Pace Analytical Services, Inc. of Greensburg, Pennsylvania. The parameters analyzed during 2014 and their corresponding groundwater cleanup goals are listed below.

Analytical Parameter	Groundwater Cleanup Goal (mg/L)
Arsenic	0.01*
Manganese	0.23*
Cyanide (total)	N/A
Cyanide (WAD)	0.2
Fluoride	4
Tetrachloroethene	0.005
pH	N/A
Specific Conductance	N/A
Sodium	N/A

N/A - Not Applicable

* - Final determination of cleanup goals for arsenic and manganese are pending. The USEPA and Ormet negotiated a Consent Decree and associated Statement of Work for implementation of the ROD. Because arsenic and manganese are common groundwater constituents in the Ohio River Valley and can occur naturally at concentrations above the cleanup goals presented in the ROD, the SOW specified that as part of the Remedial Design process, Ormet would conduct a statistical evaluation to determine background levels of arsenic and manganese in the alluvial aquifer. The resulting background levels would then be considered for use as cleanup goals in place of the levels presented in the ROD. The results of the statistical analyses, which were presented to the USEPA in the August 28, 1996, HydroSystems Management, Inc. report titled, "Statistical Analyses of Background Levels of Manganese and Arsenic in Ground Water," indicated background levels of 40 micrograms per liter (µg/L) for arsenic and 9,780 µg/L for manganese.

The laboratory data report for the 2014 groundwater analyses is provided in **Appendix B**, and the analytical results are summarized in **Table 2**. For comparison, **Table 2** also includes historical results for the parameters and wells being monitored. The data validation summary report for the 2014 analyses is provided in **Appendix C**.

3.0 RESULTS OF 2013 REMEDIAL ACTION GROUNDWATER MONITORING

3.1 Groundwater Flow

Water level elevation data collected as part of the annual monitoring event (Table 1) were used to construct the groundwater contour map presented as Figure 2. The groundwater elevation contours and associated groundwater flow patterns shown in Figure 2 are consistent with those previously mapped for much of the site. Groundwater flow in the alluvial aquifer is generally from northeast to southwest, toward the Ormet Reduction Plant Ranney® well. In the easternmost part of the site, beneath a portion of FDP No. 5, there appears to be a minor component of flow to the east-southeast, toward the Ohio River. This is believed to be the result of a prolonged period of pumping of the Ranney® well at the minimum rate of 1 million gallons per day specified by USEPA. To further investigate this interpretation, the pumping rate of the Ranney® well will be adjusted upward prior to 2015 annual groundwater sampling event. Groundwater elevation measurements and contours from the 2015 event will be compared to the 2014 results. If needed, further adjustment in pumping rate may be made.

Pumping of the former Ormet Rolling Mill Ranney® well (located about 2,000 feet west of the Reduction Plant Ranney® well) was discontinued in late 2005, and the well was abandoned by Reynolds, Inc. of Middletown, Ohio, in June 2009. By this change, the groundwater divide that in previous years existed roughly parallel to and west of the fenceline separating the two plants is no longer present, and groundwater beneath the former Rolling Mill property (now the Hannibal Industrial Park) is now drawn toward the former Reduction Plant Ranney® well (see Figure 2).

3.2 Groundwater Quality

3.2.1 Cleanup Goals

The following table compares the cleanup goals specified in the ROD and, in the case of arsenic and manganese, the background values previously calculated, with the 2014 results for samples collected from the compliance wells. It is noted that comparisons to cleanup goals for beryllium, vanadium, and PCBs have been discontinued, as past data have shown these parameters to be

non-detectable or consistently below cleanup goals and analyses of these parameters have been dropped from the monitoring program.

COMPARISON OF LATEST REPORTED CONCENTRATION TO CLEANUP GOALS/BACKGROUND(1)

	WAD Cyanide	Fluoride	Arsenic	Manganese
Cleanup Goal/Background (mg/L) >	0.2	4.0	0.01/0.04[1]	0.23/9.8[1]
Wells within FSPSA				
MW-32	+	+	0	0
MW-35	+	*	*	0
MW-36	*	+	*	*
MW-37	*	*	*	*
Downgradient Edge of FSPSA				
MW-16	*	+	0	0
MW-18	*	+	X	*
MW-28	*	*	*	*
MW-31	*	+	0	0
Mid Plant Area				
MW-2	*	+	0	0
MW-5	+	+	*	0
Downgradient of CMSD				
MW-12	*	*	*	0

* - Latest result at or below ROD cleanup goal.
0 - Latest result is above ROD cleanup goal, but below calculated background (arsenic and manganese only).
+ - Latest result is above ROD cleanup goal.
X – Latest result is above calculated background (arsenic and manganese only).
(1) Background values calculated by Hydrosystems Management, Inc. (August, 1996). Arsenic background = 0.04 mg/L; manganese background = 9.78 mg/L.

As shown in the above table, manganese was below the ROD cleanup goal and/or the calculated background value in all compliance monitoring wells; WAD cyanide exceeded its cleanup goal in only three compliance wells; and, arsenic exceeded the ROD cleanup goal and the calculated background concentration in only one compliance well.

3.2.2 Concentration vs. Time Trends

To evaluate changes in plume concentrations within the alluvial aquifer beneath the site, recent and historical results are used to prepare concentration versus time graphs for each monitoring parameter for which a cleanup goal was established in the ROD, with each parameter being graphed separately for each of the compliance point wells identified in the RA Groundwater Monitoring Plan (see **Appendix D**). Analytical results for sodium are also graphed, because it is an additional indicator of the plume.

Discussions of the concentration versus time trends for each parameter focus mainly on data collected since the pre-remediation monitoring event performed in 1997. In viewing the concentration versus time graphs, it should be noted that the construction and operation of the soil flushing system in the FSPSA altered site water quality conditions for certain parameters (e.g., cyanide, fluoride) at certain wells. Construction activities (1997 to 1998) involved grading to establish desired surface slopes and trenching to install underground piping to route water to spray birds, both of which loosened the upper soil profile and predictably made constituents present in the soil matrix more available to leaching. Operation of soil flushing (pilot tested in 1998 and fully operational in 1999) was specifically designed to accelerate the rate at which constituents were leached from the soil to the groundwater. The net result observed for certain wells was an initial increase in concentrations roughly corresponding to construction and operation of soil flushing, generally followed by a gradual decrease.

3.2.2.1 Cyanide

The cleanup goal for cyanide established in the ROD (0.2 mg/L) is the Safe Drinking Water Act Maximum Contaminant Level (MCL) for free cyanide. Cyanide amenable to chlorination, which had been used as a surrogate for free cyanide, is that portion of total cyanide existing as free cyanide, cyanide salts, and weakly bound cyanide complexes apt to contribute to free cyanide. Beginning in November 2010, Ormet initiated routine analyses for WAD cyanide, as it also quantifies concentrations of free cyanide, cyanide salts, and weak cyanide complexes apt to contribute to free cyanide, and is regarded to be a more reliable and consistent surrogate for free cyanide. By the USEPA approval on January 29, 2013, WAD cyanide is now used at the site as the surrogate for free cyanide, and analyses for amenable cyanide have been discontinued. Historical sampling results (**Table 2**) show total cyanide concentrations for a

given well that are typically much higher than the corresponding concentrations of amenable cyanide, free cyanide, or more recently WAD cyanide. These data demonstrate the predominant form of cyanide occurring in the groundwater beneath the site is the more stable cyanide complexes.

In reviewing the analytical results for the 2014 groundwater monitoring event, it was noted that WAD CN concentrations reported for all samples contained in Pace Analytical Project #30125609 (one of two reports issued by Pace for the sampling event) were consistently much higher than historical levels. This includes samples for the following wells:

MW-5	MW-11	MW-32	MW-36
MW-7	MW-14	MW-34S	MW-37
MW-8	MW-15	MW-34D	MW-39S
MW-10	MW-17	MW-35	MW-39D

Extensive review of field and laboratory procedures did not reveal the cause of these anomalous results. Sampling and laboratory procedures for WAD CN will be reviewed and closely monitored for future sampling events and the results evaluated relative to the 2014 and prior data.

Concentration versus time graphs for total cyanide are presented in **Appendix D-1**. Although the available WAD cyanide data do not yet lend themselves to long-term trend evaluations, concentrations reported for WAD cyanide during 2014 were typically below the ROD-specified cleanup goal of 0.2 mg/L, the exceptions being wells associated with the anomalous results discussed above (MW-5, MW-32, and MW-35).

For total cyanide concentration versus time trends (**Appendix D-1**), following increased concentrations in response to soil flushing, a trend of decreasing concentrations is apparent at all of the compliance wells, except MW-12, where concentrations typically have been below detection limits. Overall, the total cyanide concentration data indicate that soil flushing within the FSPSA, and/or the disturbance of shallow soil during installation of the soil flushing system, caused initial increases in leachate generation and groundwater concentrations, but, at most of the wells exhibiting these effects, there has been a subsequent decline.

3.2.2.2 Fluoride

Of the main plume indicators, fluoride is less prone to analytical variability than cyanide, and is potentially a more reliable/consistent indicator of changes in plume conditions. Concentration versus time graphs for fluoride for each of the compliance wells are provided in **Appendix D-3**.

Fluoride concentrations have consistently been below the cleanup goal of 4 mg/L at compliance wells MW-12, MW-28, MW-35, MW-37. Following increases in fluoride concentrations attributed to soil flushing, a general decreasing concentration trend is observed at compliance wells MW-2, MW-16, MW-18, MW-31, MW-32, MW-35, MW-36, and MW-37.

3.2.2.3 Arsenic

Concentration versus time graphs for arsenic for each of the compliance point wells are provided in **Appendix D-4**. Data for wells MW-2, MW-16, MW-18, MW-31, MW-32, MW-36, and MW-37 show a general trend of decreasing concentrations, particularly following an initial effect from soil flushing. Data for MW-35 exhibit some indication of a declining trend over approximately the last five years.

At wells MW-5, MW-12, and MW-28, concentrations of arsenic reported since 1997 have consistently been below the cleanup goal of 0.01 mg/L listed in the ROD. At MW-35, MW-36 and MW-37, concentrations reported since in recent years have been below the 0.01 mg/L cleanup goal.

As discussed earlier, the final cleanup goal for arsenic is pending. In the ROD, the cleanup goal for arsenic was set at 0.01 mg/L. However, because arsenic is a common constituent of groundwater in the Ohio River Valley for which naturally-occurring concentrations can exceed the cleanup goal presented in the ROD, the SOW specified that as part of the Remedial Design process, Ormet would conduct a statistical evaluation to determine the background level of arsenic in the alluvial aquifer. The resulting background level would then be considered for use as the cleanup goal in place of the level presented in the ROD. The results of the statistical analyses, which were presented to the USEPA, indicated a background level of 0.04 mg/L for arsenic. At 10 of the 11 compliance wells (all except MW-18), the most recent results were

below the 0.04 mg/L background level determined for arsenic, and at six of these wells also below the ROD-specified cleanup goal.

3.2.2.4 Manganese

Concentration versus time graphs for manganese are provided in **Appendix D-5**. Manganese results for MW-28 have consistently been below the ROD-specified cleanup goal of 0.23 mg/L and, in recent samples, also below the cleanup goal at MW-18, MW-36, and MW-37. At MW-2, MW-5, MW-16, MW-18, MW-31, MW-32, MW-36, and MW-37, manganese concentrations exhibited a peak that roughly coincided with soil flushing activities and have been followed by a decreasing trend.

The final cleanup goal for manganese is pending. In the ROD, the cleanup goal for manganese was set at 0.230 mg/L. Because manganese is a common constituent of groundwater in the Ohio River Valley for which naturally-occurring concentrations can be well above the cleanup goal presented in the ROD, the SOW specified that as part of the Remedial Design process, Ormet would conduct a statistical evaluation to determine the background level of manganese in the alluvial aquifer. The resulting background level would then be considered for use as the cleanup goal in place of the level presented in the ROD. The results of the statistical analyses, which were presented to the USEPA, indicated a background level of 9.78 mg/L for manganese. Except for a few isolated detections, manganese concentrations have been below the background level at all of the compliance wells during recent and historical monitoring events.

3.2.2.5 Tetrachloroethene (PCE)

Under the RA Groundwater Monitoring Plan, analyses for PCE are performed on samples from four of the compliance wells (MW-2, MW-5, MW-18, and MW-31) plus MW-30, at which PCE was detected during the RI. PCE concentration versus time graphs for the four compliance wells are provided in **Appendix D-6**. Since the Phase I RI, PCE concentrations have typically been below detection and the ROD-specified cleanup goal of 0.005 mg/L at MW-5 and, in recent samples, also at MW-18. Prior to about 2008, PCE concentrations at MW-2 and MW-31 showed an increasing trend. In more recent years, concentrations at these wells show a distinct decreasing pattern.

3.2.2.6 Sodium

Sodium is not a constituent for which a cleanup goal was specified in the ROD, but has been graphed (**Appendix D-7**) and is discussed, because it is an indicator of changes in the overall condition of the plume. At compliance wells MW-2, MW-18, MW-28, MW-31, MW-35, MW-36, and MW-37, data collected since 1997 show decreases in sodium concentrations. At MW-16, sodium concentrations increased during 2000 and have exhibited a slow decrease in subsequent years. At MW-32, sodium concentrations increased in 2004 and have been stable since. There is no clear trend of increasing or decreasing concentrations at MW-5 and MW-12, though the most recent result for MW-12 is nominally higher than prior years.

3.2.3 Contaminant Mass-in-Place

In accordance with Section II.3.C of the Consent Decree SOW, data from the 2014 annual monitoring event were used to estimate the masses of fluoride and total cyanide (primary plume indicators) in the alluvial aquifer, as a means of documenting changes in overall groundwater quality over time. The procedure used for estimating the mass-in-place was as described in the RD Work Plan and the 30% RD submittal. Results of the mass-in-place estimates for fluoride and cyanide are summarized in **Table 3**. For comparison, **Table 3** also includes fluoride and cyanide mass-in-place estimates based on previous monitoring events. The mass-in-place estimates are based on the fluoride and total cyanide isopleth maps presented as **Figures 3 and 4**, respectively. Data and supporting calculations for the 2014 mass-in-place estimates are provided in **Appendix E**. Data and supporting calculations for the previous mass-in-place estimates were submitted to the USEPA in prior annual reports.

Based on the estimates presented in **Table 3** and depicted in Figure 7, the mass of fluoride in the alluvial aquifer increased during a five-year period following the start of soil flushing (1999 to early 2004). Since early 2004, the estimated fluoride mass-in-place exhibits and overall declining trend.

Estimates of total cyanide mass-in-place are more erratic than fluoride, owing, at least in part, to the higher degree of variability associated with the analysis of cyanide. The estimates of cyanide mass-in-place show three distinct peaks, starting in 1999, then in 2006 and again in

2012. Each peak is followed by a period of declining mass-in-place, with the 2014 value being among the lower estimated values since the start of remediation at the site.

To assess the removal of cyanide and fluoride from the alluvial aquifer by pumping of groundwater at the Reduction Plant, the mass removals achieved from January through December 2014 were calculated and compared to changes in the estimated masses in the aquifer over the same period (see **Table 4**). The masses of cyanide and fluoride removed during 2014 were calculated using analytical data and flow data collected for the Ranney® well. (Note: By USEPA approval on March 26, 2012, pumping of the interceptor well system was permanently discontinued.)

Using the available data, it's estimated that 5,785 pounds of fluoride and 654 pounds of cyanide were removed from the alluvial aquifer by groundwater pumping during the period from January through December 2014. During 2014, the estimated mass of fluoride in the aquifer decreased by about 800 pounds relative to 2013, and the estimated mass of cyanide decreased by some 1,200 pounds. **Figure 7** shows estimated masses of fluoride and total cyanide in the alluvial aquifer versus time, and **Figure 8** shows fluoride and total cyanide mass removal versus time.

It is noted that due to the transition in ownership and personnel at the former Ormet facility during 2014, sampling of the water pumped by the Ranney® well was not conducted with the same frequency as in previous years. As a result, estimations of fluoride and cyanide mass removal for 2014 are subject to a greater degree of uncertainty.

3.2.4 Affected Aquifer Areas

As a further check on changes in groundwater quality during the remediation, the approximate areas of the aquifer containing fluoride and total cyanide at concentrations greater than 4.0 mg/L and 0.2 mg/L, respectively, were estimated using analytical results from the 2014 sampling event. The results are summarized in **Table 3** and depicted in **Figure 9**. The estimates of aquifer areas are based on the fluoride and total cyanide isopleth maps shown as **Figures 3 and 4**, respectively.

As shown in **Table 3** and **Figure 9** the area of the alluvial aquifer containing fluoride concentrations greater than 4.0 mg/L has been relatively consistent, ranging from 36.9 acres to

51.1 acres. Beginning in early 2005 (about six years after the start of soil flushing), the aquifer area exceeding the fluoride cleanup goal has exhibited a slow increasing trend. Although the estimated area of aquifer exceeding the cleanup goal has increased, the trend of decreasing fluoride mass-in-place (**Figure 8**) suggests a decrease in overall plume concentration.

During 2000 and 2001(the years immediately following the start of soil flushing), the area of the aquifer with concentrations of total cyanide greater than 0.2 mg/L showed a marked increase. Since 2000, there has been a continued increasing trend, from 36.5 acres in 2000 to a high of 53.8 acres in 2013. The 2014 result is somewhat lower, at 48.7 acres.

Soil flushing in the FSPSA is the probable cause of the progressive increases for both fluoride and total cyanide. The slower response exhibited by fluoride suggests a somewhat lower solubility associated with residual fluoride source material within the FSPSA soil.

4.0 SUMMARY/CONCLUSIONS

- Pumping of groundwater at the facility Ranney® well continues to provide containment of the plume beneath the property and removes contaminant mass from the alluvial aquifer. Along the river/plant boundary, the flow of groundwater continues to be from the river to the aquifer, with the possible exception of a small area in the easternmost portion of the site. This is believed to be the result of a prolonged period of pumping of the Ranney® well at the minimum rate of 1 million gallons per day specified by USEPA. To further investigate this interpretation, the pumping rate of the Ranney® well will be adjusted upward prior to 2015 annual groundwater sampling event. Groundwater elevation measurements and contours from the 2015 event will be compared to the 2014 results. If needed, further adjustment in pumping rate may be made.

- Concentrations of all key groundwater-quality parameters show steady or decreasing concentration trends at all compliance monitoring wells.

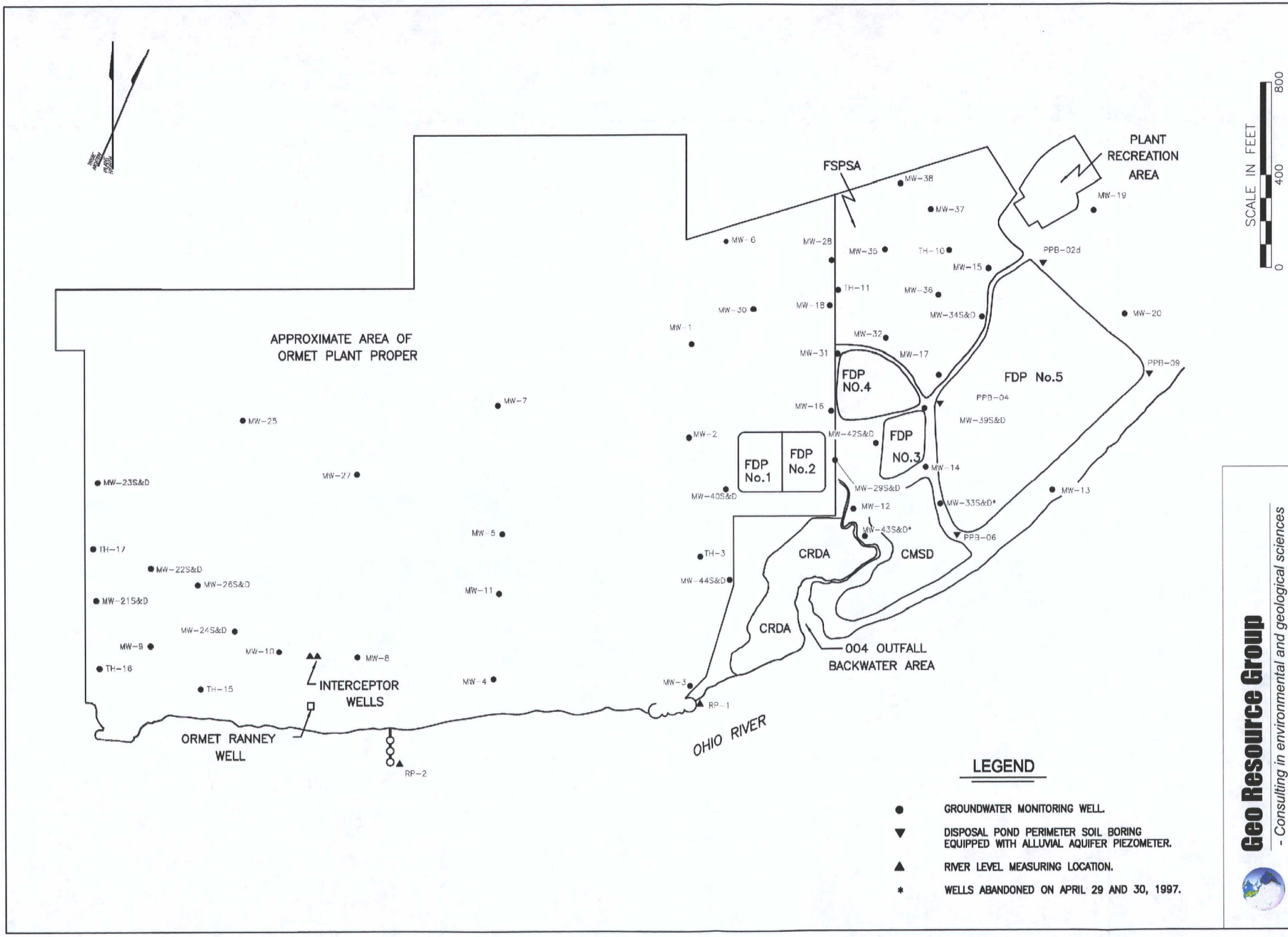
- Pumping of groundwater removed approximately 5,785 pounds of fluoride and approximately 654 pounds of cyanide from the alluvial aquifer during the period from January through December 2014. However, due to an interruption of Ranney® well sampling associated with a change in facility ownership and personnel during 2014, these are regarded to be rough estimates relative to prior years.

- Between 2013 and 2014, the estimated area of the alluvial aquifer with fluoride concentrations greater than 4.0 mg/L decreased by about 7.0 percent (47.5 acres versus 51.1 acres) and the estimated area of the aquifer with total cyanide concentrations greater than 0.2 mg/L decreased by about 9.5 percent (48.7 acres versus 53.8 acres).

- Reductions in contaminant mass-in-place were occurring prior to the completion of Remedial Construction and full-time operation of the FSPSA soil flushing system. These decreases are attributed to the passage of time and natural flushing by infiltrating precipitation and snow melt, and to operations and changes in waste management practices undertaken by Ormet prior to the Superfund project, including pumping of groundwater that removes contaminant mass, and discontinued use of the disposal ponds and the spent potliner storage area. Initial increases in the fluoride and cyanide

mass-in-place following the initiation of soil flushing are attributed to the flushing itself, and also the disturbance of shallow soil during the installation of the flushing system.

- By USEPA approval on March 26, 2012, operation of the groundwater treatment plant and pumping of the interceptor wells was permanently discontinued. The facility Ranney® well will continue to be pumped to maintain containment of the plume within the alluvial aquifer.


FSPSA
PLANT RECREATION AREA
APPROXIMATE AREA OF ORMET PLANT PROPER
FDP NO.4
FDP No.5
FDP NO.3
FDP No.1
FDP No.2
CRDA
CMSD
CRDA
004 OUTFALL BACKWATER AREA
INTERCEPTOR WELLS
ORMET RANNEY WELL
OHIO RIVER
RP-1
RP-2
MW-38
MW-37
MW-19
MW-6
MW-28
MW-35
TH-10
PPB-02d
MW-15
TH-11
MW-36
MW-18
MW-30
MW-34S&D
MW-20
MW-1
MW-32
MW-31
MW-17
PPB-09
PPB-04
MW-39S&D
MW-7
MW-16
MW-25
MW-2
MW-42S&D
MW-14
MW-27
MW-23S&D
MW-40S&D
MW-29S&D
MW-13
MW-12
MW-33S&D*
MW-43S&D*
PPB-06
MW-5
TH-17
TH-3
MW-22S&D
MW-26S&D
MW-44S&D
MW-11
MW-21S&D
MW-24S&D
MW-9
MW-10
MW-8
TH-16
TH-15
MW-4
MW-3
SCALE IN FEET
0
400
800
LEGEND
GROUNDWATER MONITORING WELL.
DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH ALLUVIAL AQUIFER PIEZOMETER.
RIVER LEVEL MEASURING LOCATION.
* WELLS ABANDONED ON APRIL 29 AND 30, 1997.
Geo Resource Group
- Consulting in environmental and geological sciences
PROJECT NO: GRG00401
DRAWING:
DRAFTED BY: CDS
CHECKED BY: BF
APPROVED BY: BF
REVISION NO:
FILE NO:
PLOT SIZE=1"=400'
DATE: 07/2015
DATE: 07/2015
DATE: 07/2015
FIGURE 1
SITE MAP
FORMER ORMET SUPERFUND SITE
HANNIBAL OHIO

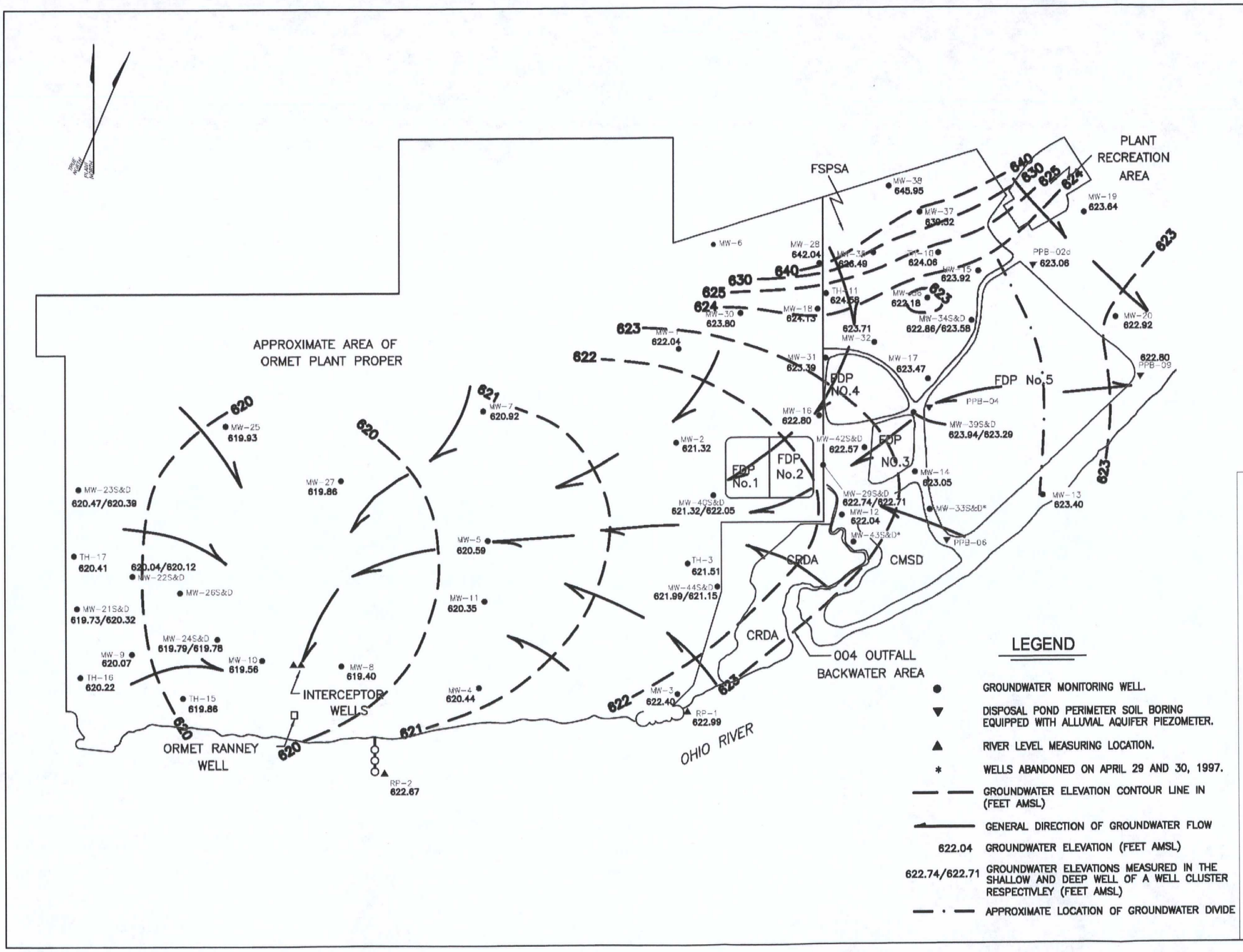


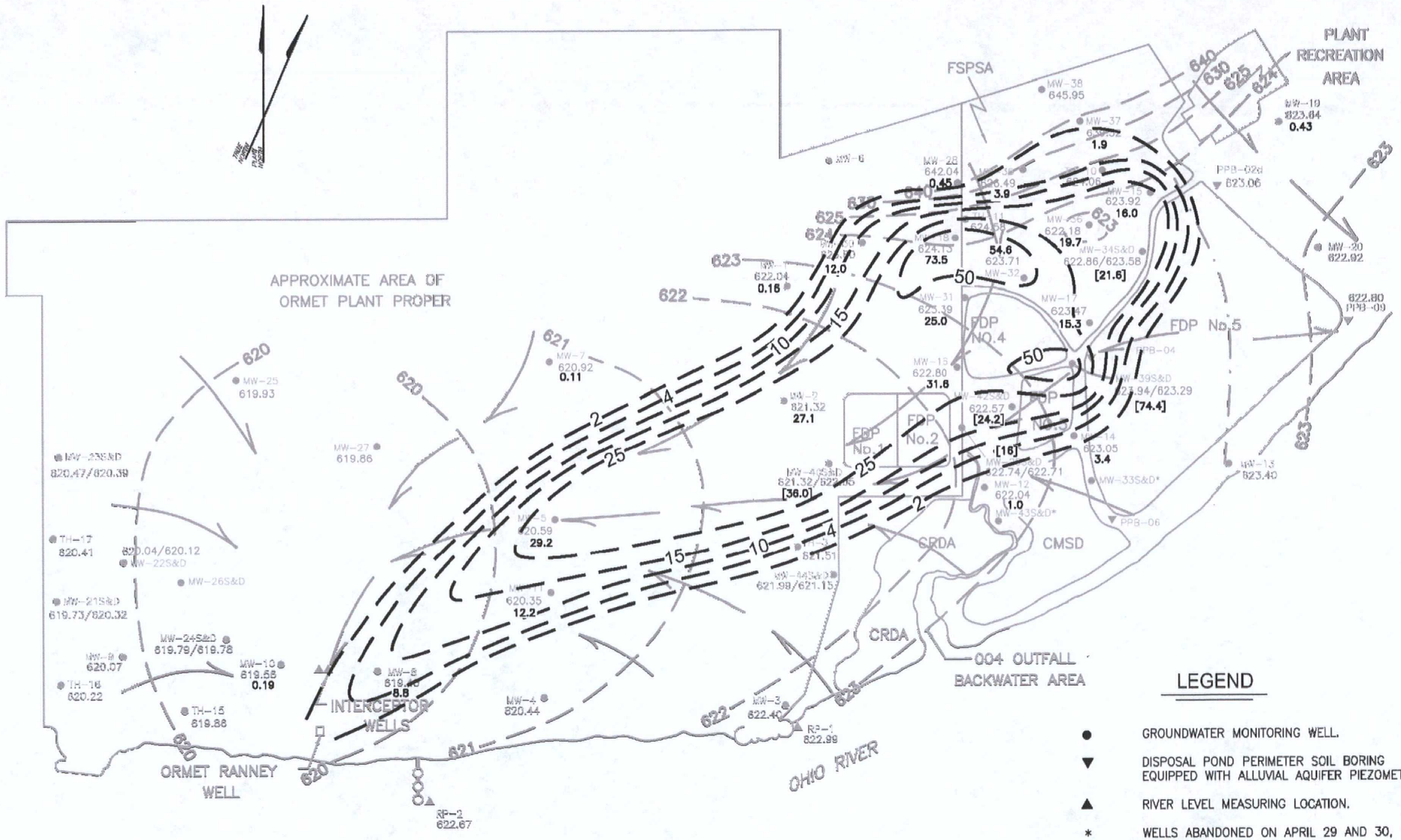
FIGURE 2

GROUNDWATER ELEVATIONS AND FLOW PATTERNS WITH THE ALLUVAL AQUIFER BASED ON AUGUST 8, 2014 WATER-LEVEL DATA

FORMER ORMET SUPERFUND SITE
HANNIBAL OHIO

Geo Resource Group
- Consulting in environmental and geological sciences

PROJECT NO: GRG00401	FILE NO:
DRAWING:	PLOT SIZE=1"-400'
DRAFTED BY: CDS	DATE: 07/2015
CHECKED BY: BF	DATE: 07/2015
APPROVED BY: BF	DATE: 07/2015
REVISION NO:	



NOTE: IN PREPARING ISOPLETH MAPS, THE FOLLOWING CONVENTIONS WERE ADOPTED:

1.) FOR WELLS AT WHICH A PRIMARY SAMPLE AND A DUPLICATE SAMPLE WERE COLLECTED, THE HIGHER OF THE TWO VALUES WAS USED.

2.) FOR WELL CLUSTERS AT WHICH BOTH THE SHALLOW AND THE DEEP WELL WERE SAMPLED, THE AVERAGE OF THE TWO VALUES WAS USED. (SHOWN IN BRACKETS)

LEGEND

●	GROUNDWATER MONITORING WELL.
▼	DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH ALLUVIAL AQUIFER PIEZOMETER.
▲	RIVER LEVEL MEASURING LOCATION.
*	WELLS ABANDONED ON APRIL 29 AND 30, 1997.
— —	GROUNDWATER ELEVATION CONTOUR LINE IN (FEET AMSL)
——▲	GENERAL DIRECTION OF GROUNDWATER FLOW
622.04	GROUNDWATER ELEVATION (FEET AMSL)
622.74/622.71	GROUNDWATER ELEVATIONS MEASURED IN THE SHALLOW AND DEEP WELL OF A WELL CLUSTER RESPECTIVLEY (FEET AMSL)
— · —	APPROXIMATE LOCATION OF GROUNDWATER DIVIDE
27.1	FLUORIDE CONCENTRATION (mg/L)
—10—	FLUORIDE CONCENTRATION ISOPLETH (mg/L)

FIGURE 3

FLUORIDE ISOPLETH MAP ALLUVAL AQUIFER

BASED ON SAMPLES COLLECTED JULY 2014

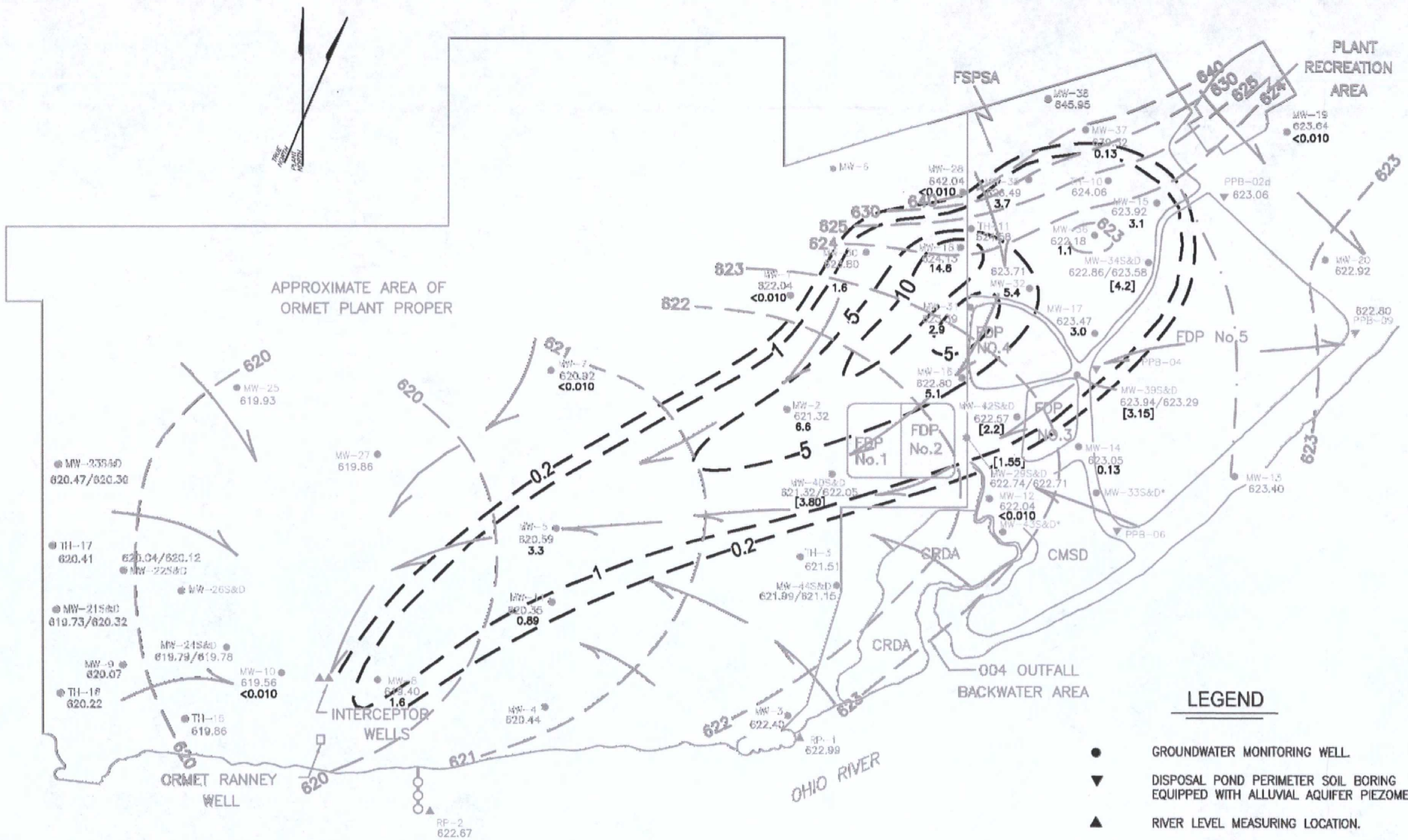
FORMER ORMET SUPERFUND SITE

HANNIBAL OHIO

Geo Resource Group

- Consulting in environmental and geological sciences

PROJECT NO: GRG00401	FILE NO:
DRAWING:	PLOT SIZE=1"=400'
DRAFTED BY: CDS	DATE: 07/2015
CHECKED BY: BF	DATE: 07/2015
APPROVED BY: BF	DATE: 07/2015
REVISION NO:	



LEGEND

- ● GROUNDWATER MONITORING WELL.
- ▼ DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH ALLUVIAL AQUIFER PIEZOMETER.
- ▲ RIVER LEVEL MEASURING LOCATION.
- * WELLS ABANDONED ON APRIL 29 AND 30, 1997.
- — — GROUNDWATER ELEVATION CONTOUR LINE IN (FEET AMSL)
- ⟵ GENERAL DIRECTION OF GROUNDWATER FLOW
- 622.04 GROUNDWATER ELEVATION (FEET AMSL)
- 622.74/622.71 GROUNDWATER ELEVATIONS MEASURED IN THE SHALLOW AND DEEP WELL OF A WELL CLUSTER RESPECTIVLEY (FEET AMSL)
- — · — APPROXIMATE LOCATION OF GROUNDWATER DIVIDE
- 6.6 TOTAL CYANIDE CONCENTRATION (mg/L)
- — 5 — TOTAL CYANIDE CONCENTRATION ISOPLETH (mg/L)

NOTE: IN PREPARING ISOPLETH MAPS, THE FOLLOWING CONVENTIONS WERE ADOPTED:

1.) FOR WELLS AT WHICH A PRIMARY SAMPLE AND A DUPLICATE SAMPLE WERE COLLECTED, THE HIGHER OF THE TWO VALUES WAS USED.

2.) FOR WELL CLUSTERS AT WHICH BOTH THE SHALLOW AND THE DEEP WELL WERE SAMPLED, THE AVERAGE OF THE TWO VALUES WAS USED. (SHOWN IN BRACKETS)

Geo Resource Group

- Consulting in environmental and geological sciences

FIGURE 4

TOTAL CYANIDE ISOPLETH MAP ALLUVAL AQUIFER

BASED ON SAMPLES COLLECTED JULY 2014

FORMER ORMET SUPERFUND SITE

HANNIBAL OHIO

PROJECT NO: GRG00401	FILE NO:
DRAWING:	PLOT SIZE=1"=400'
DRAFTED BY: CDS	DATE: 07/2015
CHECKED BY: BF	DATE: 07/2015
APPROVED BY: BF	DATE: 07/2015
REVISION NO:	

FIGURE 5

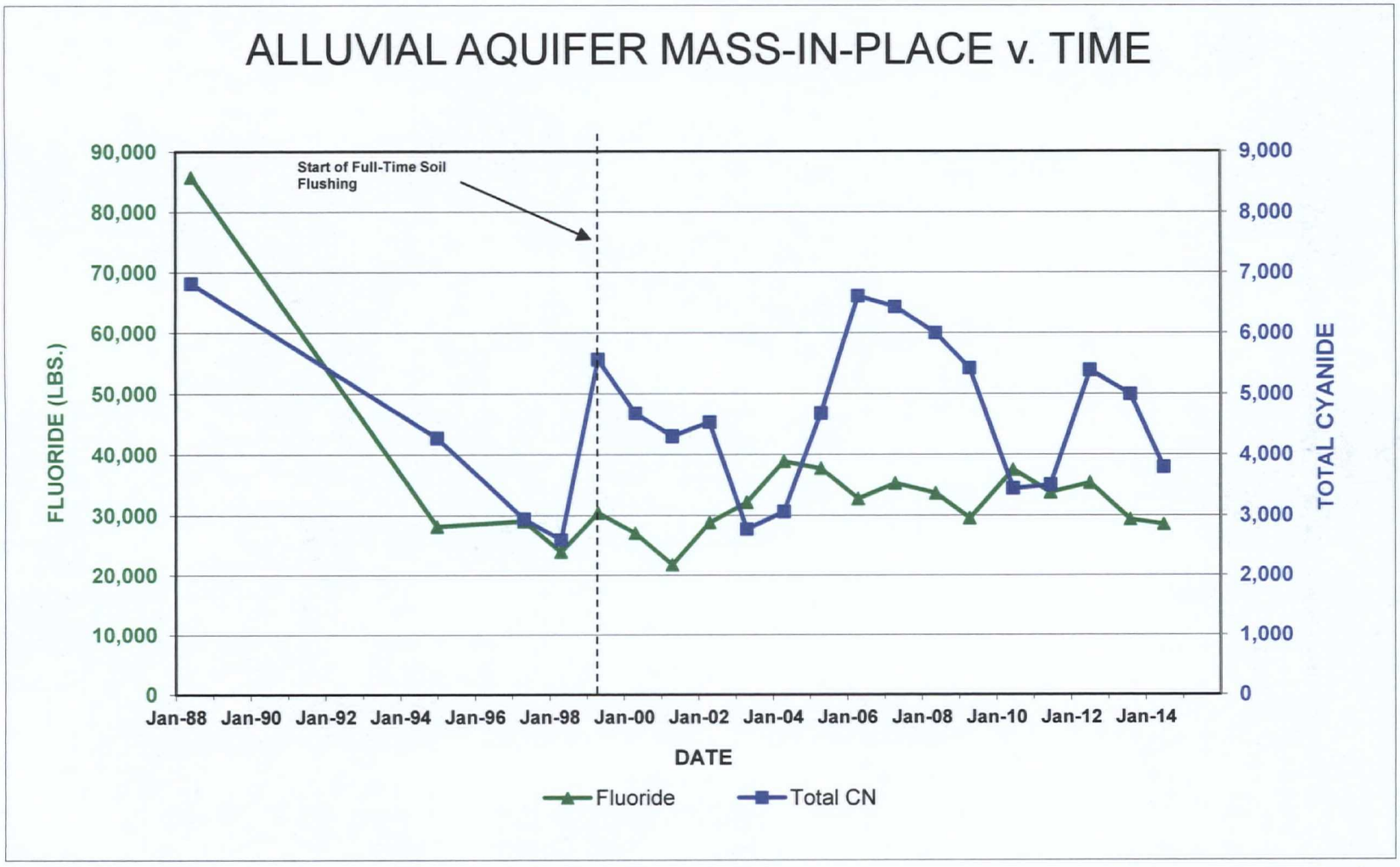

ALLUVIAL AQUIFER MASS-IN-PLACE v. TIME
Start of Full-Time Soil Flushing
FLUORIDE (LBS.)
TOTAL CYANIDE
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
DATE
Fluoride
Total CN

FIGURE 6

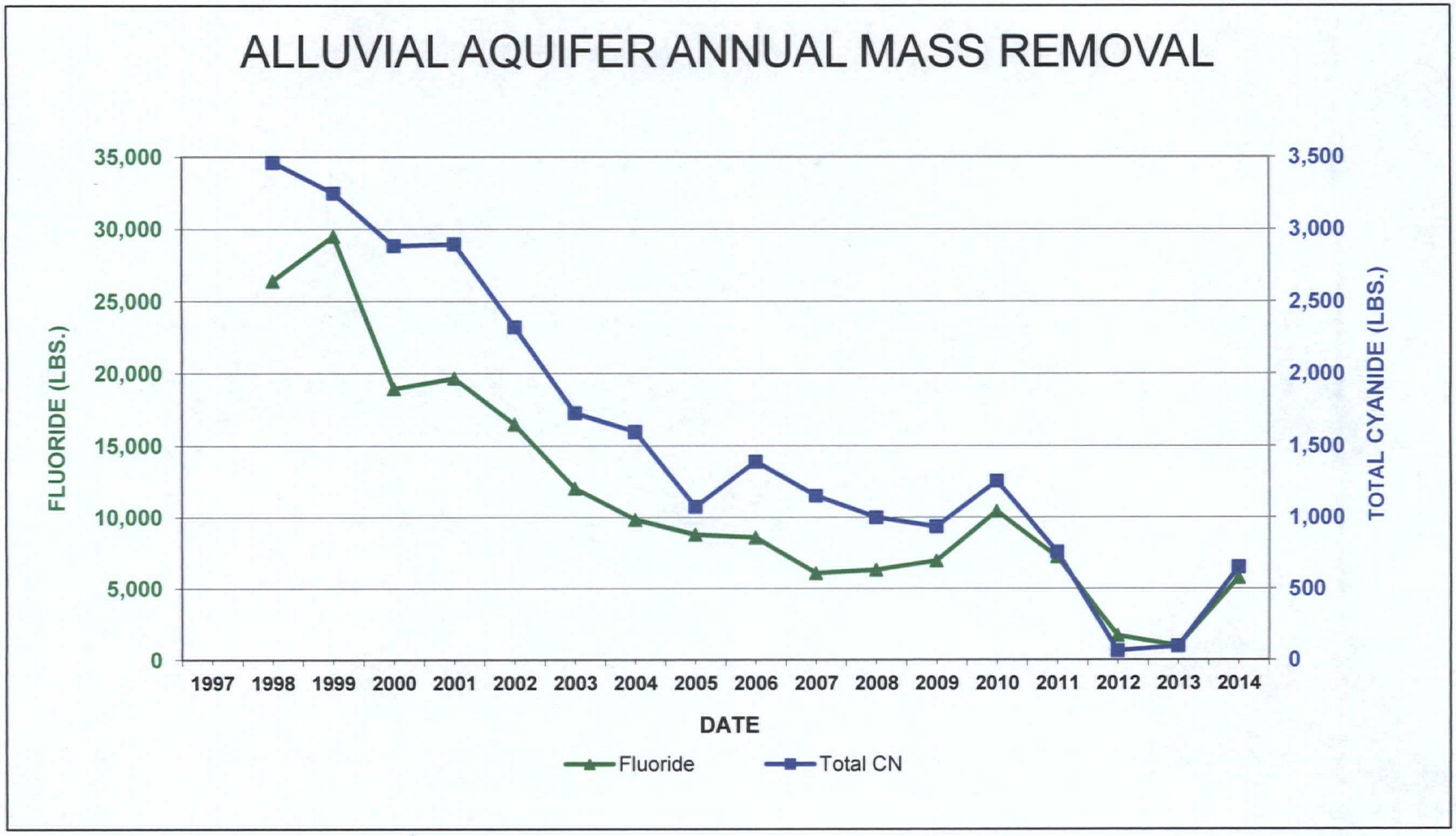

ALLUVIAL AQUIFER ANNUAL MASS REMOVAL
FLUORIDE (LBS.)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
TOTAL CYANIDE (LBS.)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DATE
Fluoride
Total CN

FIGURE 7

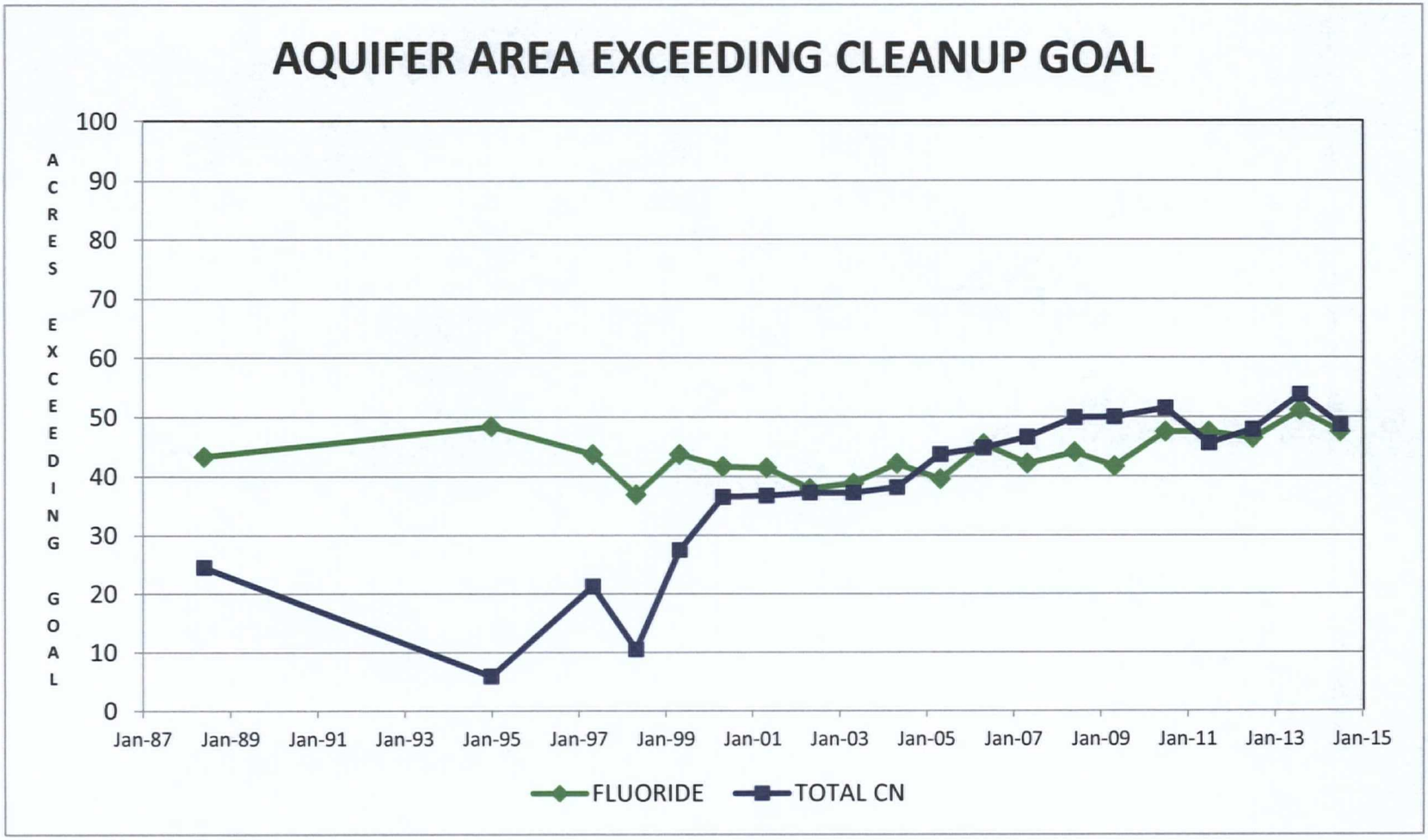

AQUIFER AREA EXCEEDING CLEANUP GOAL
ACRES EXCEEDING GOAL
100
90
80
70
60
50
40
30
20
10
0
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
FLUORIDE
TOTAL CN

TABLE 1
WATER-LEVEL ELEVATION DATA
FORMER ORMET CORPORATION SUOERFUND SITE
HANNIBAL, OHIO
DATE: 8/5/2014

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft. MSL)
MW-1	667.80	45.76	622.04
MW-2	667.52	46.20	621.32
MW-3	645.17	22.77	622.40
MW-4	661.07	40.63	620.44
MW-5	668.16	46.57	621.59
MW-7	667.94	47.02	620.92
MW-8	667.71	48.31	619.40
MW-9	666.59	46.52	620.07
MW-10	667.16	47.60	619.56
MW-11	667.31	46.96	620.35
MW-12	635.82	13.78	622.04
MW-13	661.44	38.04	623.40
MW-14	653.59	30.54	623.05
MW-15	657.31	33.39	623.92
MW-16	662.72	39.92	622.80
MW-17	655.03	31.56	623.47
MW-18	660.91	36.78	624.13
MW-19	662.03	38.39	623.64
MW-20	632.79	9.87	622.92
MW-21s	663.47	43.74	619.73
MW-21d	663.60	43.28	620.32
MW-22s	667.47	47.43	620.04
MW-22d	667.21	47.09	620.12
MW-23s	663.18	42.71	620.47
MW-23d	663.41	43.02	620.39
MW-24s	667.88	48.09	619.79
MW-24d	667.75	47.97	619.78
MW-25	667.30	47.37	619.93
MW-26s	665.54	NM	
MW-26d	665.59	NM	
MW-27	667.31	47.45	619.86
MW-28	663.27	21.23	642.04
MW-29s	653.40	30.66	622.74
MW-29d	653.07	30.36	622.71
MW-30	667.58	43.78	623.80
MW-31	661.59	38.20	623.39
MW-32	656.12	32.41	623.71
MW-34s	655.67	32.81	622.86
MW-34d	654.67	31.09	623.58
MW-35	661.90	35.41	626.49
MW-36	655.14	32.96	622.18
MW-37	661.14	21.62	639.52
MW-38	666.64	20.69	645.95
MW-39s	657.30	33.36	623.94
MW-39d	657.18	33.89	623.29
MW-40s	663.90	42.58	621.32
MW-40d	663.75	41.70	622.05

TABLE 1 (cont.)
WATER-LEVEL ELEVATION DATA
FORMER ORMET CORPORATION SUOERFUND SITE
HANNIBAL, OHIO
DATE: 8/5/2014

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft. MSL)
MW-41	637.67	NM	
MW-42s	654.37	31.80	622.57
MW-42d	654.34	31.78	622.56
MW-44s	662.01	40.02	621.99
MW-44d	661.76	40.61	621.15
PPB-02d+	662.78	39.72	623.06
PPB-04+	661.57	NM	
PPB-06+	663.04	NM	
PPB-09+	664.30	41.50	622.80
TH-3	667.81	46.30	621.51
TH-10	658.17	34.11	624.06
TH-11	659.08	34.50	624.58
TH-15	663.62	43.76	619.86
TH-16	664.62	44.40	620.22
TH-17	663.93	43.52	620.41
RP-1	643.17	20.18	622.99
RP-2	643.05	20.38	622.67

NOTE:
All MW-series and PPB-series wells are measured from th
All TH-series wells are measured from the top of steel casing.
River-pool measuring point RP-1 is at the upriver barge-docking area and RP-2 is at the downriver barge-docking area.

PPB+ - Designates an alluvial aquifer piezometer.
NM = Not measured.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Page 1 of 38

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-1																
12/83	6.4	6.0	270	210	0.018	0.014			0.1			0.04	0.65	14.2		
2/84	6.1	6.1	270	215	0.04				0.1			0.01	0.54	14.9		
9/84	6.1	5.7	195	210	<0.01	<0.01			<0.2			0.02	0.33	13.8		
5/85	6.4	6.0	200	210	0.13	0.13			<0.2			0.04	0.15	16.2		
6/88	6.2	6.4	670	540	<0.01		<0.01		0.2	0.0024	<0.0015	6.21	0.379	20.3	0.006	
1/95	6.2	4.7	370	550	0.02		<0.01		0.1	<0.004	<0.01	<0.04	0.39	21	<0.01	
5/97	5.9	6.32	470	365	<0.01				0.1	<0.004	<0.0005		0.13	19	<0.01	
5/98	6.01	5.65	480	505	<0.01				0.20	<0.004	<0.0005		0.10	20	<0.01	
5/01	5.95	6.35	450	392	<0.01				0.13	<0.004	<0.0005		0.098	19	<0.01	
5/02	6.62	6.76	470	343	<0.01				0.67	<0.004	<0.0005		0.0298	24.6	<0.01	
5/03	6.32	6.39	570	416	<0.01				0.25	<0.004	<0.0005		0.048	24	<0.01	
5/04	6.66	6.46	690	701	<0.01				2.1	<0.004	<0.0005		0.47	50	<0.01	
5/05	6.66	6.46	660	591	<0.01				1.8 J	<0.004	<0.0005		0.40	47	<0.01	
5/06	6.87	6.75	800	650	<0.01				<2.0B	<0.004	<0.0005		0.43	46	<0.01	
5/07	6.61	6.52	660	516	<0.01				1.1	<0.004	<0.0005		0.66	49	<0.01	
6/08	6.29		590	360	<0.01				0.5	<0.004	<0.0005		0.43	40	<0.01	
5/09	6.0	6.16	562	551	0.09		0.087		0.26	<0.0050	<0.0010		0.47	51.2	<0.0050	
7/10	5.94	6.42	603	508	<0.0050		<0.0050		0.116	<0.0005	<0.0005		0.759	38.6	<0.0050	
7/11	5.90	6.60	557	298	0.00595		<0.0050	<0.0050	0.136	<0.0005	<0.0010		0.709	36.7	<0.0050	
7/12	6.10	6.58	651	535	0.0072		<0.0050	<0.0050	0.160	<0.0050	<0.0010		0.961	31.7	<0.0050	
8/13	7.10	5.21	567	471	< 0.0050			< 0.0050	0.160	<0.005			1.1	33.4		
7/14	6.00		619		< 0.010			< 0.005	0.160	< 0.005			2.01	41.1		
7/14 (Dup.)	6.00		622		< 0.010			0.027	0.130	< 0.005			1.96	40.3		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
FORMER ORMET CORPORATION SUPERFUND SITE
ORMET CORPORATION
HANNIBAL, OHIO

Page 2 of 38

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-2																
12/83	10.3	10.3	6,000	6,000	56.0	0.27			400			55.2	1.98	1,950		
2/84	10.3	10.3	7,752	2,750	48.0				420			58	2.46	2,290		
9/84	10.5	9.9	6,308	6,900	40.8	0.095			480			59.3	2.1	2,460		
5/85	10.4	10.4	13,200	5,800	95	0.10			400			54.0	1.74	2150		
10/85	10.5		7,100		140	12			390		<0.01	54.0	1.82	2,060		
7/88	10.4	10.4	6,200	6,000	22		12		330	0.394	<0.0015	34.2	1.00	1,450	0.251	0.011
2/90	10.34	10.2	4,800	3,900	36.2		29.6		200			31.0		1,200		
1/95	10.0	9.6	2,400	>2,000	7.1		<0.01		93	0.085	<0.01	8.6	0.82	520	0.09	
5/97	10.1	10.07	2,100	1,885	17		<1.0		63	0.092	0.001		1	470	0.08	0.008
5/98	9.98	10.24	1,900	1,880	13		<0.01		68	0.082	0.001		0.93	450	0.06	0.0053
9/98	9.98	9.98	1,900	1,991	21		0.30		69	0.086	0.00089		0.90	440	0.051	<0.005
1/99	9.98	10.27	2,000	2,000	21		5.3		65	0.085	0.00064		1.1	440	0.054	<0.005
1/99 (Dup.)	9.98	10.27	1,900	2,000	22		<0.1		66	0.087	0.00064		1.0	440	0.053	<0.005
5/99	10.1	9.94	1,900	1,940	25		3.5		67	0.095	0.00068		0.96	400	0.046	<0.005
9/99	9.88	10.60	1,600	1,830	22		2.6		59	0.077	<0.0005		0.85	430	0.032	<0.005
9/99 (Dup.)	9.88	10.60	1,900	1,830	22		2.5		60	0.079	<0.0005		0.95	460	0.039	<0.005
1/00	9.88	9.65	2,000	1,825	23		2.4		66	0.086	0.0006		0.99	360	0.041	<0.005
5/00	9.92	9.84	2,000	1,863	18		<0.5		66	0.0809	0.00075	13	1.0	430	0.045	<0.005
5/00 (Dup.)	9.97	9.84	1,900	1,863	18		11		67	0.081	0.00076	13	1.1	410	0.045	<0.005
10/00	9.92	9.95	1,800	1,518	17		0.73		61	0.077	0.00051		1.0	270	0.039	<0.005
1/01	9.91	11.34	1,900	1,708	18		3.4		68	0.082	0.00073		1.1	450	0.045	<0.005
5/01	9.88	10.66	1,900	1,621	15		13		67	0.087	0.00078		0.96	360	0.048	<0.005
5/01 (Dup.)	9.87	10.66	1,800	1,621	15		15		68	0.076	0.00071		0.89	360	0.045	<0.005
9/01	9.80	10.14	1,800	1,635	17		2.5		63	0.089	0.00088		1.1	400	0.056	<0.005
1/02	9.90	10.10	2,000	1,767	16		2.7		58	0.0858	0.000866		0.998	354	0.0531	<0.005
5/02	9.91	9.99	1,700	1,458	15		2.1		63	0.103	0.000873		0.845	347	0.0489	<0.005
5/02 (Dup.)	9.90	9.99	1,800	1,458	15		<0.50		66	0.107	0.000960		0.870	368	0.0531	<0.005
9/02	9.73	10.04	1,740	1,637	14.8		1.5		55.4	0.0989	0.000717		0.845	298	0.0474	0.00684
1/03	9.99	9.97	1,680	1,748	14.6		1.05		56.8	0.123	0.001140		0.978	324	0.0575	0.00644
5/03	9.80	10.08	1,700	1,246	14.0		5.1		74	0.088	<0.0005		0.94	310	0.057	0.009
5/03 (Dup.)	9.76	10.08	1,700	1,246	14.0		0.76		82	0.089	0.000850		0.95	310	0.058	0.0075
9/03	9.77	9.90	1,700	1,428	16		0.93		76	0.089	<0.0005		0.73	330	0.048	0.012
1/04	9.67	9.97	1,600	1,354	14		3.4		50	0.080	<0.0005		0.89	310	0.053	0.014
5/04	9.72	9.82	1,500	1,148	14		1.2		47	0.071	0.00088		0.91	490	0.056	0.017
5/04 (Dup.)	9.72	9.82	1,500	1,148	12		1.4		59	0.067	0.0006		0.85	490	0.053	0.018
9/04	9.55	9.79	1,600	1,099	13		4.6		54	0.069	0.00081		0.88	350	0.049	0.02
1/05	9.74	9.74	1,500	1,340	10		4.0		73	0.068	0.0011		1.1	330	0.053	0.023
5/05	6.66	9.64	1,500	1,387	14		7.1		44 J	0.066	0.00081		0.96	360	0.05	0.024
5/05 (Dup.)	9.61	9.64	1,500	1,387	15		2.1		35 J	0.066	0.00093		0.98	370	0.051	0.024
10/05	9.57	9.63	1,500	1,414	16		<0.01		43	0.067	0.00061		0.95	370	0.046	0.026
1/06	9.63	7.62	1,000	1,401	12		0.43		56J	0.064	0.00099		1.1	350	0.052	0.024
5/06	9.70	9.80	1,700	1,390	6.5		<0.01		46J	0.066	0.00064		1.0	370	0.05	0.024

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-2 (cont.)																
5/06 (Dup.)	9.69	9.80	1,700	1,390	11		<0.01		52J	0.064	0.00083		1.0	380	0.049	0.024
9/06	9.75	9.81	1,700	1,356	19		5.70		48	0.061	<0.00050		0.63	350	0.032	0.021
2/07	9.54		1,600		15	0.046	2.50		32	0.046	<.0005		0.49	330	0.028	0.037
5/07	9.50	9.55	1,300	1,183	11		<0.01		47	0.050	0.00050		0.56	330	0.032	0.036
9/07	9.49	9.89	1,400	1,103	12		0.56		45	0.049	<0.00050		0.59	310	0.034	0.054
3/08	9.52	9.33	1,400	842	9		<0.01		42	0.046	<0.0005		0.52	310	0.03	0.041
6/08	9.48		1,400	910	12(J)		0.75		37	0.046	0.00063		0.52	280	0.032	0.062
6/08 (Dup.)	9.49		1,400	910	12		0.93		41	0.045	0.00060		0.52	290	0.031	0.065
9/08	9.43	9.58	1,200	1,318	7		<0.01		36	0.044	<0.0005		0.51	290	0.027	0.042
1/09	9.30	9.55	1,270	1,283	9.5		9.50		33.5	0.043	<0.0010		0.39	174	0.022	0.048
5/09	9.20	9.58	1,180	1,212	8.8		<0.0050		33.6	0.038	<0.0010		0.53	359	0.027	0.056
9/09	9.40	9.79	1,310	1,243	11.1		0.40		43.7	0.045	<0.0010		0.59	332	0.026	0.037
1/10	9.50	9.64	1,680	1,088	7.2		<0.0050		35.9	0.033	<0.0010		0.36	277	0.018	0.042
7/10	9.40	9.74	1,230	1,142	6.43		6.43		36.3	0.177	<0.0005		0.370	192	0.02	0.034
11/10	9.13	9.65	1,150	735	7.31		4.25	0.0794	25.5	0.028	<0.0005		0.288	175	0.0122	0.037
4/11	9.44	9.79	1,130	739	2.99		1.33	0.0842	32.5	0.036	<0.001		0.507	253	0.0243	0.0452
7/11	9.34	9.77	1,240	555	6.40		6.40	0.0618	44.3	0.032	<0.001		0.512	220	0.0177	0.0346
11/11	9.39	9.40	1,300	1,280	5.46		1.86	0.0888	38.7	0.036	<0.001		0.391	257	0.0234	0.0318
4/12	9.20	9.46	1,260	1,250	8.80		0.67	0.0840	31.5	0.039	<0.001		0.349	277	0.017	0.0371
7/12	9.20	9.79	1,400	1,200	7.50		1.10	0.0920	32.8	0.030	<0.001		0.499	262	0.0198	0.031
11/12	9.10	[10.82]	1,560	1,160	4.60		0.46	0.0590	30.0	0.030	<0.001		0.517	245	0.017	0.0381
11/12 (Dup.)	9.10		1,530		6.30		<0.0050	0.0130	24.7	0.027	<0.001		0.492	243	0.0166	0.0385
8/13	9.00		1,180		7.40			0.12	27.0	0.0285			0.359	241		0.0365
8/13 (Dup.)	9.00	8.67	1,180	994	5.30			0.098	27.8	0.0291			0.345	237		0.0357
7/14	9.20		1,200		6.60			0.070	27.1	0.0339			0.619	244		0.0141

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-5																
12/83	9.7	9.5	3,058	2,825	18.8	0.064			130			17.5	1.61	880		
2/84	9.6	9.6	3,636	2,700	14.5				120			18.0	1.39	1,030		
9/84	9.8	9.3	2,278	3,100	4.94	0.032			140			19.4	1.7	850		
5/85	9.8	9.9	4,800	2,400	25.0	0.037			91			15.8	1.01	710		
10/85	9.8		2,550		22.0	2.0			70		<0.01	13.0	0.93	650		
7/88	9.5	9.6	2,000	2,050	5.5		0.10		90	0.076	<0.0015	7.05	0.514	449	0.025	0.012
1/95	8.6	8.5	1,500	1,250	3.1		<0.01		32	0.008	<0.01	1.3	0.27	270	<0.01	
5/97	9.0	9.2	1,500	1,318	3.5		<0.25		16	0.015	<0.0005		0.4	310	<0.01	<0.005
5/98	8.83	8.84	1,400	1;340	2.1		<0.01		18	0.007	<0.0005		0.17	300	<0:01	<0.005
5/98 (Dup.)	8.83	8.84	1,400	1,340	1.3		<0.01		18	0.007	<0.0005		0.18	300	<0.01	<0.005
9/98	8.92	8.88	1,200	1,219	2.0		0.02		18	0.0089	<0.0005		0.16	240	<0.01	<0.005
1/99	8.95	8.93	1,100	1,175	1.8		0.14		17	0.0086	<0.0005		0.16	240	<0:01	<0.005
5/99	8.97	8.80	1,200	1,280	1.9		<0.01		16	0.0094	<0.0005		0.27	250	<0.01	<0.005
5/99 (Dup.)	8.97	8.80	1,200	1,280	2.2		2.2		16	0.0097	<0.0005		0.25	240	<0.01	<0.005
9/99	8.78	9.10	1,100	1,030	2.4		0.10		17	0.0074	<0.0005		0.23	230	<0.01	<0.005
1/00	8.76	8.30	1,200	1,040	2.0		2.0		15	0.0083	<0.0005		0.24	180	<0.01	<0.005
1/00 (Dup.)	8.77	8.30	1,100	1,040	1.9		1.9		16	0.006	<0.005		0.23	180	<0.01	<0.005
5/00	8.81	8.59	1,100	1,020	2.3		2.3		16	0.0082	<0.0005	1.8	0.37	110	<0.01	<0.005
10/00	8.71	8.59	1,000	817	2.6		2.6		11	0.006	<0.0005		0.35	120	<0.01	<0.005
10/00 (Dup.)	8.71	9	1,000	817	2.5		2.5		11	0.0081	<0.0005		0.35	110	<0.01	<0.005
1/01	8.65	9.27	1,000	863	2.7		0.13		13	<0.004	<0.0005		0.72	190	<0.01	<0.005
1/01 (Dup.)	8.65	9.27	1,000	863	2.8		0.33		14	<0.004	<0.0005		0.58	210	<0.01	<0.005
5/01	8.51	8.99	960	791	2.9		2.9		13	<0.004	<0.0005		0.66	170	<0.01	<0.005
9/01	8.42	8.69	708	970	3.6		0.34		11	<0.004	<0.0005		0.80	160	<0.01	<0.005
9/01 (Dup.)	8.46	8.69	708	950	3.6		0.22		13	<0:004	<0.0005		0.80	170	<0:01	<0.005
1/02	8.53	8.75	908	793	3.1		3.1		13	0.00445	<0.0005		0.59	162	<0.01	<0.005
5/02	7.80	8.51	930	600	2.9		<0.20		14	<0:004	<0.0005		0.67	171	<0.01	<0.005
10/02	8.28	8.59	1,090	1,013	4.13		0.66		15.3	<0:004	<0.0005		0.708	165	<0.01	<0.005
1/03	7.61	7.39	1,190	1,208	1.83		0.17		18.4	<0.004	<0.0005		0.303	246	<0.01	<0.005
5/03	8.35	8.55	1,100	797	3.8		0.093		25	<0.004	<0.0005		0.66	160	<0.01	<0.005
9/03	7.76	7.53	1,300	1,045	4.8		0.15		33	0.0073	<0.0005		0.61	210	<0.01	0.008
9/03 (Dup.)	7.74	7.53	1,300	1,045	4.8		0.34		37	0.0065	<0.0005		0.60	210	<0.01	0.0055
1/04	7.94	8.00	1,200	854	3.9		3.80		23	<0.004	<0.0005		0.41	190	<0.01	
5/04	8.00	8.03	1,200	907	3.6		0.59		25	<0.004	<0.0005		0.42	310	<0.01	<0.005
9/04	7.88	7.94	1,300	838	3.7		0.34		19	0.0046	<0.0005		0.52	210	<0.01	<0.005
1/05	8.19	8.13	1,200	1,093	3.6		0.67		16	0.0046	<0.0005		0.82	220	<0.01	<0.005
5/05	7.87	7.79	1,200	1,070	4.7		0.55		20 J	<0.004	<0.0005		0.57	250	<0.01	<0.005
10/05	7.83	7.79	1,400	1,211	6.4		0.51		17	<0.004	<0.0005		0.61	250	<0.01	<0.005
1/06	8.10	7.28	1,400	1,208	1.3		<0.01		17J	0.0048	<0.0005		0.80	250	<0.01	<0.005
5/06	8.05	8.04	1,400	1,150	5.2		0.38		16J	<0:004	<0.0005		0.70	250	<0.01	<0.005
9/06	7.97	7.98	1,400	1,075	5.4		1.60		17	<0.004	<0.0005		0.44	240	,0.010	<0.005
2/07	8.27		1,400		6.2		0.90		21	<.004	<.0005		0.36	230	<.01	<0.005
5/07	8.00	7.92	1,200	857	5.9		<0.010		23	<0.004	<0.0005		0.40	230	<0.010	<0.005
5/07 (Dup.)	7.87	7.92	1,200	857	6.2		<0.01		23	<0.004	<0.0005		0.38	230	<0.01	<0.005
9/07	8.03	8.50	1,300	856	5.8		0.15		26	0.0046	<0.0005		0.45	240	<0.010	<0.0050
3/08	8.06	7.90	1,300	618	4.5		4.50		27	<0.0040	<0.0005		0.39	250	<0.010	<0.005
6/08	8.06		1,300	730	4.9(J)		0.40		27	0.0054	<0.0005		0.48	230	<0.01	<0.005
9/08	8.11	8.17	1,100	1,178	4.7		0.74		24	<0.004	<0.0005		0.44	240	<0.01	<0.005
1/09	7.90	8.13	1,230	1,210	4.3		4.30		30.2	<0.0050	<0.0010		0.40	153	<0.0050	<0.0050
5/09	7.90	8.22	1,170	1,220	6.0		<0.0050		26.2	<0.0050	<0.0010		0.52	332	<0.0050	<0.0050
9/09	8.00	8.26	1,340	1,153	4.6		0.51		23.7	0.0076	<0.0010		0.46	307	<0.0050	<0.0050

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-5 (cont.)																
1/10	8.20	8.43	1,270	1,134	3.5		<0.0050		25.4	<0.0050	<0.0010		0.44	309	<0.0050	<0.0050
7/10	7.89	8.36	1,130	834	1.38		1.38		18.2	0.00281	<0.0005		0.368	218	<0.0050	0.00135
11/10	7.71	8.24	1,200	701	2.86		2.86	0.0412	23.7	0.00257	<0.0005		0.264	240	<0.0050	0.00179
4/11	8.22	8.61	1,140	633	3.60		1.78	0.0893	31.2	0.00328	<0.001		0.505	267	<0.0050	0.00198
7/11	8.00	8.66	1,240	499	3.38		3.37	0.0605	34.2	0.00371	<0.001		0.476	268	<0.0050	0.00160
11/11	7.93	8.2	1,230	1,230	3.58		1.91	0.0469	26.8	0.00299	<0.001		0.382	267	0.00785	0.00105
4/12	7.90	8.13	1,270	1,230	4.90		0.19	0.0910	27.5	<0.0050	<0.001		0.41	281	<0.0050	<0.0050
7/12	8.10	9.47	1,430	1,250	4.80		1.4	0.1100	27.4	0.0081	<0.0010		0.41	266	<0.0050	<0.0050
11/12	8.00	9.34	1,660	1,220	5.10		2.8	0.0340	29.8	0.0064	<0.0010		0.38	255	<0.0050	<0.0050
8/13	8.40	7.57	1,210	1,021	3.8			0.25	28.6	< 0.005			0.290	247		< 0.005
7/14	7.80		1,150		3.3			0.85	29.2	< 0.005			0.246	237		0.007
7/14(Dup.)	7.90		1,150		3.0			0.66	29.2	< 0.005			0.237	241		0.0069

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-7																
12/83	6.8	6.2	613	700	0.019	0.020			0.1			1.01	7.88	49.0		
2/84	5.9	5.9	581	750	<0.01				0.1			9.0	4.72	49.2		
9/84	5.8	5.7	410	680	<0.01	<0.01			<0.2			11.6	4.65	58.0		
5/85	6.1	5.6	720	890	0.023	0.021			<0.2			24.7	3.70	61.0		
6/88	5.7	5.8	740	780	0.02		0.01		0.2	0.012	<0.0015	17.6	3.05	64.2	0.0032	
1/95	5.5	5.3	850	1,500	<0.01		<0.01		0.2	0.040	<0.01	22	2.3	72	<0.01	
5/97	5.8	6.04	790	670	<0.01				0.10	0.038	<0.0005		2.2	89	<0.01	
5/97 (Dup.)	5.7		800	670	<0.01				0.20	0.038	<0.0005		2.2	84	<0.01	
5/98	5.71	5.69	770	900	<0.01				0.20	0.051	<0.0005		2.2	78	<0.01	
5/99	5.81	6.00	780	700	<0.01				0.16	0.042	<0.0005		2.0	78	<0.01	
5/00	5.74	5.98	810	777	<0.01				0.14	0.041	<0.0005	18	2.0	93	<0.01	
5/01	5.69	5.27	770	771	<0.01				0.13	0.033	<0.0005		2.0	75	<0.01	
5/02	5.73	5.79	750	515	<0.01				0.16	0.0343	<0.0005		2.01	75.9	<0.01	
5/03	5.70	5.85	810	627	0.098		0.09		<0.10	0.0250	<0.0005		2.3	64	<0.01	
5/04	6.12	5.81	840	631	<0.01				2.7	0.0410	<0.0005		2.3	120	<0.01	
5/05	5.87	5.84	770	718	<0.01				1.6 J	0.0510	<0.0005		2.4	86	<0.01	
5/06	5.99	5.86	790	672	0.019		0.019		<2.0B	0.0440	<0.0005		2.1	79	<0.01	
5/07	6.04	5.68	660	509	<0.010				0.11	0.0380	<0.0005		2.4	69	<0.010	
6/08	6.1	6.8	640	403	0.011		<0.01		0.17	0.0310	<0.0005		2.3	63	<0.01	
5/09	5.70	6.01	728	614	<0.0050		<0.0050		0.10	0.0300	<0.0010		2.2	82.4	<0.0050	
7/10	5.96	6.39	586	489	0.00693		0.00693		0.10	0.0259	<0.0005		2.28	63.1	<0.0050	
7/11	5.79	6.60	575	317	<0.0050		<0.0050	<0.0050	0.0961	0.0262	<0.0010		2.3	59.6	<0.0050	
7/12	6.10	7.04	652	597	0.006		<0.0050	0.01400	0.18	0.0200	<0.0010					
8/13	6.80	6.68	570	598	< 0.0050			< 0.0050	0.17	0.0215			2.4	56.4		
7/14	6.30		532		< 0.010			< 0.0050	0.11	0.0211			2.6	58.7		

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GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-8																
12/83	9.5	9.2	820	700	0.32	0.017			18			0.20	0.01	202		
2/84	9.5	9.5	820	700	0.14				18			0.23	0.04	199		
9/84	9.5	9.0	661	800	0.35	0.013			22			1.00	0.04	216		
5/85	9.2	9.2	830	550	0.11	0.024			7.9			0.21	0.01	151		
5/86	8.8		550		0.04							<0.01	<0.01	111		
6/88	8.4	8.3	560	550	0.06		<0.01		2.8	0.0018	<0.0015	0.044	0.023	67.8	<0.0026	<0.005
1/95	7.8	7.8	610	930	0.09		<0.01		3.1	<0.004	<0.01	<0.04	0.08	50	<0.01	
5/97	7.8	8.02	560	442	0.040		<0.01		2.2	<0.004	<0.0005		0.12	44	<0.01	
5/98	7.81	7.60	490	514	0.02		<0.01		2.3	<0.004	<0.0005		0.14	30	<0.01	
5/99	8.00	8.10	530	455	0.028		0.028		2.4	<0.004	<0.0005		0.15	34	<0.01	
5/00	7.91	8.01	600	533	0.026		0.026		2.2	<0.004	<0.0005	0.054	0.24	36	<0.01	
5/01	8.24	7.48	560	482	0.024		0.024		1.9	<0.004	<0.0005		0.26	34	<0.01	
5/02	7.81	7.76	530	374	0.019		<0.01		1.9	<0.004	<0.0005		0.268	33.9	<0.01	
5/03	7.74	7.90	560	440	0.023		<0.01		2.4	<0.004	<0.0005		0.36	42	<0.01	
5/04	7.79	7.80	670	487	0.068		<0.01		3.2	<0.004	<0.0005		0.46	77	<0.01	
5/05	7.40	7.28	680	607	0.034		<0.01		2.5 J	<0.004	<0.0005		0.16	61	<0.01	
5/06	7.80	7.71	1000	856	0.094		<0.01		<2.0B	<0.004	<0.0005		0.57	140	<0.01	
5/07	7.56	7.51	890	622	0.59		<0.01		3.1	<0.004	<0.0005		0.19	120	<0.01	
6/08	7.53		1000	546	0.73		0.64		6.1	<0.004	<0.0005		0.19	140	<0.01	
5/09	7.40	7.67	1100	1035	0.83		<0.0050		7.0	<0.0050	<0.0010		0.16	198	<0.0050	
7/10	7.42	7.87	918	668	0.173		0.173		5.77	0.000762	<0.0005		0.151	143	<0.0050	
7/11	7.35	7.82	1030	469	0.21		0.207	0.0246	6.22	0.000715	<0.0010		0.129	160	<0.0050	
7/12	7.60	8.60	1040	902	0.64		<0.0050	0.068	6.5	<0.0050	<0.0010		0.0498	135	<0.0050	
7/12 (Dup.)	7.40		918		0.72		<0.0050	0.055	6.9	<0.0050	<0.0010		0.0461	130	<0.0050	
8/13	8.20	6.91	983	876	1.2			0.13	8.7	< 0.005			0.0928	156		
7/14	7.60		1000		1.6			0.86	8.8	< 0.005			0.0837	182		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-10																
12/83	7.7	7.6	1,205	1,280	1.36	0.083			6.9			0.60	0.26	195		
2/84	7.6	7.5	820	800	0.79				5.5			0.30	0.26	108		
9/84	7.6	6.5	547	675	0.22	0.14			4.3			0.13	0.34	88		
5/85	7.7	7.0	800	710	0.33	0.060			2.9			0.07	0.05	53		
6/88	7.3	7.2	770	750	<0.01		<0.01		2.1	0.0038	<0.0015	0.081	<0.001	28.7	<0.0026	
1/95	7.0	6.8	800	560	0.02		0.02		0.5	<0.004	<0.01	<0.04	<0.01	26	<0.01	
5/97	7.2	7.4	670	510	<0.01				0.70	<0.004	<0.0005		<0.01	25	<0.01	
5/98	7.22	7.23	970	1,110	0.15		0.01		0.60	<0.006	<0.0005		<0.01	120	<0.01	
5/99	7.40	7.32	750	545	<0.01				0.41	<0.004	<0.0005		0.012	30	<0.01	
5/00	7.45	7.51	650	549	<0.01				0.48	<0.004	<0.0005	0.079	<0.01	21	<0.01	
5/01	8.19	7.21	610	502	0.013		0.013		0.47	<0.004	<0.0005		<0.01	27	<0.01	
5/02	7.27	7.13	990	605	0.19		<0.01		0.77	<0.004	<0.0005		0.0499	117	<0.01	
5/03	7.17	7.23	1200	697	0.13		0.019		1.0	<0.004	<0.0005		<0.01	120	<0.01	
5/04	7.81	7.25	740	542	<0.01				0.46	<0.004	<0.0005		0.011	31	<0.01	
5/05	7.27	7.28	520	607	<0.01				0.51 J	<0.004	<0.0005		0.011	24	<0.01	
5/06	7.36	7.21	820	669	<0.01				<2.0B	<0.004	<0.0005		<0.01	27	<0.01	
5/07	7.17	7.18	750	521	<0.01				0.2	<0.004	<0.0005		<0.01	20	<0.01	
6/08	7.19		740	400	<0.01				0.4	<0.004	<0.0005		<0.01	23	<0.01	
5/09	7.00	7.29	721	696	<0.0050		<0.0050		0.23	<0.0050	<0.0010		<0.0050	19.7	<0.0050	
7/10	7.03	7.54	731	514	<0.0050		<0.0050		0.205	<0.0005	<0.0005		<0.0050	19.6	<0.0050	
7/11	7.05	7.67	657	330	<0.0050		<0.0050	<0.0050	0.232	<0.0005	<0.0010		<0.0050	17.7	<0.0050	
7/12	7.20	8.41	803	672	0.0093		<0.0050	0.0350	0.23	<0.0050	<0.0010		<0.0050	17.9	<0.0050	
8/13	7.80	6.04	712	603	< 0.0050			< 0.0050	0.23	< 0.005			< 0.005	17.6		
7/14	7.30		693		< 0.010			< 0.0050	0.19	< 0.005			< 0.005	19.7		

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-11																
12/83	9.6	9.4	980	825	0.52	0.021			33			0.48	0.06	238		
2/84	9.6	9.5	982	775	0.25				27			7.9	0.37	232		
9/84	9.7	9.1	656	800	0.20	0.015			22			4.90	0.21	213		
5/85	9.4	9.5	750	650	0.30	0.026			13			2.68	0.13	181		
6/88	8.5	8.4	570	585	0.12		<0.01		4.9	0.0043	<0.0015	0.071	0.227	78.5	<0.0026	<0.005
1/95	7.6	7.9	540	680	0.02		<0.01		2.3	<0.004	<0.01	<0.04	0.40	30	<0.01	
5/97	7.8	7.84	530	404	0.09		<0.01		1.8	<0.004	<0.0005		0.42	33	<0.01	
5/98	7.84	7.57	490	507	0.02		<0.01		1.7	<0.004	<0.0005		0.45	31	<0.01	
5/98 (Dup.)	7.85	7.57	500	507	0.02		<0.01		1.7	<0.004	<0.0005		0.43	29	<0.01	
5/99	8.07	8.39	490	425	0.024		0.011		1.7	<0.004	<0.0005		0.45	28	<0.01	
5/00	7.96	7.58	580	500	0.013		0.013		1.4	<0.004	<0.0005	0.046	0.54	32	<0.01	
5/01	7.84	7.26	550	458	<0.01				1.6	<0.004	<0.0005		0.52	35	<0.01	
5/02	8.42	7.87	510	352	0.017		0.017		1.8	<0.004	<0.0005		0.488	34	<0.01	
5/03	7.87	7.99	540	405	0.016		<0.01		2.1	<0.004	<0.0005		0.57	37	<0.01	
5/04	7.83	7.86	530	394	<0.01		<0.01		1.9	<0.004	<0.0005		0.53	47	<0.01	
5/05	7.79	7.64	480	439	<0.01				1.7 J	<0.004	<0.0005		0.52	36	<0.01	
5/06	7.85	7.84	620	518	0.013		<0.01		<2.0B	<0.004	<0.0005		0.59	29	<0.01	
5/07	7.8	7.8	700	527	0.066		<0.010		1.0	<0.004	<0.0005		0.62	69	<0.01	
6/08	7.84		900	509	0.19(J)		<0.01		1.1	0.0042	<0.0005		0.63	100	<0.01	
5/09	7.6	7.8	1130	1168	0.74		<0.0050		0.99	<0.0050	<0.0010		0.83	238	<0.0050	
7/10	7.67	8.12	1180	845	0.365		0.365		2.68	0.00118	<0.0005		0.592	205	<0.0050	
7/11	7.75	8.38	989	444	0.540		0.532		5.55	0.00106	<0.0010		0.542	180	<0.0050	
7/12	NS	NS	NS	NS	NS		NS		NS	NS	NS		NS	NS	NS	
8/13	8.3	7.19	1130	940	0.72			0.11	7.3	< 0.005			0.562	184		
7/14	7.8		1260		0.89			0.75	12.2	0.0112			0.562	244		

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-12																
12/83	7.5	7.3	476	400	0.074	0.021			2.1			<0.01	0.94	24.3		
2/84	7.5	7.2	476	385	0.02				2.0			0.02	0.71	23.8		
9/84	7.7	6.3	366	375	<0.01	<0.01			2.2			<0.01	0.61	29.0		
5/85	7.7	7.4	540	390	0.024	0.022			1.6			<0.01	1.00	27.7		
5/86	7.5		494		<0.01							<0.01	1.23	27		
6/88	7.2	7.5	510	515	<0.01		<0.01		1.3	<0.0015	<0.0015	0.066	1.09	24.4	<0.0026	<0.005
1/95	7.4	7.6	530	350	<0.01		<0.01		1.1	<0.004	<0.01	<0.04	1.5	23	<0.01	
5/97	7.5	7.7	540	422	<0.01				0.90	<0.004	<0.0005		1.7	19	<0.01	
5/98	7.43	7.43	470	550	<0.01				0.80	<0.008	<0.0005		1.9	23	<0.01	
9/98	7.57	7.38	470	481	<0.01				0.92	<0.004	<0.0005		1.6	20	<0.01	
1/99	7.53	7.04	470	440	<0.01				0.89	<0.004	<0.0005		1.8	22	<0.01	
5/99	7.42	7.39	630	515	0.026		0.026		0.73	<0.004	<0.0005		2.5	29	<0.01	
9/99	7.54	7.25	530	565	0.017		0.012		0.68	<0.004	<0.0005		1.9	27	<0.01	
1/00	7.44	6.65	570	495	<0.01				0.74	<0.004	<0.0005		1.8	22	<0.01	
5/00	7.53	7.57	600	558	<0.01				0.73	<0.004	<0.0005	0.043	2.0	29	<0.01	
10/00	7.64	7.33	530	429	<0.01				0.83	<0.004	<0.0005		1.6	22	<0.01	
1/01	7.56	7.69	530	484	<0.01				0.92	<0.004	<0.0005		1.8	28	<0.01	
5/01	7.48	7.13	530	442	<0.01				0.82	<0.004	<0.0005		1.6	23	<0.01	
9/01	7.46	7.98	520	460	<0.01				0.83	<0.004	<0.0005		1.8	28	<0.01	
1/02	7.43	7.66	560	436	<0.01				1.1	<0.004	<0.0005		1.75	27	<0.01	
5/02	7.58	7.6	540	322	<0.01				1.1	<0.004	<0.0005		1.82	27.5	<0.01	
9/02	7.48	7.65	572	540	<0.01				0.829	<0.004	<0.0005		1.72	27.1	<0.01	
1/03	7.70	7.48	536	564	<0.01				0.864	<0.004	<0.0005		1.80	32.2	<0.01	
5/03	7.55	7.21	560	421	<0.01				0.76	<0.004	<0.0005		2.0	31	<0.01	
9/03	7.57	7.44	560	477	<0.01		<0.01		<3.2 B	<0.004	<0.0005		2.0	32	<0.01	
9/03 (Dup.)	7.60	7.44	560	477	<0.01		<0.01		<3.2 B	<0.004	<0.0005		2.0	33	<0.01	
1/04	7.58	7.66	510	400	<0.01				0.69	<0.004	<0.0005		1.9	28	<0.01	
1/04 (Dup.)	7.58	7.66	510	400	<0.01				0.60	<0.004	<0.0005		1.9	28	<0.01	
5/04	7.65	7.55	520	596	<0.01				0.61	<0.004	<0.0005		1.9	31	<0.01	
9/04	7.52	7.55	540	361	<0.01				<1.25 B	<0.004	<0.0005		1.9	30	<0.01	
9/04 (Dup.)	7.53	7.55	540	361	<0.01				<1.25 B	<0.004	<0.0005		1.9	30	<0.01	
1/05	7.67	7.40	520	466	<0.01				0.51	0.0042	<0.0005		1.9	29	<0.01	
1/05 (Dup.)	7.60	7.40	520	466	<0.01				0.50	<0.004	<0.0005		2.0	29	<0.01	
5/05	7.71	7.30	520	443	<0.01				0.87 J	<0.004	<0.0005		2.0	32	<0.01	
10/05	7.55	7.49	520	491	<0.01				2.3	<0.004	<0.0005		1.9	27	<0.01	
10/05 (Dup.)	7.59	7.49	540	491	<0.01				1.4	<0.004	<0.0005		1.9	27	<0.01	
1/06	7.67	7.14	550	480	<0.01				0.61J	<0.004	<0.0005		1.8	25	<0.01	
1/06 (Dup.)	7.65	7.14	550	480	<0.01				0.48J	<0.004	<0.0005		1.8	25	<0.01	
5/06	7.55	7.57	510	473	<0.01				<2.0B	<0.004	<0.0005		1.9	23	<0.01	
9/06	7.61	7.57	610	508	<0.01				0.57	<0.004	<0.0005		2.2	26	<0.01	
9/06 (Dup.)	7.60		610		<0.01				0.62	<0.004	<0.0005		2.2	26	<0.01	
2/07	7.68		620		<.01				0.63	<.004	<.0005		2.0	25	<.01	
5/07	7.61	7.50	560	413	<0.01				1.40	<0.004	<0.0005		2.1	26	<0.01	
3/08	7.52	7.25	540	356	<0.01				0.74	<0.004	<0.0005		2.0	29	<0.01	
6/08	7.76		480	389	<0.01				0.58	<0.004	0.0019		2.0	28	<0.01	
9/08	7.63	7.67	470	545	<0.01				0.60	0.004	<0.0005		1.9	27	<0.01	
1/09	7.40	7.54	558	567	<0.0050				0.68	<0.0050	<0.0010		2.2	29.8	<0.0050	
5/09	7.40	7.61	579	559	[7.1]		[0.052]		0.57	<0.0050	<0.0010		2.2	27.5	<0.0050	
7/09		7.73		541	<0.005		<0.005									
7/09 (Dup.)					<0.005		<0.005									
9/09	7.50	7.66	590	531	<0.0050		<0.0050		0.71	0.0051	<0.0010		2.1	26.2	<0.0050	

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TABLE 2
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FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-12 (cont.)																
1/10	7.50	7.56	539	485	<0.0050		<0.0050		0.82	<0.0050	<0.0010		2.1	27.1	<0.0050	
7/10	7.38	7.89	565	437	0.0107		0.0107		0.616	<0.0005	<0.0005		2.24	32	<0.0050	
11/10	7.46	7.79	550	372	0.0192		0.0192	0.0101	0.816	<0.0050	<0.0005		1.87	34.6	<0.0050	
4/11	7.72	8.07	494	334	0.0294		0.0201	0.0191	0.709	<0.0005	<0.0010		2.21	28.7	<0.0050	
7/11	7.38	7.99	539	115	<0.0050		<0.0050	<0.0050	0.628	<0.0005	<0.0010		2.03	28.0	<0.0050	
11/11	7.36	7.60	549	520	0.00527		<0.0050	<0.0050	0.769	<0.0005	<0.0010		2.00	28.4	<0.0050	
4/12	7.40	7.40	589	543	0.013		<0.0050	<0.0050	1.200	<0.0050	<0.0010		2.12	32.2	<0.0050	
7/12	7.60	9.04	635	526	0.0056		<0.0050	0.0280	0.740	<0.0050	<0.0010		1.97	30.0	<0.0050	
11/12	7.70	8.71	737	535	<0.0050		<0.0050	0.0120	0.940	<0.0050	<0.0010		2.01	30.4	<0.0050	
8/13	7.50	7.64	583	481	0.011			< 0.005	0.820	< 0.005			2.1	32.3		
8/13 (Dup.)	7.40		582		0.011			0.0084	0.880	< 0.005			1.98	31.8		
7/14	8.00		563		< 0.010			< 0.005	1.0	< 0.005			1.58	45.1		

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-14																
5/02	7.64	7.61	500	309	0.018		<0.01		1.9	<0.004	<0.0005		1.05	29.5	<0.01	
5/03	7.59	7.20	530	398	0.014		<0.01		2.1	<0.004	<0.0005		1.2	34	<0.01	
5/04	7.67	7.64	560	633	0.022		<0.01		2.0	<0.004	<0.0005		1.2	51	<0.01	
5/05	7.75	7.50	520	469	0.025		<0.01		2.5	<0.004	<0.0005		1.2	44	<0.01	
5/06	7.80	7.70	530	503	0.014		<0.01		2.2J	<0.004	<0.0005		1.2	38	<0.01	
5/07	7.55	7.33	520	423	0.031		<0.01		2.5	<0.004	<0.0005		1.1	44	<0.01	
6/08	7.60		520	365	0.029		<0.01		2.5	<0.004	<0.0005		1.1	39	<0.01	
5/09	7.40	7.59	581	559	5.6		0.067		2.3	<0.0050	<0.0010		1.2	56.3	<0.0050	
7/09		7.89		544	0.025		<0.005									
7/09 (Dup.)					0.026		<0.005									
7/10	7.60	8.07	556	436	0.0157		0.0157		3.73	<0.0005	<0.0005		0.953	49.7	<0.0050	
7/11	7.61	8.09	513	134	0.0204		0.0147	0.0165	3.00	0.000509	<0.0010		0.887	46.3	<0.0050	
7/12	7.80	9.02	608	487	0.021		<0.005	0.0460	3.20	<0.0050	<0.0010		0.823	46	<0.0050	
8/13	7.70	8.24	533	437	0.024			0.0061	3.30	< 0.005			0.82	46.3		
8/13 (Dup.)	7.80		532		0.025			< 0.005	3.60	< 0.005			0.793	44.6		
7/14	7.80		756		0.13			0.11	3.40	0.0069			0.880	86.0		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-15																
12/83	6.9	6.7	568	435	0.44	0.018			0.1			0.14	0.03	28.8		
2/84	6.9	6.7	550	435	0.51				0.1			0.13	<0.01	29.4		
5/85	7.4	6.8	590	445	0.44	0.034			0.3			0.18	<0.01	32.5		
5/86	7.1		550		0.39							0.15	<0.01	34		
7/88	7.0/7.1	7.1/7.1	610/630	600/600	0.43/0.32		0.10/<0.01		0.2/0.2	0.0045	0.0025	10.8	0.117	34.4	0.0059	<0.005
1/95	7.0	7.1	720	420	0.49		0.12		1.4	<0.004	<0.01	0.26	<0.01	45	<0.01	
7/96	6.8	7.07	570	613	1.0	<0.020			2.1	<0.004	<0.0005		<0.01		<0.01	
5/97	7.4	7.44	800	731	2.8		0.20		11	<0.004	<0.0005		0.02	140	<0.01	
5/97 (Dup.)	7.4	7.44	800	731	3.3		0.40		8.9	<0.004	<0.0005		0.05	140	<0.01	
5/98	6.99	6.78	610	625	0.49		0.02		0.40	<0.004	<0.0005		<0.01	40	<0.01	
5/99	7.49	7.70	980	785	8.5		<0.01		15	<0.004	<0.0005		0.017	150	<0.01	
5/00	7.53	7.56	1,200	1,169	12		<0.01		25	<0.004	<0.0005	10	0.17	120	<0.01	
5/01	7.03	6.83	600	501	0.49		0.32		2.0	<0.004	<0.0005		0.017	51	<0.01	
5/02	7.29	7.21	590	333	1.1		<0.10		2.5	0.0222	<0.0005		0.0696	56.8	<0.01	
5/03	7.23	7.47	610	469	0.80		0.11		1.6	<0.004	<0.0005		<0.010	49	<0.01	
5/04	7.53	7.54	1,300	982	4.60		<0.01		13	<0.004	<0.0005		0.024	360	<0.01	
5/05	8.17	8.01	1,200	1,105	8.2		6.6		49 J	0.023	0.0024		0.69	290	0.074	
5/06	8.22	8.34	1,300	1,100	16.0		5.9		35J	0.020	0.0024		0.75	280	0.069	
5/07	8.07	7.91	930	727	6.7		0.8		23	0.007	<0.0005		0.14	210	0.014	
5/07 (Dup.)	8.04	7.91	930	727	6.5		0.8		23	0.009	<0.0005		0.14	210	0.015	
6/08	7.91		790		7.2		1.4(J)		20	0.0046	<0.0005		0.1	180	<0.01	
6/08 (Dup.)	7.93		790	554	8.1		0.79(J)		20	<0.004	<0.0005		0.096	170	<0.01	
5/09	7.7	7.91	946	918	5.6		0.012		17.1	<0.0050	<0.0010		0.072	232	<0.0050	
7/10	7.97	8.24	1060	767	3.39		2.14		22.2	0.1	<0.0005		0.182	155	0.0143	
7/10 Dup.)	7.97	8.24	1060	767	2.54		1.46		24.2	0.132	<0.0005		0.177	158	0.0141	
7/11	7.61	8.21	943	197	2.24		2.23	0.0281	15.8	0.00293	<0.0010		0.148	196	<0.0050	
7/12	7.8	9.16	1060	906	4.2		1.2	0.0930	19.7	<0.0050	<0.0010		0.208	175	<0.0050	
8/13	7.6	7.63	1000	831	4.4			0.0750	16.5	< 0.005			0.279	182		
7/14	7.8		1040		3.1			1.1	16.0	0.0101			0.380	206		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-16																
12/83	9.8	9.9	2,092	1,800	7.35	0.034			110			12.4	0.91	530		
2/84	9.7	9.7	2,049	1,550	5.5				98			13.9	1.41	570		
9/84	9.8	9.2	1,390	10,500	2.11	<0.01			80			9.5	0.5	475		
5/85	9.4	9.0	2,300	1,400	10.0	0.11			72			10.3	1.09	443		
10/85	8.4		1,540		3.9	0.0			30		<0.01	2.10	0.41	186		
7/88	9.4	9.7	1,400	1,410	4.6		<0.01		61	0.063	<0.0015	6.57	0.22	300	0.018	0.008
1/95	7.7	9.0	850	930	1.4		0.13		7.9	<0.004	<0.01	0.52	1.1	81	<0.01	
7/96	7.3	7.75	990	941	1.6	<0.020			7.9	<0.004	<0.0005		1		<0.01	
5/97	7.6	7.6	980	801	1.3		0.3		11	<0.004	<0.0005		0.43	130	<0.01	
5/98	7.72	7.70	750	760	2.0		0.40		11	<0.004	<0.0005		1.2	80	<0.01	
9/98	7.70	7.50	860	790	1.4		1.4		9.5	<0.004	<0.0005		1.3	75	<0.01	
1/99	7.70	7.12	740	685	1.4		<0.04		9.8	<0.004	<0.0005		1.5	85	<0.01	
5/99	7.88	7.90	750	600	2.8		0.16		9.0	<0.004	<0.0005		1.5	82	<0.01	
9/99	7.82	8.15	730	745	2.9		0.88		8.2	<0.004	<0.0005		1.7	78	<0.01	
1/00	7.76	6.95	950	810	5.5		5.5		7.6	<0.004	<0.0005		2.2	68	<0.01	
1/00 (Dup.)	7.77	6.95	940	810	5.8		5.8		7.8	<0.004	<0.005		2.2	70	<0.01	
5/00	7.69	7.53	1,100	945	12		12		7.9	<0.004	<0.0005	4.3	2.3	91	<0.01	
5/00 (Dup.)	7.72	7.53	1,000	945	12		12		8.1	<0.004	<0.0005	4.4	2.4	91	<0.01	
10/00	7.74	7.67	1,000	774	16		<0.01		13	<0.004	<0.0005		1.6	130	<0.01	
10/00 (Dup.)	7.77	7.67	1,000	774	15		<0.01		13	<0.004	<0.0005		1.7	130	<0.01	
1/01	7.84	7.42	1,200	939	16		3.2		24	<0.004	<0.0005		1.6	250	<0.01	
1/01 (Dup.)	7.85	7.42	1,200	939	17		2.5		24	<0.004	<0.0005		1.6	250	<0.01	
5/01	7.89	8.04	1,100	920	12		12		39	<0.004	<0.0005		1.2	200	<0.01	
5/01 (Dup.)	7.90	8.04	1,100	920	11		11		40	<0.004	<0.0005		1.2	210	<0.01	
9/01	7.91	7.88	1,300	754	9.7		0.85		43	<0.004	0.00058		0.89	270	0.013	
9/01 (Dup.)	7.90	7.88	1,200	754	9.0		0.65		43	0.019	0.00096		1.1	260	0.021	
1/02	8.03	8.11	1,300	913	9.5		<0.5		57	0.0102	0.00211		1.46	237	0.055	
1/02 (Dup.)	8.05	8.11	1,300	913	10		0.58		59	0.00816	0.00171		1.33	211	0.0422	
5/02	7.92	7.92	1,300	695	7.9		<0.20		57	0.0332	0.0015		1.12	254	0.0469	
5/02 (Dup.)	8.06	7.92	1,300	695	7.4		<0.20		59	0.0269	0.0016		1.10	242	0.0500	
9/02	8.17	8.33	1,280	1176	9.75		0.56		50.1	0.0263	0.00155		1.12	208	0.0426	
9/02 (Dup.)	8.16	8.33	1,280	1176	10.9		1.56		49	0.0222	0.00196		1.4	211	0.0535	
1/03	8.31	7.78	1,310	1,299	7.03		0.77		27.5	0.0449	0.00136		0.792	235	0.0308	
1/03 (Dup.)	8.28	7.78	1,290	1,299	6.48		1.20		54	0.0381	0.00175		1.0	242	0.0441	
5/03	8.00	8.17	1,300	933	5.5		<0.01		58	0.012	0.0012		1.1	220	0.052	
5/03 (Dup.)	8.05	8.17	1,300	933	5.9		<0.01		52	0.0099	0.00093		1.0	220	0.044	
9/03	8.21	8.17	1,200	1,036	3.9		0.062		74	0.011	<0.0005		0.61	240	0.023	
1/04	7.89	8.07	1,300	883	6.0		1.5		52	<0.004	<0.0005		0.83	220	0.017	
5/04	8.18	8.22	1,300	1,410	5.3		0.35		71	0.0071	0.0014		1.1	390	0.037	
5/04 (Dup.)	8.15	8.22	1,300	1,410	5.9		0.35		71	0.016	0.0014		1.1	390	0.04	
9/04	8.10	8.15	1,400	914	12		3.1		56	0.0053	0.0011		1.2	270	0.027	
1/05	8.46	8.38	1,200	1,048	5.2		0.67		65	0.0085	0.00089		0.86	250	0.021	
5/05	8.46	8.57	1,200	998	6.7		0.14		64 J	0.023	0.0016		1.7	260	0.061	
5/05 (Dup.)	8.61	8.57	1,200	998	7.3		0.14		55 J	0.025	0.0018		1.7	280	0.064	
10/05	9.05	9.18	1,200	1,085	12		0.88		29	0.057	0.0029		2.7	280	0.12	
1/06	9.17	7.51	1,100	972	2.8		<0.01		62J	0.067	0.0021J		2.1	220	0.10	
5/06	9.34	9.45	1,200	963	4.9		<0.01		49J	0.082	0.0019		1.4	250	0.12	
5/06 (Dup.)	9.35	9.45	1,200	963	5.9		<0.01		44J	0.078	0.0019		1.5	250	0.12	
9/06	9.39	9.44	1,200	1002	6.6		2.4		41	0.058	<0.0005		0.48	240	0.051	

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-16 (cont.)																
2/07	9.3		1,300		7.4		<.01		38	0.045	<.0005		0.82	240	0.045	
5/07	9.19	9.22	1,100	854	59		<0.01		59	0.042	0.00083		1	240	0.056	
9/07	9.24	9.82	1,100	816	8.4		0.83		52	0.047	0.00076		1.3	240	0.058	
3/08	9.05	8.97	1,100	833	3.4		0.098		39	0.037	0.00056		1	220	0.046	
6/08	9.14		1,000	613	3.3		0.13		33	0.039	0.00071		0.89	200	0.041	
9/08	9.14	9.22	880	991	3.5		<0.01		26	0.033	<0.0005		0.79	210	0.038	
1/09	8.8	9.07	921	908	3.7		3.7		107	0.02	<0.0010		0.54	118	0.02	
5/09	9.0	9.28	1,040	986	<0.0050		<0.0050		35.8	0.045	<0.0010		0.85	268	0.049	
5/09 (Dup.)	9.0	9.28	1,040	986	1.2		0.077		35.7	0.048	<0.0010		0.85	268	0.049	
9/09	9.0	9.35	1,040	899	5.0		0.38		31.9	0.026	<0.0010		0.87	232	0.028	
1/10	9.1	9.24	883	836	3.2		<0.0050		32.1	0.023	<0.0010		0.89	219	0.025	
1/10 (Dup.)	9.1		972		3.4		<0.0050		33.6	0.025	<0.0005		0.85	219	0.026	
7/10	9.07	9.39	971	733	1.87		1.87		37.6	0.127	<0.0005		0.578	155	0.0293	
11/10	9.13	9.48	1,020	680	4.61		3.03	0.0698	30.7	0.0236	<0.0005		0.458	149	0.0193	
4/11	9.28	9.54	910	583	2.70		1.46	0.0711	37.1	0.0364	<0.0010		0.709	198	0.041	
7/11	9.20	9.66	952	432	0.978		0.975	0.0352	30.5	0.0393	<0.0010		0.740	188	0.0402	
11/11	9.16	9.17	985	944	3.13		1.08	0.0373	29.7	0.0288	<0.0010		0.473	203	0.0344	
11/11 (Dup.)	9.16		955		3.56		1.37	0.0355	29.0	0.0284	<0.0010		0.520	196	0.0355	
4/12	9.00	9.27	1,030	1020	3.4		0.084	0.0500	38.7	0.0296	<0.0010		0.477	236	0.0286	
4/12 (Dup.)	9.00		1,050		3.3		0.081	0.0330	40.4	0.0336	<0.0010		0.330	238	0.0282	
7/12	9.10	9.42	1,090	930	4.2		0.48	<0.0050	33.0	0.0325	<0.0010		0.716	209	0.0352	
11/12	9.00	[10.56]	1,240	911	4.4		0.72	0.0290	29.4	0.0306	<0.0010		0.722	199	0.0295	
8/13	8.80	7.97	963	796	3.4			0.0290	29.8	0.0188			0.466	193		
7/14	7.40		1,020		5.1			0.0280	31.6	0.027			0.579	225		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-17																
12/83	7.9	7.6	613	475	0.99	0.021			5.6			0.44	1.38	78		
2/84	7.8	7.4	581	470	1.03				4.4			0.39	1.77	52		
9/84	8.0	6.7	485	550	0.17	<0.01			9.1			0.28	1.27	99		
5/85	7.9	7.9	610	470	0.76	0.045			4.1			0.28	1.80	45.3		
10/85	7.9		564		0.56	0.43			4.2		<0.01	6.80	1.93	43.4		
6/88	7.7	7.5	590	475	1.3		0.46		5.2	0.0054	<0.0015	0.973	1.72	39.7	<0.0026	<0.005
2/90	7.7	7.55	680	640	0.582		<0.005		4.1			18		40		
1/95	7.5	7.7	710	420	0.64		<0.01		3.9	<0.004	<0.01	0.26	1.9	36	<0.01	
5/97	7.5	7.67	870	488	0.54		<0.01		3.1	<0.004	<0.0005		1.9	30	<0.01	
5/98	7.6	7.40	570	580	0.72		0.09		3.4	<0.004	<0.0005		1.8	34	<0.01	
5/99	7.50	7.40	550	470	0.46		0.46		3.2	<0.004	<0.0005		1.8	31	<0.01	
5/99 (Dup.)	7.37	7.40	550	470	0.49		0.49		3.2	<0.004	<0.0005		1.8	30	<0.01	
5/00	7.57	7.61	610	523	0.53		0.31		2.9	<0.004	<0.0005	0.34	1.8	24	<0.01	
5/01	7.87	7.38	570	460	0.50		0.50		3.0	<0.004	<0.0005		1.7	28	<0.01	
5/02	7.64	7.62	550	328	0.35		0.35		5.4	<0.004	<0.0005		1.42	40.3	<0.01	
5/03	7.65	7.80	580	435	0.41		0.096		9.8	<0.004	<0.0005		1.6	44	<0.01	
5/04	7.71	7.83	670	511	0.41		<0.01		23	0.0044	<0.0005		1.1	130	<0.01	
5/05	7.66	7.55	910	819	6.2		3.1		17 J	0.0044	<0.0005		1.1	170	<0.01	
5/06	7.73	7.76	910	759	4.2		2.1		13J	<0.004	<0.0005		1.4	130	<0.01	
5/06 (Dup.)	7.85	7.76	910	759	3.5		0.84		22J	<0.004	<0.0005		1.4	130	<0.01	
5/07	7.58	7.56	740	544	2.2		<0.01		11	<0.004	<0.0005		1.6	87	<0.01	
6/08	7.72		770	505	2.9		0.32		17	<0.004	<0.0005		1.4	120	<0.01	
5/09	7.5	7.71	712	679	2.0		0.19		6.4	<0.0050	<0.0010		1.6	93.2	<0.0050	
5/09 (Dup.)	7.4		650		2.0		0.19		6.2	<0.0050	<0.0010		1.6	92.9	<0.0050	
7/10	7.89	8.10	849	626	2.69		1.89		18.4	0.101	<0.0005		0.752	107	0.00796	
7/10 (Dup.)	7.89	8.10	850	626	3.01		2.40		16.2	0.0975	<0.0005		0.85	117	0.00899	
7/11	7.63	8.13	736	144	2.98		1.11	0.0257	11.2	0.00194	<0.0010		1.40	101	<0.0050	
7/11 (Dup.)	7.54		710		3.25		7.42	0.0290	11.6	0.00173	<0.0010		1.38	110	<0.0050	
7/12	7.8	9.18	836	710	2.4		0.14	0.1300	10.9	<0.0050	<0.0010		1.50	91.7	0.0051	
7/12 (Dup.)	7.6		739		2.1		<0.0050	0.0940	11.2	<0.0050	<0.0010		1.58	94.8	<0.0050	
8/13	7.7	7.50	802	661	2.3			0.0540	13.6	< 0.005			1.36	123		
7/14	8.0		804		3.0			1.8	15.3	< 0.005			1.35	140		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Cadmium	PCE
MW-18																
12/83	9.9	10.0	10,526	8,750	110.0	0.45			460			58.7	0.26	3,150		
2/84	9.8	9.8	9,615	7,500	52.0				350			61	0.50	2,750		
9/84	10.1	9.5	9,111	10,000	194	0.19			690			103	0.3	4,130		
5/85	9.8	9.9		7,000	35.2	0.091			410			64.2	0.35	2,540		
10/85	9.9		8,300		120	12			350		<0.01	71.4	1.06	1,940		
7/88	10.0	10.1	9,700	10,000	29		25		820	0.159	0.0071	144	1.75	2,640	0.191	0.022
2/90	10.0	10.1	8,000	11,400	67.0		10.5		710			110		3,500		
1/95	9.6	11.1	5,900	>2,000	15		6.6		290	0.062	<0.01	56	0.22	1,500	0.02	
7/96	9.1	8.67	4,300	4,200	7.2	<0.020			180	0.085	0.0006	56	0.19	1,500	0.01	0.006
5/97	9.7	9.58	4,000	4,110	8.7		<0.50		200	0.078	0.0009		0.29	1,100	0.02	
5/98	9.76	10.06	4200	4,300	9.8		0.40		260	0.094	0.0014		0.49	1100	0.05	0.024
9/98	9.70	9.88	3,600	3,590	5.9		<0.01		210	0.085	0.00084		0.29	800	0.022	0.014
1/99	9.67	10.04	3,600	3,450	79		3.0		210	0.088	0.00063		0.29	830	0.028	0.0219
5/99	9.72	9.80	3,000	3,000	95		81		370	0.088	0.0014		0.92	850	0.045	0.017
9/99	9.62	10.26	3,000	2,870	90		14		170	0.074	<0.0005		0.24	700	0.011	0.016
1/00	9.56	9.15	3,000	2,700	27		19		180	0.078	0.00059		0.26	660	0.017	0.020
5/00	9.59	9.73	2,800	2,270	84		75		160	0.075	0.00069	25	0.56	620	0.035	0.019
5/00 (Dup.)	9.60	9.73	2,800	2,270	64		50		160	0.073	0.00062	20	0.33	620	0.023	0.016
10/00	9.54	9.67	2,400	1,948	29		<0.01		130	0.074	0.0024		2.1	400	0.08	0.012
1/01	9.62	10.62	2,500	1,980	53		9.2		170	0.067	0.0006		0.3	580	0.019	0.043
5/01	9.52	10.36	2,100	1,780	15		<0.50		100	0.065	0.0014		0.97	380	0.042	0.040
5/01 (Dup.)	9.52	10.36	2,000	1,780	49		49		110	0.079	0.0037		3.1	380	0.140	0.046
9/01	9.61	9.75	2,100	1,668	91		11		180	0.12	0.00099		0.3	520	0.024	0.027
1/02	9.44	9.85	2,400	1,680	36		<0.01		150	0.15	0.0125		16.8	436	0.360	0.024
5/02	9.48	9.55	2,300	1,693	110		40		150	0.0716	0.00105		0.432	517	0.0269	0.020
5/02 (Dup.)	9.49	9.55	2,300	1,693	72		8.3		150	0.0703	0.00104		0.401	510	0.0248	0.052
9/02	9.49	9.77	1,720	1,599	74		<0.01		108	0.0906	0.00141		0.927	303	0.0525	0.0172
1/03	9.48	9.57	2,010	2,160	62.1		<2.5		163	0.0932	0.00133		0.285	452	0.0220	0.058
5/03	9.34	9.58	1,400	1,257	15		3.0		88	0.061	<0.0005		0.20	240	0.021	0.027
5/03 (Dup.)	9.39	9.58	1,400	1,257	20		<0.01		83	0.066	0.00068		0.30	230	0.034	0.047
9/03	9.42	9.61	1,800	1,424	4		<0.01		97	0.12	0.0044		5.60	380	0.17	0.018
1/04	9.33	9.62	2,400	1,237	17		5.5		77	0.061	0.00066		0.43	290	0.028	0.012
5/04	9.51	9.66	2,300	1,546	1.8		0.33		150	0.081	0.00095		0.35	680	0.037	0.012
5/04 (Dup.)	9.49	9.66	2,200	1,546	2		<0.01		140	0.079	0.00092		0.35	680	0.035	0.014
9/04	9.30	9.48	1,800	1,145	35		22		42	0.17	0.012		13	380	0.43	0.0097
1/05	9.40	9.45	3,000	2,920	81		4.7		130	0.056	0.0014		0.55	570	0.021	0.0071
5/05	9.44	9.45	1,700	1,056	13		0.34		97 J	0.07	0.0014		0.78	430	0.049	0.0057
5/05 (Dup.)	9.49	9.45	1,600	1,056	8.2		0.14		94 J	0.073	0.0012		0.75	440	0.037	0.0056
10/05	9.35	9.47	2,300	1,937	6.6		0.24		52	0.05	0.0015		0.88	510	0.033	0.0071
1/06	9.55	7.60	2,900	2,990	4.6		<0.01		210J	0.049	0.0022J		0.78	650	0.034	0.0088
5/06	9.77	10.07	3,400	2,830	7.7		<0.01		360J	0.13	0.0013		0.54	700	0.043	0.0078
9/06	9.61	9.79	1,900	1,720	36.0		36		100	0.11	0.0026		1.80	380	0.099	<0.005
2/07	9.47		2,000		2.2		<.01		84	0.058	0.0012		1.20	300	0.056	<.005
5/07	9.39	9.45	1,700	1,471	3.0		<0.01		140	0.065	0.00091		0.43	350	0.039	<0.005
9/07	9.53	9.83	1,300	1,087	9.0		<0.010		75	0.067	0.00067		0.32	300	0.037	<0.0050
3/08	9.42	9.35	1,700	981	12.0		<0.01		92	0.069	<0.0005		0.24	370	0.021	<0.005
6/08	9.43		1,500	1,118	3.9		<0.01		88	0.066	0.00088		0.40	310	0.038	<0.005
9/08	9.40	9.48	1,100	1,260	5.4		<0.01		59	0.049	<0.0005		0.18	270	0.017	<0.005
1/09	9.30	9.47	1,710	1,704	36.7		36.6		117	0.05	0.0014		0.78	242	0.034	<0.0050
5/09	9.50	9.76	3,580	2,580	[0.86]		0.033		206	0.06	0.0014		0.56	805	0.021	<0.0050
7/09		9.94		1,750	7.40		<0.005									
9/09	9.60	9.90	1,480	1,439	26.5		10.7		98.6	0.065	<0.0010		0.13	384	0.016	<0.0050

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-18 (cont.)																
1/10	9.60	9.74	1,460	1,451	18.9		<0.005		83.7	0.05	<0.0010		0.51	434	0.026	<0.0050
7/10	9.67	9.94	1,480	1,307	4.35		4.35		110	0.187	<0.0005		0.122	272	0.014	0.00167
7/10 (Dup.)	9.67	9.94	1,600	1,307	3.96		3.96		125	0.168	<0.0005		0.112	259	0.013	0.00167
11/10	9.58	9.93	1,320	1,099	8.20		<0.25	0.1180	76	0.0451	<0.0005		0.133	211	0.007	0.00148
4/11	9.81	10.08	2,040	1,209	8.53		1.99	0.2870	178	0.102	<0.0010		0.354	419	0.029	0.00303
4/11 (Dup.)	9.83		2,050		8.07		2.02	0.3530	152	0.114	<0.0010		0.335	447	0.028	0.00333
7/11	9.66	10.10	1,440	743	30.6		30.6	0.0751	80	0.0845	<0.0010		0.194	298	0.0245	0.00205
11/11	9.65	9.62	1,110	1,110	9.96		3.78	0.0606	49.6	0.0647	<0.0010		0.653	250	0.0372	0.00285
4/12	9.40	9.64	1,590	1,540	15.7		<0.005	0.0580	91.3	0.0702	0.0013		0.885	324	0.0411	<0.0050
7/12	9.40	9.62	1,810	1,280	10.6		<0.005	0.1400	104	0.0545	0.0012		0.420	277	0.0364	<0.0050
11/12	9.30	[10.83]	1,710	1,180	4.70		<0.005	0.0390	66.5	0.0527	<0.0010		0.367	249	0.0287	<0.0050
8/13	9.20	9.01	1,610	1,177	21.4			0.0760	116	0.0427			0.409	320		< 0.005
7/14	9.30		1,140		14.6			0.0260	73.5	0.0568			0.225	273		< 0.005

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-19																
12/83	7.2	7.1	581	435	0.068	0.013			0.3			<0.01	0.54	22.9		
2/84	7.1	6.8	575	405	0.04				0.5			0.05	0.26	20.2		
9/84	7.2	6.3	451	460	0.01	<0.01			0.4			0.02	0.04	23.5		
5/85	7.6	7.0	640	460	0.019	0.014			0.5			0.12	0.02	23.6		
7/88	7.3	7.3	630	600	<0.01		<0.01		0.5	0.0067	<0.0015	17.6	0.23	32.2	0.015	<0.005
2/90	7.3	7.27	520	560	0.2		<0.005		0.7					21.0		
1/95	7.3	7.2	630	410	<0.01		<0.01		1.0	<0.004	<0.01	0.09	<0.01	24	<0.01	
5/97	7.4	7.5	520	431	<0.01		<0.01		2.0	<0.004	<0.0005		<0.01	18	<0.01	
5/98	7.23	6.95	560	575	<0.01				1.4	<0.008	<0.0005		<0.01	23	<0.01	
5/99	7.47	7.40	570	460	<0.01				1.3	<0.004	<0.0005		<0.01	22	<0.01	
5/00	7.33	7.20	580	538	<0.01				1.2	<0.004	<0.0005	0.13	<0.01	16	<0.01	
5/01	7.18	6.98	580	494	<0.01				1.1	<0.004	<0.0005		<0.01	20	<0.01	
5/02	7.39	7.38	530	324	<0.01				1.2	<0.004	<0.0005		<0.005	23.4	<0.01	
5/03	7.53	7.38	550	420	<0.01				2.2	<0.004	<0.0005		<0.01	20	<0.01	
5/04	7.87	7.59	460	342	<0.01				3.6	<0.004	<0.0005		<0.01	16	<0.01	
5/05	7.27	7.10	780	700	0.012		<0.01		2.8 J	<0.004	<0.0005		<0.01	38	<0.01	
5/06	7.48	7.48	590	541	<0.01				3.5J	<0.004	<0.0005		0.014	15	<0.01	
5/07	7.33	7.03	810	583	<0.01				1.1	0.0042	<0.0005		<0.01	49	<0.01	
6/08	7.27		680	432	<0.01				1.1	<0.004	<0.0005		<0.01	28	<0.01	
6/08 (Dup.)	7.28		680	432	<0.01				1.1	<0.004	<0.0005		<0.01	30	<0.01	
5/09	7.1	7.32	695	602	<0.0050		<0.0050		1.4	<0.0050	<0.0010		<0.0050	13.4	<0.0050	
7/10	7.39	7.57	827	605	<0.0050		<0.0050		0.671	<0.0050	<0.0005		<0.0050	46.5	<0.0050	
7/11	7.08	7.84	792	150	<0.0050		<0.0050	0.0091	0.681	<0.0005	<0.0010		<0.0050	32.2	<0.0050	
7/11 (Dup.)	7.01		810		<0.0050		<0.0050	<0.0050	0.651	<0.0005	<0.0010		<0.0050	32.6	<0.0050	
7/12	7.3	9.18	951	807	<0.0050		<0.0050	<0.0050	0.84	<0.0050	<0.0010		<0.0050	37.1	<0.0050	
8/13	7.2	7.02	1010	847	< 0.005			< 0.005	0.80	< 0.005			< 0.005	53.6		
8/13 (Dup.)	7.1		1020		< 0.0050			< 0.005	0.58	< 0.005			< 0.005	54.0		
7/14	9.3		1010		< 0.010			< 0.005	0.43	0.0056			< 0.005	66.2		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
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FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-28																
5/86	5.5		382		0.89	0.08			<0.1			0.36	0.02	41		
6/88	5.7	5.8	640	665	7.4		0.6		<0.1	<0.0015	<0.0015	2.41	0.035	83.3	<0.0026	<0.005
1/95	6.2	7.4	500	700	0.74		0.26		2.7	<0.004	<0.01	0.38	0.02	79	<0.01	
7/96	5.7	5.92	440	429	0.26	<0.020			0.50	<0.004	<0.0005		0.01		<0.01	
5/97	5.6	6.4	590	453	0.11		<0.02		0.2	<0.004	<0.0005		0.01	62	<0.01	
5/98	5.74	5.32	500	550	0.12		<0.01		0.20	<0.004	<0.0005		0.01	65	<0.01	
9/98	5.81	5.28	540	527	0.11		0.11		0.27	<0.004	<0.0005		0.011	64	<0.01	
9/98 (Dup.)	5.83	5.28	540	527	0.11		0.11		0.24	<0.004	<0.0005		0.01	65	<0.01	
1/99	5.72	5.17	470	450	0.087		0.027		0.38	<0.004	<0.0005		0.013	67	<0.01	
5/99	5.72	5.43	460	405	0.13		0.13		0.35	<0.004	<0.0005		0.011	70	<0.01	
9/99	5.95	6.15	480	480	0.12		0.016		0.26	<0.004	<0.0005		<0.01	57	<0.01	
1/00	6.04	5.25	460	410	0.23		0.22		0.35	<0.004	<0.0005		<0.01	58	<0.01	
5/00	5.89	5.90	470	464	1.0		1.0		0.30	<0.004	<0.0005	0.69	0.014	77	<0.01	
10/00	5.85	5.47	460	384	0.96		0.28		0.27	<0.004	<0.0005		0.014	52	<0.01	
1/01	5.75	5.45	460	412	0.9		0.9		0.32	<0.004	<0.0005		0.015	64	<0.01	
5/01	5.65	5.20	420	391	1.1		0.36		0.22	<0.004	<0.0005		0.014	54	<0.01	
9/01	5.70	6.01	430	415	1.3		<0.1		0.56	<0.004	<0.0005		0.015	64	<0.01	
1/02	5.73	5.77	450	396	0.9		0.9		0.37	<0.004	<0.0005		0.0196	60.5	<0.01	
5/02	5.63	5.71	400	311	0.60		<0.04		0.22	<0.004	<0.0005		0.0146	62.1	<0.01	
9/02	5.65	6.00	449	443	0.975		0.13		0.164	<0.004	<0.0005		0.0265	59.1	<0.01	
1/03	5.72	5.99	412	482	0.65		<0.02		0.305	<0.004	<0.0005		0.0192	70.4	<0.01	
5/03	5.73	6.09	390	305	0.38		0.068		0.13	<0.004	<0.0005		0.017	47	<0.01	
9/03	5.93	6.25	440	377	0.35		0.016		<3.2 B	0.0068	<0.0005		0.018	61	<0.01	
1/04	6.01	7.24	400	341	0.40		0.40		0.53	<0.004	<0.0005		0.021	54	<0.01	
5/04	6.48	5.77	410	306	0.15		0.01		0.21	<0.004	<0.0005		0.024	81	<0.01	
9/04	5.84	5.65	410	276	0.25		0.12		<1.25 B	<0.004	<0.0005		0.03	53	<0.01	
1/05	6.23	5.47	360	293	0.29		0.01		0.19	<0.004	<0.0005		0.018	51	<0.01	
5/05	6.06	5.54	380	336	0.15		0.14		0.27 J	<0.004	<0.0005		0.023	56	<0.01	
10/05	6.06	5.58	380	289	0.54		0.017		2.1	<0.004	<0.0005		0.024	47	<0.01	
1/06	6.03	5.89	420	372	0.38		<0.01		1.5J	<0.004	<0.0005		<0.10B	72	<0.01	
5/06	6.12	5.70	380	316	0.48		<0.01		<2.0B	<0.004	<0.0005		0.032	51	<0.01	
9/06	6.06	5.77	380	345	0.23		0.230		<0.55B	<0.004	<0.0005		<0.01	52	<0.01	
2/07	6.24		470		0.47		0.020		0.78	<.004	<.0005		<.01	65	<.01	
5/07	6.04	5.68	380	341	0.26		<0.01		0.14	<0.004	<0.0005		0.018	61	<0.01	
5/07 (Dup.)	6.13	5.68	380	341	0.26		<0.01		<0.1	0.0044	<0.0005		0.010	61	<0.01	
9/07	6.69	6.59	360	295	0.26		<0.010		0.17	<0.0040	<0.00050		0.120	59	<0.010	
3/08	6.01	5.67	360	275	0.20		<0.01		0.15	<0.004	<0.0005		<0.010	56	<0.010	
6/08	6.07		380	276	0.24		<0.01		0.27	<0.004	<0.0005		0.069	63	<0.01	
9/08	6.39	6.23	310	354	0.17		<0.01		0.16	<0.004	<0.0005		<0.01	58	<0.01	
1/09	6.00	6.21	339	348	<0.0050				0.15	<0.0050	<0.0010		0.090	53	<0.0050	
5/09	5.90	6.17	383	385	4.10		0.062		0.15	<0.0050	<0.0010		0.018	74.0	<0.0050	
9/09	6.30	6.33	400	372	0.14		0.021		0.24	<0.0050	<0.0010		0.0079	74.9	<0.0050	
9/09 (Dup)	6.20		448		0.13		<0.0050		0.21	<0.0050	<0.0010		0.020	76.0	<0.0050	
1/10	6.10	6.24	333	341	0.013		<0.0050		0.20	<0.0050	<0.0010		0.061	64.1	<0.0050	
7/10	5.97	6.43	404	359	0.0933		0.0933		0.321	0.112	<0.0005		0.0534	48.5	0.00746	
11/10	6.25	6.28	375	313	0.2480		0.2480	0.0088	0.248	<0.0025	<0.0005		<0.005	61.1	<0.0050	
11/10 (Dup.)	5.90		367		0.0997		0.0997	0.0118	0.236	<0.0025	<0.0005		0.0073	61.1	<0.0050	
4/11	6.58	6.53	289	247	0.3760		0.0400	0.0159	0.389	<0.0005	<0.0010		0.0248	46.2	<0.0050	
7/11	5.84	6.56	377	153	0.0384		0.0360	0.0121	0.387	<0.0005	<0.0010		0.0127	57.3	<0.0050	
11/11	5.83	6.29	375	366	0.0708		0.0640	0.0114	0.366	<0.0005	<0.0010		<0.005	55.6	<0.0050	
4/12	6.00	5.82	395	381	0.0720		0.0140	0.0069	0.490	<0.0050	<0.0010		<0.005	61.3	<0.0050	
7/12	6.20	8.35	529	437	<0.1000		0.0500	0.3400	0.340	<0.0050	<0.0010		0.0594	57.1	0.0069	
11/12	6.20	6.84	531	393	0.0940		<0.0050	0.0055	0.450	<0.0050	<0.0010		0.0761	62.0	0.0052	
8/13	7.00	5.87	374	304	0.0550			< 0.005	0.220	< 0.005			0.0145	53.1		
7/14	6.10		390		< 0.010			0.011	0.450	< 0.005			0.0056	57.0		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-29S																
5/86	8.4		2,350		1.5	0.02			28			0.64	0.08	590		
6/88	9.0	9.0	1,100	1,090	0.99		0.37		44	0.0052	<0.0015	1.52	0.094	224	0.0044	<0.005
1/95	8.3	10.0	2,900	1,750	0.79		0.07		56	<0.004	<0.01	0.37	0.12	590	<0.01	
5/97	8.3	8.43	2,200	1,735	0.6		<0.1		44	<0.004	<0.0005		0.14	410	<0.01	
5/98	8.64	8.70	1,700	1,665	0.18				26	<0.004	<0.0005		0.09	370	<0.01	
5/99	8.35	8.37	1,300	1,090	0.22				16	<0.004	<0.0005		0.30	230	<0.01	
5/00	8.11	8.11	1,200	1,023	0.17				16	0.0057	<0.0005	0.14	0.41	130	<0.01	
5/01	7.89	7.54	1,000	828	0.16				16	<0.004	<0.0005		0.42	160	<0.01	
5/02	7.73	7.71	700	408	0.08				10	<0.004	<0.0005		0.583	79.6	<0.01	
5/03	7.68	7.81	1,000	759	0.21				9.1	<0.004	<0.0005		0.78	110	<0.01	
5/04	7.48	7.56	1,700	1,760	0.93				8.7	<0.004	<0.0005		1.2	380	<0.01	
5/05	7.62	7.37	1,200	950	1.3				9.7 J	<0.004	<0.0005		0.78	170	<0.01	
5/06	7.47	7.32	2,000	1,510	1.7				15J	<0.004	<0.0005		1.7	300	<0.01	
5/07	7.56	7.63	1,000	769	6.2				20	<0.004	<0.0005		0.5	180	<0.01	
6/08	7.73		1,100	621	4.8(J)				31	<0.004	<0.0005		0.4	200	<0.01	
5/09	7.6	7.73	1,230	1,188	<0.0050				22.8	<0.0050	<0.0010		0.50	300	<0.0050	
7/10	7.58	7.93	1,120	818	1.12		1.12		29.0	0.164	<0.0005		0.287	165	0.0121	
7/11	7.10	8.07	1,120	398	1.58		1.58	0.0273	30.6	<0.0025	<0.0010		0.106	218	<0.0050	
7/12	8.00	9.13	1,160	909	2.9		<0.0050	<0.0050	33.8	<0.0050	<0.0010		0.253	205	0.02	
8/13	8.40	7.39	1,020	832	2.8			0.030	30.8	< 0.005			0.276	198		
7/14	7.20		1,230		1.8			0.033	24.0	< 0.005			0.312	215		

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-29D																
5/88	8.6		648		0.31	0.01			9.7			0.18	0.26	139		
6/88	8.1	8.0	590	570	0.25		<0.01		4.2	0.002	<0.0015	0.082	1.16	60.4	<0.0026	<0.005
1/95	7.5	8.9	650	770	0.22		0.03		3.7	<0.004	<0.01	0.09	2.0	33	<0.01	
5/97	7.7	7.9	600	479	0.18		<0.02		3.3	<0.004	<0.0005		2	31	<0.01	
5/98	7.65	7.53	550	560	0.17		<0.01		3.5	<0.004	<0.0005		1.8	28	<0.01	
5/99	7.82	7.60	550	465	0.19		0.19		3.4	<0.004	<0.0005		1.8	28	<0.01	
5/00	7.75	7.66	590	503	0.15		0.15		3.1	<0.004	<0.0005	0.12	1.9	24	<0.01	
5/01	7.55	6.82	570	489	0.15		0.15		3.1	<0.004	<0.0005		1.8	27	<0.01	
5/02	7.56	7.42	540	342	0.13		<0.01		3.6	<0.004	<0.0005		1.7	30.3	<0.01	
5/03	7.64	7.74	590	449	0.13		<0.01		3.6	<0.004	<0.0005		2.0	32	<0.01	
5/04	8.03	7.68	610	682	0.16		0.16		2.4	<0.004	<0.0005		2.0	33	<0.01	
5/05	7.77	7.47	600	530	0.15		0.14		3.9 J	<0.004	<0.0005		2.1	38	<0.01	
5/06	7.78	7.55	680	560	0.23		<0.01		2.4J	<0.004	<0.0005		2.1	39	<0.01	
5/07	7.54	7.58	660	509	0.23		<0.01		3.1	<0.004	<0.0005		2.0	45	<0.01	
6/08	7.56		670	393	0.3		0.086		3.9	<0.004	<0.0005		1.8	51	<0.01	
5/09	7.7	7.51	1010	970	0.21		<0.0050		3.9	<0.0050	<0.0010		2.4	153	<0.0050	
7/10	7.64	8.01	738	553	1.63		1.63		11.4	<0.0005	<0.0005		1.08	123	<0.0050	
7/11	7.47	8.20	647	167	0.483		0.475	0.0282	4.13	<0.0005	<0.0010		1.90	54	<0.0050	
7/12	7.8	9.12	694	572	0.32		<0.0050	0.036	4.0	<0.0050	<0.0010		1.69	46.5	<0.0050	
8/13	8.3	7.32	1180	978	2.0			0.10	6.2	< 0.005			1.83	169		
8/13 (Dup.)	8.3		1190		2.0			0.14	6.6	< 0.005			1.97	180		
7/14	7.5		687		1.2			0.05	8.5	< 0.005			1.53	77.0		
7/14 (Dup.)	8.0		671		1.3			0.035	7.5	< 0.005			1.52	79.2		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-30																
5/86	6.6		342		0.01	<0.01			0.5			<0.01	2.10	20		
6/88	6.3	6.3	340	400	0.01		<0.01		<0.1	0.0018	<0.0015	4.42	0.753	18.7	0.0044	0.005
1/95	6.2	6.0	430	570	0.01		<0.01		<0.1	<0.004	<0.01	0.78	0.60	19	<0.01	
5/97	6.2	6.47	420	334	<0.01				<0.1	<0.004	<0.005		0.6	18	<0.01	0.012
5/98	6.19	5.70	390	418	<0.01				0.10	<0.004	<0.0005		0.68	21	<0.01	0.013
5/99	6.43	6.10	400	390	0.016		0.013		0.19	<0.004	<0.0005		0.71	21	<0.01	0.02
5/00	6.34	5.91	430	380	0.026		0.026		0.12	<0.004	<0.0005	1.5	0.70	21	<0.01	0.017
5/01	6.14	6.21	420	409	0.79		0.79		0.17	<0.004	<0.0005		0.54	19	<0.01	0.015
5/02	6.27	6.27	430	282	0.051		0.05		0.18	<0.004	<0.0005		0.434	31.2	<0.01	0.024
5/03	6.27	6.70	440	342	0.019		<0.01		0.16	<0.004	<0.0005		0.81	23	<0.01	0.028
5/04	6.61	6.27	450	512	<0.01				2.1	<0.004	<0.0005		0.50	25	<0.01	0.0085
5/05	7.16	6.16	470	427	4.5		0.96		3.1 J	<0.004	<0.0005		0.90	37	<0.01	0.012
5/06	6.66	6.13	500	428	<0.01				<2.0B	<0.004	<0.0005		0.51	26	<0.01	0.009
5/07	6.56	6.22	540	435	2.7		<0.01		7.6	0.0057	<0.0005		0.74	53	<0.01	0.016
6/08	6.49		600	339	6.8		1.8		11.0	0.0061	<0.0005		0.76	61	<0.01	0.017
5/09	6.4	6.49	593	518	4.2		<0.0050		12.6	<0.0050	<0.0010		0.62	81.9	<0.0050	0.0096
7/10	6.48	6.97	560	447	1.62		1.62		18.0	0.131	<0.0005		0.332	65.2	0.00758	0.0897
7/11	6.35	7.00	511	146	2.36		2.36	0.0184	7.72	0.00314	<0.0010		0.847	50.8	<0.0050	0.0627
7/11 (Dup.)	6.32		497		1.3		1.29	0.0146	8.87	0.00313	<0.0010		0.904	46.4	<0.0050	0.0584
7/12	6.6	9.19	547	481	3.2		<0.0050	0.3600	6.80	<0.0050	<0.0010		0.437	58.9	<0.0050	0.0356
7/12 (Dup.)	6.4		511		4.7		0.31	0.3400	12.3	<0.0050	<0.0010		0.460	57.7	<0.0050	0.0312
8/13	7.6	6.58	549	447	1.9			0.1500	16.7	0.0085			0.455	72.4		0.0643
7/14	6.4		497		1.6			0.0250	12.0	< 0.005			0.530	59.9		0.0443

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-31																
5/86	9.1		1,250		12	1.5			46			84.5	3.67	380		
6/88	10.2	10.5	3,400	3,500	39		<0.01		140	0.046	<0.0015	20.3	1.93	703	0.184	0.040
2/90	10.0	9.95	2,300	2,700	4.80		3.94		110			49		660		
1/95	9.6	10.4	1,900	1,600	7.1		<0.01		89	0.027	<0.01	4.6	0.66	420	<0.02	
7/96	9.5	9.52	2,300	2,100	12	<0.020			91	0.042	0.0007		0.62		0.04	0.041
5/97	9.9	9.69	2,500	2,100	12		<0.50		110	0.04	0.0007		0.68	480	0.05	0.028
5/97 (Dup.)	9.9	9.69	2,500	2,100	6.2				93	0.038	0.0008		0.74	480	0.05	0.029
5/98	9.63	9.80	2,400	2,350	9.3		<0.01		100	0.036	0.0013		1.1	490	0.04	0.022
9/98	9.67	9.86	2,600	2,520	9.8		<0.01		120	0.044	0.0014		1.1	620	0.045	0.017
9/98 (Dup.)	9.67	9.86	2,700	2,520	9.5		<0.01		130	0.045	0.0013		1.1	600	0.043	0.020
1/99	9.72	9.97	2,500	2,240	22		0.63		120	0.047	0.0012		1.3	620	0.065	0.019
5/99	9.91	10.02	2,600	2,510	29		6.5		130	0.06	0.0014		1.2	600	0.07	0.034
9/99	9.83	10.03	2,600	2,810	30		4.3		150	0.063	0.0011		1.6	750	0.068	<0.005
1/00	9.98	9.80	2,900	2,600	24		6.3		150	0.072	0.001		1.4	650	0.120	0.028
5/00	10.1	10.10	2,900	2,400	21		1.7		140	0.096	0.0011	13	1.6	820	0.12	0.020
10/00	9.99	10.18	2,800	2,550	20		0.54		140	0.056	0.00076		1.1	480	0.079	0.043
1/01	10.1	11.21	2,100	1,900	13		1.5		110	0.056	0.001		1.3	560	0.11	0.020
5/01	9.93	10.85	2,100	1,866	12		12		77	0.046	0.0012		1.4	430	0.081	0.027
9/01	9.95	9.98	2,300	1,877	16		1.2		110	0.054	0.0014		1.4	590	0.09	0.032
1/02	9.96	10.17	2,400	1,720	13		1.6		110	0.0493	0.00116		1.46	406	0.0968	0.017
1/02 (Dup.)	9.97	10.17	2,400	1,720	13		2.8		110	0.0519	0.00148		1.98	400	0.106	0.020
5/02	9.91	9.95	1,900	1,651	14		<0.50		91	0.0628	0.00105		1.0	395	0.0691	0.017
9/02	9.80	10.02	1,520	1,991	11.3		3.55		91	0.056	0.000982		1.21	357	0.0698	0.0234
9/02 (Dup.)	9.79	10.02	2,150	1,991	14.7		2.70		92.6	0.0592	0.00106		1.30	356	0.0694	0.0232
1/03	9.87	9.93	2,090	2,270	13.6		<0.5		99.5	0.0745	0.00181		1.47	472	0.0797	0.0323
1/03 (Dup.)	9.88	9.93	2,140	2,270	14		1.41		102	0.0706	0.00146		1.16	438	0.0664	0.029
5/03	9.69	10.00	1,800	1,310	15		4.1		80	0.038	0.001		0.99	330	0.064	0.022
9/03	9.69	9.81	1,800	1,648	12		7.7		91	0.046	0.001		1.3	410	0.074	0.032
1/04	9.55	9.83	2,300	1,375	12		1.3		85	0.033	0.00084		1.2	360	0.062	0.045
1/04 (Dup.)	9.55	9.83	2,300	1,375	13		1.3		62	0.027	0.00097		1.2	380	0.063	0.043
5/04	9.72	9.85	1,700	1,281	15		1.6		71	0.044	0.0015		1.5	570	0.078	0.025
9/04	9.50	9.81	1,800	1,215	15		<0.01		81	0.044	0.0018		1.6	400	0.087	0.041
9/04 (Dup.)	9.52	9.81	1,800	1,215	15		<0.01		95	0.044	0.0019		1.7	410	0.093	0.043
1/05	9.73	9.79	1,600	1,383	12		1.7		88	0.054	0.0018		1.8	350	0.099	0.034
1/05 (Dup.)	9.76	9.79	1,600	1,383	13		1.8		82	0.054	0.0017		1.8	340	0.096	0.029
5/05	9.65	9.68	1,700	1,519	16		0.21		86 J	0.057	0.0024		2.3	430	0.12	0.036
10/05	9.68	9.78	2,100	1,674	22		3.9		86	0.07	0.0031		3.1	440	0.16	0.038
10/05 (Dup.)	9.68	9.78	1,900	1,674	23		8.6		90	0.066	0.003		3.0	440	0.16	0.039
1/06	9.77	7.64	1,700	1,427	8.3		1.2		70J	0.06	0.0022J		2.3	370	0.12	0.030
1/06 (Dup.)	9.81	7.64	1,700	1,427	7.8		2.5		66J	0.061	0.0038J		2.2	360	0.12	0.028
5/06	9.82	9.98	1,600	1,291	9.7		<0.01		84J	0.05	0.0018		2.2	350	0.1	0.025
9/06	9.82	9.91	1,700	1,417	12		3.4		63	0.045	0.0006		0.6	360	0.048	0.026

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-31 (cont.)																
9/06 (Dup.)	9.82	9.91	1,700	1,417	12		12		55	0.05	0.0013		1	390	0.071	0.027
2/07	9.72		1,600		8.8		1.5		42	0.034	<.0005		0.59	330	0.036	0.046
5/07	9.59	9.56	1,400	1,120	11		0.066		81	0.049	0.0016		1.5	320	0.082	0.083
9/07	9.62	9.93	1,300	1,104	8.6		0.16		62	0.043	0.00089		1.2	310	0.063	0.090
9/07 (Dup.)	9.62		1,400		8.1		<0.010		61	0.044	0.00086		1.2	310	0.064	0.089
3/08	9.52	9.26	1,500	1,022	6.9		<0.010		63	0.047	0.0014		1.6	330	0.077	0.036
6/08	9.61		1,400	999	8.4		<0.01		62	0.05	0.0013		1.8	310	0.082	0.067
9/08	9.57	9.66	1,100	1,299	4.4		<0.01		52	0.041	0.0012		1.2	300	0.069	0.042
1/09	9.5	9.64	1,350	1,341	7.4		7.3		63.4	0.039	<0.0010		0.74	195	0.043	0.038
5/09	9.5	9.74	1,350	1,314	5.1		0.016		50	0.045	<0.0010		1.4	406	0.065	0.030
5/09 (Dup.)	9.5	9.74	1,360	1,314	0.13		<0.0050		49.7	0.043	<0.0010		1.4	407	0.065	0.029
9/09	9.6	9.93	1,430	1,335	7.4		0.10		56.5	0.039	0.0013		0.89	393	0.056	0.040
9/09 (Dup)	9.6		1,480		7.6		0.85		53.6	0.038	0.0013		0.92	409	0.058	0.047
1/10	9.7	9.74	1,280	1,305	5.9		<0.0050		56.3	0.031	<0.0010		1.1	386	0.049	0.032
7/10	9.54	9.83	1,400	1,230	5.8		5.8		48.5	0.147	0.000718		0.909	203	0.0437	0.021
11/10	9.51	9.84	1,340	917	2.08		0.967	0.0609	41.9	0.0256	<0.0005		0.427	187	0.0222	0.025
11/10 (Dup.)	9.49		1,350		4.82		4.82	0.0668	39.7	0.0222	<0.0005		0.465	215	0.0246	0.026
4/11	9.64	10.06	1,110	924	3.46		1.99	0.0675	45.9	0.0428	<0.0010		1.23	263	0.0580	0.041
7/11	9.61	10.03	1,330	578	4.36		4.36	0.0343	47.5	0.0378	<0.0010		1.01	274	0.0509	0.020
11/11	9.54	9.34	1,330	1,290	3.86		1.46	0.0511	41.4	0.0283	<0.0010		0.359	290	0.0337	0.036
11/11 (Dup.)	9.53		1,170		2.77		0.715	0.0428	41.6	0.0277	<0.0010		0.387	297	0.0354	0.029
4/12	9.4	9.60	1,330	1,890	6.3		<0.0050	0.0440	54.4	0.0368	<0.0010		0.729	315	0.0302	0.047
4/12 (Dup.)	9.4		1,320		6		0.0058	0.0330	55.9	0.0344	<0.0010		0.764	312	0.0350	0.049
7/12	9.4	9.54	1,400	1,200	5.6		<0.0050	0.0480	55	0.036	<0.0010		0.970	299	0.0478	0.022
11/12	9.3	[10.82]	1,680	1,240	3.3		<0.0050	0.0450	43.5	0.033	<0.0010		0.668	293	0.0372	0.037
11/12 (Dup.)	9.4		1,680		5.3		0.49	0.0400	43.7	0.035	<0.0010		0.665	288	0.0382	
8/13	9.2	8.85	1,230	1,024	5.9			0.0500	41.2	0.0247			0.430	275		0.0171
7/14	7.6		1,040		2.9			0.046	25.0	0.0201			0.482	255		0.0227

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-32																
5/86	10.5		6430		97	18			369			27.4	0.69	2120		
7/88	9.2	9.3	890	1,040	7.2		0.30		39	0.014	<0.0015	4.05	0.513	234	0.024	<0.005
1/95	9.4	9.4	1,300	630	12		3.6		47	0.014	<0.01	2.7	0.37	230	0.03	
7/96	8.6	8.89	1,000	1,038	6.9	<0.020			29	0.011	<0.0005		0.84		0.01	
5/97	8.7	8.71	930	697	4.4		1.3		19	0.008	<0.0005		1.1	110	<0.01	
5/98	8.03	8.10	630	697	2.5		0.34		7.7	<0.004	<0.0005		1.9	61	<0.01	
5/98 (Dup.)	8.05	8.10	690	697	2.5		0.09		8.0	<0.004	<0.0005		2.0	68	<0.01	
9/98	8.30	8.26	760	760	4.5		1.0		13	<0.004	<0.0005		1.8	78	<0.01	
1/99	8.39	8.00	710	650	3.1		<0.02		13	<0.004	<0.0005		1.7	77	<0.01	
1/99 (Dup.)	8.39	8.00	720	650	3.7		<0.02		13	<0.004	<0.0005		1.7	76	<0.01	
5/99	8.38	8.50	690	555	4.4		0.59		12	<0.004	<0.0005		2.0	78	<0.01	
9/99	9.84	10.01	2,200	2,300	18		1.8		120	0.057	0.0014		2.2	520	0.093	
1/00	8.93	8.28	950	770	4.8		0.57		27	0.017	<0.0005		1.9	97	0.024	
5/00	8.80	8.95	830	858	3.9		<0.01		19	0.013	<0.0005	3.1	1.6	70	<0.01	
10/00	9.75	9.98	1,500	1,227	8.3		0.76		70	0.051	0.00099		1.6	290	0.058	
1/01	8.46	9.24	740	675	4.3		0.82		13	0.004	<0.0005		2.0	95	<0.01	
5/01	8.51	8.84	790	624	4.9		4.9		17	0.0054	<0.0005		2.1	94	0.012	
9/01	8.69	8.74	720	606	4.9		0.53		99	0.0068	<0.0005		1.9	110	0.011	
1/02	8.45	8.69	770	627	4.3		2.4		14	0.0047	<0.0005		1.68	98.1	<0.01	
5/02	8.75	8.72	850	543	6.9		<0.25		28	0.0293	<0.0005		1.83	134	0.0107	
9/02	8.73	9.02	940	889	6.13		0.55		25.4	0.0299	<0.0005		1.80	101	0.0122	
1/03	8.35	7.70	747	788	4.41		0.11		13	0.00403	<0.0005		1.91	93.1	<0.01	
5/03	8.31	8.47	820	616	3.6		<0.01		21	0.010	<0.0005		2.2	82	<0.01	
9/03	8.67	8.88	920	745	5.9		1.4		32	0.013	<0.0005		1.7	130	0.011	
1/04	8.54	8.77	790	588	5.2		2.0		21	0.0082	<0.0005		1.7	99	<0.01	
5/04	9.43	9.76	1,200	872	5.2		0.38		49	0.034	0.00084		1.1	360	0.054	
9/04	9.72	10.03	1,600	1,100	13		<0.01		90	0.091	0.0026		2.6	360	0.16	
1/05	9.96	9.98	1,600	1,372	17		2.1		70	0.1	0.0028		3.8	330	0.17	
5/05	9.98	9.76	1,600	1,474	15		1.0		95 J	0.11	0.0027		4.3	370	0.19	
10/05	9.99	10.05	1,600	1,444	14		1.1		83	0.1	0.0042		4.9	380	0.24	
1/06	9.97	7.68	1,600	1,332	9.4		1.1		52J	0.065	0.003J		3.2	330	0.14	
5/06	9.93	10.16	1,500	1,300	16		1.4		50J	0.049	0.0021		3.3	350	0.11	
9/06	10.03	10.06	1,700	1,395	12		12.0		60	0.059	0.0012		1.5	350	0.1	
2/07	10.03		1,700		9.7		0.3		69	0.059	0.00078		1.8	340	0.095	
5/07	9.93	9.96	1,400	1,211	11		11.0		69	0.063	0.0018		3.1	340	0.12	
9/07	10.00		1,500		6.5		0.0		64	0.060	0.00096		1.9	341	0.1	
9/07 (Dup.)	10.01		1,500		7		0.3		63	0.053	0.00095		1.8	330	0.1	
3/08	9.88	9.75	1,500	973	6.1		<0.01		60	0.054	0.0012		2.4	330	0.1	
3/08 (Dup)	9.88		1,500	1,041	7.3		0.7		55	0.058	0.0013		2.4	330	0.11	
6/08	9.90		1,400	1,041	12		1.6		55	0.047	0.0016		2.6	340	0.097	
9/08	9.86	9.97	1,400	1,514	9.2		<0.01		65	0.048	0.001		1.7	350	0.085	
1/09	9.80	9.94	1,380	1,392	5.9		5.9		70	0.051	0.001		1.7	198	0.085	
5/09	9.70	9.97	1,330	1,305	5.8		0.16		43.6	0.047	<0.0010		1.5	398	0.075	
9/09	9.80	10.15	1,600	1,433	8.0		0.28		66.2	0.045	0.0016		1.7	443	0.085	
1/10	10.00	9.97	1,230	1,290	4.7		<0.0050		61.4	0.037	<0.0010		1.4	358	0.07	
1/10 (Dup.)	9.90		1,420		6.1		<0.0050		62.8	0.036	<0.0005		1.3	360	0.062	
7/10	9.83	10.14	1,260	1,174	6.31		6.31		30.7	0.131	0.000919		1.12	216	0.0561	
11/10	9.90	10.17	1,400	945	3.76		3.24	0.0728	51.8	0.035	0.000837		1.18	212	0.0533	
4/11	9.91	10.26	1,100	849	3.16		1.34	0.0826	40.6	0.033	<0.001		1.11	244	0.0564	
7/11	9.88	10.26	1,210	593	2.74		2.73	0.0841	44.5	0.032	0.00108		1.40	252	0.0599	
11/11	9.88	9.78	1,330	1,310	4.00		1.73	0.0545	49.9	0.028	<0.001		1.30	276	0.0642	
4/12	9.70	9.97	1,220	1,210	4.80		0.41	0.0680	43.6	0.033	<0.001		1.16	288	0.0524	
7/12	9.70	9.77	1,360	1,170	6.00		1.50	<0.0050	48.6	0.028	0.0011		1.28	269	0.0575	
11/12	9.70	[10.81]	1,720	1,320	4.60		<0.0050	0.0380	53.9	0.037	<0.001		1.34	298	0.0574	
8/13	9.70	9.06	1,300	1,112	5.70			0.0350	53.0	0.030			0.748	293		
7/14	9.70		1,340		5.40			1.20	54.6	0.0379			1.380	332		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-34S																
5/86	7.4		668		0.13	<0.01			9.4			0.07	0.42	64		
7/88	7.2	7.2	690	670	40		38		7.3	0.0087	<0.0015	14.6	0.416	33.1	0.018	<0.005
2/90	7.4	6.93	690	740	0.113		0.26		6.5			21		49		
1/95	7.2	7.1	700	430	0.03		<0.01		7.3	<0.004	<0.01	0.18	0.01	35	<0.01	
5/97	7.4	7.43	710	579	0.18		0.04		8.1	<0.004	<0.0005		0.04	69	<0.01	
5/98	NS	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
5/99	7.34	7.55	650	505	0.19		<0.01		6.8	<0.004	<0.0005		0.014	46	<0.01	
5/00	7.60	7.46	740	607	1.1		1.1		11	<0.004	<0.0005	1.2	0.044	83	<0.01	
5/01	7.71	7.34	670	537	0.12		0.12		8.6	0.025	0.0019		2.9	50	0.054	
5/02	7.90	7.98	920	457	0.064		<0.01		49	0.0367	0.00246		2.12	172	0.072	
5/03	7.36	7.63	700	520	0.14		0.012		13	<0.004	<0.0005		0.055	52	<0.01	
5/04	8.08	8.21	950	729	0.38		0.26		41	0.0043	<0.0005		0.068	270	0.01	
5/05	8.63	8.51	1,700	1,673	9.1		0.21		130 J	0.028	0.0038		0.8	520	0.074	
5/06	8.59	8.75	1,600	1,358	6.4		0.47		68J	0.012	0.0021		0.51	380	0.036	
5/07	8.26	8.14	1,100	831	5.8		0.37		32	0.011	0.0007		0.38	250	0.02	
6/08	8.62		1,200	824	2.2		0.18		42	0.012	0.00091		0.24	300	0.018	
5/09	8.00	8.25	982	911	3.1		0.12		21.1	0.011	<0.0010		0.29	269	0.014	
7/10	7.95	8.94	1,390	1,070	3.47		2.19		45.2	0.150	0.00148		0.422	211	0.0185	
7/11	8.24	8.77	943	423	2.10		2.09	0.0611	23.9	0.0112	<0.0010		0.409	198	0.0189	
7/12	8.30	9.27	975	818	4.80		<0.0050	0.0490	23.5	0.0072	<0.0010		0.286	190	0.014	
8/13	8.10	7.8	1,260	1,067	3.90			0.0740	22.6	0.0057			0.279	282		
7/14	8.20		1,280		4.70			0.8300	21.8	< 0.010			0.545	314		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-34D																
5/86	7.3		602		0.05	<0.01			10.2			0.02	0.55	42		
7/88	7.4	7.4	580	580	0.07		<0.01		4.4	0.0031	<0.0015	0.538	0.762	32.4	<0.0026	<0.005
1/95	7.3	7.4	640	400	0.07		0.07		4.2	<0.004	<0.01	<0.04	0.82	34	<0.01	
5/97	7.4	7.43	630	492	0.05		<0.01		3.6	<0.004	<0.0005		0.79	31	<0.01	
5/98	7.37	7.23	590	595	0.09		0.01		3.9	<0.004	<0.0005		0.68	35	<0.01	
5/99	7.40	7.52	470	475	0.082		<0.01		3.6	<0.004	<0.0005		0.72	29	<0.01	
5/00	7.55	7.37	620	519	0.083		0.083		4.2	<0.004	<0.0005	0.14	0.76	28	<0.01	
5/01	8.00	7.16	600	453	0.13		0.13		3.9	<0.004	<0.0005		0.70	30	<0.01	
5/02	7.38	7.37	560	298	0.059		0.022		4.6	<0.004	<0.0005		0.68	32.9	<0.01	
5/03	7.38	7.52	630	470	0.047		<0.01		4.4	0.0041	<0.0005		0.58	31	<0.01	
5/04	7.44	7.35	660	505	0.45		0.37		6.0	<0.004	<0.0005		<0.01	83	<0.01	
5/05	7.83	7.36	1000	853	10		0.14		24 J	<0.004	<0.0005		0.12	190	<0.01	
5/06	7.80	7.77	910	760	7.5		1.8		23J	<0.004	<0.0005		0.26	170	<0.01	
5/07	8.10	7.95	1,000	799	2.6		<0.01		31	0.0066	0.00055		0.34	230	0.018	
6/08	8.13		800	572	4.8		0.64		26	0.012	0.0013		0.52	190	0.038	
5/09	7.70	7.99	829	767	1.4		0.29		17.0	0.0056	<0.0010		0.20	198	<0.0050	
7/10	8.67	8.59	832	656	2.26		1.29		39.9	0.141	0.000829		0.316	123	0.0219	
7/11	8.06	8.61	833	417	9.30		9.30	0.0802	20.4	0.00715	<0.0010		0.336	172	0.0145	
7/12	8.00	9.21	965	814	4.20		<0.0050	0.0802	19.1	<0.0050	<0.0010		0.227	173	0.0065	
8/13	8.00	7.72	838	701	4.60			0.0480	22.0	0.0059			0.214	168		
7/14	8.10		832		3.70			1.00	21.4	0.0087			0.317	190		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	vanadium	PCE
MW-35																
5/86	10.2		6,430		240	38			358			125	1.76	2,070		
7/88	10.2	10.4	6,100	6,150	43		41		400	0.147	0.002	56.5	0.337	1,630	0.053	<0.005
2/90	9.6	9.7	1,500	1,540	8.0		<0.005		71			20		350		
1/95	9.5	9.7	1,200	562	16		<0.01		35	0.018	<0.01	11	0.43	220	<0.01	
7/96	9.5	9.5	1,700	1,851	6.0	0.040			71	0.028	0.0008		0.5		0.03	
5/97	9.4	9.47	1,000	900	16		<1.0		40	0.02	0.0008		0.68	220	0.02	
5/98	8.93	9.10	710	766	15		2.9		27	0.012	<0.0005		0.92	140	0.01	
9/98	8.97	8.90	550	778	16		0.99		26	0.01	<0.0005		0.88	130	<0.01	
1/99	9.28	9.15	820	925	23		2.9		40	0.019	<0.0005		0.81	190	0.016	
5/99	9.35	9.70	830	870	28		10		38	0.013	<0.0005		0.86	160	0.015	
9/99	9.18	9.60	790	930	18		2.0		34	0.012	<0.0005		0.53	170	0.05	
1/00	8.91	8.15	610	500	13		3.3		21	0.0077	<0.0005		0.47	94	0.066	
5/00	9.07	9.24	690	693	27		20		28	0.081	<0.0005	5.2	0.48	69	0.077	
10/00	8.76	8.84	520	470	7.3		0.59		17	0.0076	<0.0005		0.57	81	0.11	
1/01	8.86	9.59	530	549	10		3.1		19	0.008	<0.0005		0.50	89	0.075	
5/01	9.17	9.43	800	790	17		2.6		35	0.013	<0.0005		0.48	130	0.04	
9/01	9.26	9.03	820	749	15		<0.5		41	0.0097	<0.0005		0.46	120	0.062	
1/02	9.24	9.44	650	662	14		2.1		41	0.0106	<0.0005		0.511	129	0.0659	
5/02	9.03	9.21	600	528	24		7.4		27	0.0347	0.000537		0.576	172	0.0365	
9/02	8.60	9.33	542	733	8.96		1.21		17.5	0.0254	<0.0005		0.435	70.3	0.0259	
1/03	8.85	8.94	579	621	10.8		<0.5		23.6	0.00733	<0.0005		0.449	72.4	0.0255	
5/03	8.87	9.05	660	466	6.6		<0.01		31	0.0099	<0.0005		0.52	76	0.025	
9/03	8.46	8.57	540	437	6.4		1.1		23	0.0098	<0.0005		0.52	53	0.016	
1/04	8.12	8.32	480	335	5.5		2.4		15	0.0046	<0.0005		0.68	49	0.015	
5/04	8.50	8.60	550	401	6.6		<0.01		22	0.011	<0.0005		0.63	120	0.017	
9/04	8.04	8.20	430	305	5.5		2.9		7.5	0.0096	<0.0005		0.61	48	<0.01	
1/05	8.66	8.65	540	529	12		2.3		18	0.011	<0.0005		0.72	76	0.011	
5/05	8.45	8.08	480	467	7.9		4.1		15 J	0.012	<0.0005		0.86	75	0.014	
10/05	8.54	8.62	610	514	15		2.4		33	0.011	<0.0005		0.88	81	0.015	
1/06	8.18	7.25	530	453	7.9		1.6		12J	0.0096	<0.0005		0.92	62	0.01	
5/06	9.51	9.78	1,300	1,222	16		<0.01		90J	0.028	0.0008		0.71	230	0.028	
9/06	9.16	8.78	860	568	32		32.00		27	0.013	<0.0005		0.82	100	0.015	
2/07	9.49		1,200		22		<.01		45	0.014	<.0005		0.61	120	<.01	
5/07	8.81	7.79	700	369	22		0.86		22	0.027	0.00059		0.74	160	0.023	
9/07	9.18	9.39	800	592	14		<0.010		32	0.016	<0.00050		0.79	150	<0.010	
3/08	8.97	8.74	760	485	21		0.56		23	0.017	<0.0005		1.10	130	0.021	
6/08	8.37		540	381	15		0.45		15	0.013	0.00061		1.20	86	0.013	
9/08	8.54	8.56	530	589	17		1.50		15	0.013	<0.0005		0.86	92	<0.01	
1/09	8.70	8.76	635	615	19.3		19.30		24	0.016	<0.0010		1.10	72.1	0.012	
5/09	7.80	7.89	520	481	12.25		<0.0050		10.7	0.011	<0.0010		1.10	88.4	0.0076	
9/09	7.60	7.67	402	354	3.9		0.13		3.3	0.0092	<0.0010		0.93	52.0	0.0052	
1/10	7.70	7.68	409	392	5.6		<0.0050		7.0	0.012	<0.0010		0.99	79.5	0.0097	
7/10	7.55	7.36	368	276	2.12		1.34		2.95	0.108	<0.0005		0.704	26.8	0.00866	
11/10	7.33	7.84	372	286	2.56		2.56	0.0108	3.45	0.0114	<0.0005		0.564	36.2	<0.005	
4/11	7.86	8.46	420	350	4.89		3.04	0.0923	8.65	0.0073	<0.001		0.835	58.9	0.00581	
7/11	7.27	7.90	317	129	0.908		0.904	0.0100	1.14	0.00417	<0.0010		0.792	21.0	<0.0050	
11/11	7.39	7.60	382	340	3.16		1.070	0.0123	3.83	0.00492	<0.0010		0.874	37.8	0.00634	
4/12	7.60	7.55	470	463	6.9		0.720	0.27	7.90	0.0141	<0.0010		0.738	73.9	<0.005	
7/12	7.50	9.08	441	411	2.2		0.640	0.26	4.60	<0.0050	<0.0010		0.789	51.3	0.0089	
11/12	7.60	8.52	479	356	2.7		<0.0050	0.07	4.90	0.0109	<0.0010		0.80	40.6	<0.005	
8/13	7.60	7.99	402	361	4.2			0.12	5.50	0.0061			0.643	48.8		
7/14	7.60		382		3.7			0.74	3.90	< 0.005			0.916	40.6		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-36																
5/86	9.7		2,700		25	1.4			97			39.5	1.13	760		
7/88	8.9	9.6	940	1,255	8.6		1.3		18	0.0078	<0.0015	3.52	0.332	161	0.0063	<0.005
1/95	9.8	9.7	3,500	1,350	18		<0.01		160	0.034	<0.01	8.7	0.83	770	0.07	
7/96	9.6	9.55	3,300	3,280	8.1	<0.020			160	0.058	0.0021		0.67		0.07	
5/97	9.8	9.64	3,600	3,290	9.2		3.5		180	0.064	0.0035		1.7	850	0.1	
5/98	NS	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
9/98	9.90	10.10	4,500	4,380	6.5		0.03		230	0.11	0.0036		1.4	990	0.074	
1/99	9.76	10.20	3,500	3,300	41		1.2		190	0.076	0.0036		1.5	820	0.072	
5/99	10.10	10.40	2,500	2,260	19		4.4		150	0.12	0.0019		1.3	600	0.12	
9/99	10.10	10.10	1,800	1,790	6.2		0.69		93	0.059	0.00055		1.2	420	0.067	
9/99 (Dup.)	10.10	10.10	1,800	1,790	6.3		<0.5		96	0.061	0.00062		1.2	450	0.07	
1/00	10.2	9.80	1,600	1,450	3.9		0.51		80	0.072	<0.0005		0.70	290	0.062	
5/00	10.2	10.42	1,200	1,272	1.6		<0.01		50	0.03	<0.0005	4.0	0.54	150	0.03	
10/00	9.84	10.05	1,200	1,043	4.9		<0.01		41	0.024	0.00061		1.6	210	0.033	
1/01	9.79	11.00	1,700	1,567	12		2.0		89	0.027	0.0018		1.4	450	0.049	
5/01	9.87	10.28	1,100	1,109	3.0		3.0		49	0.029	0.00054		0.68	220	0.045	
9/01	9.80	9.75	1,100	960	2.7		<0.25		44	0.018	0.00053		0.59	210	0.026	
1/02	9.57	9.83	1,800	1,691	14		<0.01		120	0.0209	0.00205		1.0	310	0.0413	
5/02	9.61	9.61	1,800	1,286	16		4.6		98	0.0336	0.0018		1.15	381	0.0216	
9/02	9.55	9.80	1,400	1,304	4.14		<0.01		52	0.0217	0.000709		1.07	219	<0.01	
1/03	9.65	9.65	2,120	2,130	23.7		1.35		119	0.0711	0.0033		1.37	446	0.0791	
5/03	9.51	9.80	2,000	1,422	9.3		<0.01		120	0.049	0.0027		1.7	380	0.091	
9/03	9.50	9.56	1,500	1,252	6.2		0.74		110	0.046	<0.0005		0.75	290	0.038	
1/04	9.54	9.79	2,000	1,350	9.5		2.7		93	0.048	0.0013		0.81	350	0.077	
5/04	9.39	9.64	2,000	1,393	13		<0.01		120	0.043	0.0022		0.96	610	0.05	
9/04	9.63	9.82	1,000	701	4.9		2.3		52	0.047	0.00077		0.56	220	0.05	
1/05	9.69	9.61	860	750	3.4		0.69		33	0.026	0.00066		0.44	170	0.03	
5/05	9.66	9.44	800	774	1.8		0.53		30 J	0.02	0.0007		0.41	180	0.029	
10/05	9.44	9.50	1,000	764	12		2.3		28	0.02	<0.0005		0.26	180	0.02	
1/06	9.32	7.52	1,100	970	12		4.4		36J	0.02	0.0018		0.81	230	0.058	
5/06	9.17	9.31	1,000	878	3.8		0.15		38J	0.0068	<0.0005		0.41	220	0.016	
9/06	9.32	9.25	870	737	9.7		9.6		22	0.0059	<0.0005		0.026	170	<0.010	
2/07	9.07		940		12		<.01		22	<.004	<.0005		0.082	180	<.01	
5/07	8.9	8.8	790	666	10		0.86		32	0.0071	<0.0005		0.18	180	<0.01	
9/07	9.07		560		0.55		<0.010		20	0.0085	<0.00050		0.16	120	0.013	
3/08	8.63	8.4	850	543	7.8		<0.01		18	<0.004	<0.0005		0.2	170	<0.01	
6/08	8.56		710	516	2.1		<0.01		33	0.0057	<0.0005		0.22	160	<0.01	
9/08	8.69		640		4.6		0.14(J)		17	0.0044	<0.0005		0.094	120	<0.01	
9/08 (Dup.)	8.58	8.68	640	724	4.4		2.1(J)		19	0.0072	<0.0005		0.1	150	<0.01	
1/09	8.4		625		3.3		3.3		19	0.0059	<0.0010		0.16	75.8	<0.0050	
1/09 (Dup.)	8.4	8.44	629	622	<0.0050				20.4	0.0053	<0.0010		0.15	75.5	<0.0050	
5/09	8.3	8.57	699	677	13.5		0.10		26.2	<0.0050	<0.0010		0.20	163	<0.0050	
9/09	8.6	8.81	908	792	1.2		0.021		21.8	0.0057	<0.0010		0.18	199	0.0064	
1/10	8.5	8.69	877	761	10.8		1.6		28.9	0.0064	<0.0010		0.21	181	<0.0050	
7/10	8.75	8.98	597	487	1.04		0.486		17	0.107	<0.0005		0.0962	92.4	0.0085	
7/10 (Dup.)	8.77	8.98	600	487	1.05		0.434		19	0.114	<0.0005		0.090	88.6	0.00737	
11/10	8.43	8.7	741	507	1.21		1.210	0.0225	14.3	0.00454	<0.0005		0.159	140	<0.005	
4/11	8.60	8.91	446	334	0.986		0.337	0.0358	18.8	0.00224	<0.0010		0.177	88.7	0.00522	
4/11 (Dup.)	8.55		446		0.871		0.330	0.1010	18.0	0.00283	<0.0010		0.185	89.9	<0.0050	
7/11	8.49	9.04	560	162	0.863		0.858	0.0152	16.4	0.00319	<0.0010		0.157	104	<0.0050	
11/11	8.37	8.32	650	644	0.657		0.217	0.0182	15.4	<0.00250	<0.0010		0.158	121	0.00790	
4/12	8.30	8.39	557	529	2.6		0.160	0.110	18.4	<0.0050	<0.0010		0.199	101	<0.0050	
7/12	8.40	9.34	613	590	0.66		<0.0050	0.130	15.6	<0.0050	<0.0010		0.173	98.7	<0.0050	
11/12	8.30	9.46	917	6.91	1.2		0.640	0.069	15.2	<0.0050	<0.0010		0.218	117	<0.0050	
8/13	8.30	7.65	733	728	1.9			0.079	17.5	< 0.005			0.257	122		
7/14	8.40		666		1.1			0.062	19.7	< 0.005			0.223	126		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Cadmium	PCE
MW-37																
5/86	10.1		7,340		97	8.2			890			498	46.3	1,800		
7/88	9.9	9.8	5,600	5,500	0.30		<0.01		1000	0.169	0.035	115	15.4	1,470	0.369	<0.005
2/90	9.6	9.65	2,700	3,100	4.6		22.7		360			1000		970		
1/95	9.1	9.2	1,200	970	18		<0.01		87	0.033	<0.01	6.5	0.58	280	0.01	
7/96	9.1	8.89	570	832	14	<0.020			45	0.042	0.0005		0.51		0.03	
5/97	9.2	9.07	1,100	846	13		1.7		53	0.027	<0.0005		0.56	210	0.02	
5/98	8.57	8.30	530	505	6.4		<0.01		6.8	0.018	<0.0005		0.28	120	0.02	
9/98	8.90	8.26	670	682	15		5.5		52	0.020	<0.0005		0.53	140	0.017	
1/99	9.02	9.25	660	750	19		<0.10		25	0.02	<0.0005		0.68	140	0.029	
5/99	9.39	9.45	610	540	11		3.6		22	0.023	<0.0005		0.23	130	0.016	
9/99	8.78	8.91	760	753	7.9		0.91		31	0.01	<0.0005		0.33	170	<0.01	
1/00	8.83	8.40	880	822	10		2.2		32	0.011	<0.0005		0.49	110	<0.01	
5/00	8.51	8.89	770	765	5.2		0.93		32	0.015	<0.0005	9.0	0.72	92	<0.01	
10/00	8.39	8.46	750	630	6.6		<0.01		17	0.0089	<0.0005		0.61	79	<0.01	
1/01	8.42	8.99	780	678	8.8		2.7		29	0.02	0.00068		1.5	160	0.035	
5/01	7.89	7.97	650	528	7.9		<0.01		10	0.018	0.00075		2.0	110	0.026	
9/01	7.84	7.54	680	590	5.6		<0.5		21	0.0042	<0.0005		3.0	110	0.011	
1/02	7.83	8.06	700	570	5.9		0.58		20	0.014	0.00113		3.12	129	0.0355	
5/02	8.15	8.05	610	406	5.0		<0.20		18	0.139	0.0169		14.8	141	0.273	
9/02	7.87	7.59	679	601	5.09		0.65		16.7	<0.004	<0.0005		<0.005	0.975	<0.01	
1/03	7.63	7.89	569	608	5.52		0.83		14.4	<0.004	<0.0005		2.48	107	<0.01	
5/03	7.25	7.50	440	342	6.3		0.093		9.8	0.0061	<0.0005		4.2	53	0.014	
9/03	6.89	7.31	520	444	2.4		0.093		14	0.01	0.0005		4.8	83	0.028	
1/04	7.06	7.34	570	422	1.7		0.72		17	<0.004	<0.0005		3.2	82	0.012	
5/04	7.34	7.01	460	365	2.5		0.66		14	0.0055	<0.0005		2.8	110	0.012	
9/04	6.58	6.60	520	367	4.1		2.0		8.8	0.0055	<0.0005		2.1	85	<0.01	
1/05	6.90	6.39	420	370	2.6		1.0		8.7	<0.004	<0.0005		1.9	59	<0.01	
5/05	6.92	6.51	420	374	3.0		0.068		9.5 J	0.012	0.0016		1.7	72	0.045	
10/05	6.82	6.60	630	512	5.8		0.58		17	0.013	0.0014		0.88	100	0.042	
1/06	7.96	7.14	550	463	7.7		2.8		6.3J	0.018	0.0015J		1.6	80	0.043	
5/06	7.00	6.56	570	476	4.0		0.9		6.4J	0.0088	0.00081		0.56	94	0.025	
9/06	6.91	6.53	490	414	2.4		2.4		7.3	<0.004	0.0005		0.60	74	<0.010	
2/07	7.22		500		2.1		<.01		12	0.0090	0.00085		1.70	54	0.03	
5/07	6.85	6.24	310	275	0.9		0.0		3.9	0.0087	<0.0005		0.19	40	0.011	
9/07	7.09	6.88	310	267	1.6		0.2		3.9	<0.0040	<0.00050		0.22	46	0.012	
3/08	6.46	5.93	310	237	<0.05				3.6	<0.004	<0.0005		0.08	47	<0.01	
6/08	6.34		260	183	0.9		0.2		3.4	0.0085	0.00073		0.20	37	0.015	
9/08	6.45	6.60	240	275	0.7		<0.01		3.5	<0.004	<0.0005		0.05	33	<0.01	
1/09	6.30	6.47	332	343	0.7		0.7		4.1	<0.0050	<0.0010		0.05	43.8	<0.0050	
5/09	6.30	6.46	337	327	7.1		0.27		3.3	<0.0050	<0.0010		0.21	53.8	0.0084	
9/09	6.40	6.54	361	307	0.37		0.31		2.8	<0.0050	<0.0010		0.11	55.3	0.012	
1/10	6.60	7.16	398	365	0.098		<0.0050		5.0	0.015	0.0012		0.66	62.3	0.040	
7/10	6.43	6.73	271	235	0.114		0.112		2.75	0.128	0.000595		0.166	24.9	0.0162	
11/10	6.22	7.47	279	185	0.257		0.257	0.0138	2.83	0.00559	0.000564		0.127	22.9	0.0131	
4/11	6.66	7.26	309	185	0.369		0.122	0.0058	3.87	0.00444	0.00105		0.262	39.2	0.0229	
7/11	6.32	7.12	252	100	1.84		1.84	0.0121	3.07	0.0112	0.00144		0.410	31.7	0.0403	
11/11	6.15	6.76	294	280	0.22		0.0797	0.0105	4.19	<0.00250	<0.0010		0.097	34.3	0.0097	
4/12	6.20	6.05	277	266	0.19		0.0370	0.0110	3.00	<0.0050	<0.0010		0.006	34.5	<0.0050	
7/12	6.10	8.57	283	278	<0.25		0.0100	0.0690	2.30	<0.0050	<0.0010		0.031	32.6	<0.0050	
11/12	6.40	7.07	364	304	0.22		0.0260	<0.0050	3.20	<0.0050	<0.0010		0.025	38.2	<0.0050	
8/13	6.20	6.60	269	217	0.13			< 0.005	2.70	< 0.005			< 0.005	29.5		
7/14	6.00		314		0.13			0.12	1.90	< 0.005			0.0639	33.5		
7/14(Dup.)	6.10		314		0.14			0.10	1.90	< 0.005			0.0536	34.8		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-39S																
5/86	9.5		8,360		11	2.9			244			25.0	1.35	2780		
6/88	9.3	9.1	3,500	2,550	3.8		0.10		110	0.016	<0.0015	36.6	1.63	826	0.053	<0.005
1/95	8.9	8.7	2,700	900	0.64		<0.01		59	<0.004	<0.01	0.36	0.22	520	<0.01	
5/97	8.9	9.2	5,500	5,500	3.6		<0.2		150	0.009	<0.0005		0.15	1300	<0.01	
5/98	9.04	9.09	4,000	4,000	2.3		<0.01		98	0.009	<0.0005		0.11	700	<0.01	
5/99	9.05	9.30	4,300	3,620	3.4		0.24		120	0.0096	<0.0005		0.12	950	<0.01	
5/99 (Dup.)	9.05	9.30	4,200	3,620	3.6		0.89		120	0.009	<0.0005		0.11	1,100	<0.01	
5/00	9.18	9.19	4,500	3,870	3.5		3.5		110	0.013	<0.0005	2.3	0.097	1,100	<0.01	
5/01	8.91	9.38	3,700	2,820	2.0		0.86		97	0.011	<0.005		0.22	880	0.015	
5/02	9.06	9.01	4,200	2,420	4.6		0.55		130	0.0311	0.000659		0.289	1,070	0.0244	
5/03	8.95	9.20	3,800	4,120	3.1		<0.01		140	0.012	<0.0005		0.15	800	0.013	
5/04	9.28	9.46	3,400	5,040	8.5		0.78		150	0.016	<0.0005		0.19	2,000	0.015	
5/05	9.24	9.14	4,800	4,440	7.9		0.025		190 J	0.014	<0.0005		0.15	1,200	<0.01	
5/06	8.96	9.24	4,400	3,530	7.2		2.4		130J	0.011	<0.0005		0.21	940	0.017	
5/07	9.08	9.22	4,000	3,380	5.7		0.089		180	0.012	<0.0005		0.11	950	<0.01	
9/07	9.12	9.55	3,300	2,810	3.2		<0.010		120	0.015	<0.00050		0.16	750	0.01	
3/08	9.03	8.93	3,300	1,881	3.1		<0.01		93	0.013	<0.0005		0.14	830	0.01	
3/08 (Dup)	9.03		3,400		3.9		<0.01		100	0.013	<0.0005		0.15	830	0.01	
6/08	9.06		3,700	1,211	5.7		0.820		140	0.013	<0.0005		0.11	860	<0.01	
9/08	9.08	9.19	3,400	4,120	5.4		<0.01		150	0.014	<0.0005		0.094	960	<0.01	
1/09	8.9	9.04	3,300	3,510	4.0		4		162	0.014	<0.0010		0.083	585	0.0051	
5/09	8.9	9.13	2,980	3,840	3.6		0.11		115	0.016	<0.0010		0.12	1,200	0.0094	
9/09	9.0	9.38	3,050	3,030	3.5		<0.0050		109	0.011	<0.0010		0.13	982	0.013	
1/10	9.1	9.22	3,440	3,050	3.6		0.99		127	0.015	<0.0010		0.14	918	0.011	
7/10	9.0	9.38	3,160	3,460	3.18		3.18		106	0.00873	<0.0005		0.0795	641	0.0117	
11/10	9.06	9.38	3,160	1,675	3.09		3.09	0.0406	153	0.00922	<0.0005		0.0748	540	<0.005	
4/11	9.02	9.49	2,670	1,650	1.74		0.801	0.0687	98	0.0114	<0.001		0.196	751	0.0188	
7/11	8.96	9.48	3,680	1,062	6.67		0.284	0.0866	123	0.0106	<0.0010		0.107	912	0.00898	
7/11 (Dup.)	8.96		3,680		7.58		8.31	0.0818	105	0.0111	<0.0010		0.106	873	0.00821	
11/11	9.13	9.10	3,610	4,010	3.93		0.477	0.0518	142	0.0116	<0.0010		0.0807	950	0.0183	
4/12	9.00	9.20	3,780	4,080	5.4		0.18	0.0687	156	0.0144	<0.0010		0.0837	976	0.0072	
7/12	9.10	9.65	3,730	3,730	5.1		0.26	0.0530	173	0.0126	<0.0010		0.0945	976	0.0089	
11/12	8.90	[10.52]	3,710	2,950	4.2		<0.0050	0.0290	110	0.0124	<0.0010		0.134	702	0.0106	
8/13	9.00	8.56	3,110	2,568	3.1			0.0310	119	0.0095			0.0864	746		
7/14	8.90		3,440		3.1			1.10	131	0.0182			0.0904	921		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-39D																
5/86	8.1		627		0.21	0.02			7.4			0.14	0.54	103		
6/88	7.9	7.8	590	595	0.17		0.03		6.1	0.0021	<0.0015	0.36	0.681	53.9	<0.0026	<0.005
1/95	7.5	7.6	630	410	0.07		<0.01		3.9	<0.004	<0.01	0.06	0.87	36	<0.01	
5/97	7.5	7.66	630	457	0.06		0.06		3.8	<0.004	<0.0005		0.87	32	<0.01	
5/98	7.52	7.35	590	560	0.04		<0.01		3.6	<0.004	<0.0005		0.77	34	<0.01	
5/99	7.59	7.64	540	447	0.037		<0.01		3.4	<0.004	<0.0005		0.87	33	<0.01	
5/00	7.68	7.60	580	503	0.027		0.027		3.2	<0.004	<0.0005	0.13	0.90	29	<0.01	
5/01	7.50	7.83	550	423	0.024		0.024		3.1	<0.004	<0.0005		0.78	32	<0.01	
5/02	7.61	7.56	510	301	0.026		<0.01		3.7	<0.004	<0.0005		0.785	32.3	<0.01	
5/03	7.60	7.78	580	430	0.033		<0.01		4.0	<0.004	<0.0005		0.93	33	<0.01	
5/04	7.57	7.66	590	649	0.024		0.024		4.2	<0.004	<0.0005		1.0	33	<0.01	
5/05	7.63	7.25	2,600	2,510	4.2		0.017		15 J	<0.004	<0.0005		2.6	650	<0.01	
5/06	7.63	7.62	860	720	0.32		<0.01		9.0J	<0.004	<0.0005		0.94	110	<0.01	
5/07	7.42	7.27	1,200	829	0.74		0.012		4.3	<0.004	<0.0005		1.90	150	<0.01	
6/08	7.42		2,400	338	3.7		0.28		12	<0.004	<0.0005		2	520	<0.01	
5/09	7.4	7.65	1,350	1,120	1.1		<0.0050		6.5	<0.0050	<0.0010		1.1	230	<0.0050	
7/10	7.45	7.92	1,410	1,033	1.06		1.06		14	0.000605	<0.0005		0.888	282	<0.0050	
7/11	7.44	8.07	1,970	472	1.19		1.19	0.0379	14	<0.00250	<0.0010		1.35	440	<0.0050	
7/12	7.6	9.00	2,420	2,370	3.5		0.094	0.130	17.2	<0.0050	<0.0010		1.07	553	<0.0050	
8/13	8.4	7.51	2,760	2,228	3.4			0.079	27.2	< 0.005			1.18	605		
7/14	7.9		2,010		3.2			2.8	17.8	< 0.005			1.19	480		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-40S																
5/88	8.9		2,550		1.7	0.03			28			12.8	0.49	650		
6/88	9.2	9.2	2,100	2,200	1.5		<0.01		5.9	0.018	<0.0015	1.89	0.139	445	0.0056	<0.005
1/95	7.9	7.9	2,500	1,600	0.87		<0.01		40	<0.004	<0.01	0.36	0.33	470	<0.01	
5/97	7.9	8.07	1,900	1,417	0.72		0.40		21	<0.004	<0.0005		0.66	380	<0.01	
5/98	8.2	8.18	1,400	1,335	0.36		<0.01		39	<0.004	<0.0005		0.13	270	<0.01	
5/99	8.50	8.83	1,300	1,100	0.32		<0.01		30	<0.004	<0.0005		0.11	250	<0.01	
5/00	8.08	8.04	1,100	900	0.25		0.25		14	<0.004	<0.0005	0.19	0.42	110	<0.01	
5/01	8.10	7.81	950	693	0.25		0.25		13	<0.004	<0.0005		0.57	140	<0.01	
5/02	7.89	7.91	720	543	0.20		0.17		14	<0.004	<0.0005		0.0577	147	<0.01	
5/03	7.85	7.98	1,400	1,042	0.58		0.02		21	<0.004	<0.0005		0.64	200	<0.01	
5/04	7.86	7.83	1,200	855	0.81		0.017		9.2	<0.004	<0.0005		0.84	220	<0.01	
5/05	7.76	7.51	980	804	0.24		<0.01		7.3 J	<0.004	<0.0005		1.1	160	<0.01	
5/06	7.95	7.82	1,000	831	10		2.9		21J	<0.004	<0.0005		0.4	170	<0.01	
5/07	7.95	8.01	1,100	823	7		<0.01		44	0.0074	0.00066		0.57	230	0.016	
6/08	8.15		1,100	655	7.1		1		58	0.0072	0.00097		0.64	220	0.026	
5/09	8.0	8.26	1,020	1002	8.9		0.019		37.5	<0.0050	0.0012		0.65	280	0.029	
7/10	8.16	8.42	993	761	2.27		2.27		38.4	0.133	0.000766		0.495	175	0.0234	
7/11	8.06	8.53	1,000	537	2.66		2.68	0.0286	33..1	0.00447	<0.0010		0.482	215	0.0175	
7/12	8.00	9.37	998	973	6.2		0.87	0.014	38	<0.0050	<0.0010		0.466	213	0.0181	
8/13	8.40	7.89	973	611	4.4			0.082	38.2	< 0.005			0.318	202		
7/14	8.10		1,050		2.5			0.030	21.4	< 0.005			0.555	243		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-40D																
5/86	9.4		1,120		7.4	0.06			20			11.7	0.62	280		
6/88	9.4	9.4	1,200	1,290	7.0		<0.01		36	0.018	<0.0015	7.81	0.454	258	0.012	<0.005
1/95	7.6	7.7	2,000	1,375	0.70		<0.01		16	<0.004	<0.01	0.29	0.74	340	<0.01	
5/97	7.6	7.9	1,800	1,350	0.59		<0.1		7.6	<0.004	<0.0005		1.3	340	<0.01	
5/98	7.85	7.73	1,300	1,250	0.49		0.47		19	<0.004	<0.0005		0.36	250	<0.01	
5/99	7.99	8.25	920	745	0.16		0.16		12	<0.004	<0.0005		0.42	150	<0.01	
5/00	7.88	7.84	980	810	0.25		0.25		11	<0.004	<0.0005	0.16	0.69	97	<0.01	
5/01	8.01	7.45	790	611	0.15		0.15		8.6	<0.004	<0.0005		0.90	78	<0.01	
5/02	7.68	7.73	600	450	0.10		<0.01		7.7	<0.004	<0.0005		1.14	79.4	<0.01	
5/03	7.65	7.9	1,000	739	0.13		<0.01		9.6	<0.004	<0.0005		1.2	86	<0.01	
5/04	7.69	7.79	820	595	0.11		0.012		11	<0.004	<0.0005		0.9	120	<0.01	
5/05	7.89	7.56	1,000	849	0.68		0.034		4.9 J	<0.004	<0.0005		0.73	140	<0.01	
5/06	7.91	7.82	1,100	915	6.6		0.15		11J	<0.004	<0.0005		0.98	180	<0.01	
5/07	7.76	7.76	1,000	738	4.1		<0.01		17	<0.004	<0.0005		0.94	180	<0.01	
6/08	7.88		990	579	6.8(J)		0.47		29	0.0045	<0.0005		0.77	180	<0.01	
5/09	7.70	8.00	975	984	7.8		<0.0050		19.8	<0.0050	<0.0010		0.82	225	0.0061	
7/10	8.00	8.34	954	753	5.38		5.38		36.2	0.117	0.000581		0.467	158	0.0158	
7/11	7.99	8.41	907	497	3.47		3.47	0.0372	24.1	0.003	<0.0010		0.516	178	0.00841	
7/12	7.80	9.33	882	919	7.90		2.4	0.054	28	<0.0050	<0.0010		0.594	187	0.0123	
7/12 (Dup.)	8.00		922		6.50		<0.0050	0.085	28.6	<0.0050	<0.0010		0.589	187	0.0115	
8/13	8.40	7.95	912	757	7.20			0.062	38.2	< 0.005			0.309	192		
7/14	7.80		924		5.10			0.038	36.0	0.0078			0.558	210		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-41																
1/95	6.6	8.2	490	600	0.04		0.02		0.2	0.017	<0.01	8.9	1.3	22	<0.01	
5/97	6.8	6.98	490	357	<0.01				0.20	0.022	<0.0005		1.6	21	<0.01	
5/98	6.67	6.74	420	449	<0.01				0.30	0.016	<0.0005		1.3	21	<0.01	
5/99	6.79	6.80	420	370	<0.01				0.33	0.014	<0.0005		1.1	20	<0.01	
5/00	6.79	6.98	430	424	<0.01				0.25	0.016	<0.0005	9.2	1.1	17	<0.01	
5/01	6.70	7.00	450	421	<0.01				0.34	0.015	<0.0005		1.0	19	<0.01	
5/02	7.01	7.10	430	377	<0.01				0.24	0.0135	<0.0005		0.938	22.9	<0.01	
5/03	6.87	6.83	460	372	<0.01				0.28	0.016	<0.0005		1.1	23	<0.01	
5/04	6.85	6.85	450	361	<0.01				0.45	0.017	<0.0005		1.1	28	<0.01	
5/07	6.79	6.89	430	339	<0.01				0.23	0.015	<0.0005		1.3	22	<0.01	

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUNDWATER MONITORING WELLS AND PARAMETERS
FORMER ORMET CORPORATION SUPERFUND SITE
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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-42S																
6/88	8.0	8.4	930	870	0.70		0.25		14.0	0.002	<0.0015	0.232	0.237	143	0.0027	<0.005
2/90	8.4	8.25	2,100	2,400	0.266		0.079		35.0			0.88		520		
1/95	8.2	8.4	1,600	765	0.45		<0.01		22	<0.004	<0.01	0.2	0.35	280	<0.01	
5/97	8.2	8.57	1,700	1,350	0.56		<0.02		29	<0.004	<0.0005		0.33	300	<0.01	
5/98	8.26	8.46	1,400	1,460	0.52		<0.01		27	<0.004	<0.0005		0.37	270	<0.01	
5/99	8.19	8.54	1,500	1,100	0.54		0.033		28	<0.004	<0.0005		0.49	260	<0.01	
5/00	8.19	8.18	1,900	1,530	0.66		0.66		28	<0.004	<0.0005	0.39	0.65	280	<0.01	
5/01	8.03	8.03	1,700	1,208	0.51		0.062		23	<0.004	<0.0005		0.84	300	<0.01	
5/02	8.20	8.15	1,900	859	0.52		<0.02		37	<0.004	<0.0005		0.603	475	<0.01	
5/03	8.25	7.32	2,300	1,721	0.94		0.14		51	<0.004	<0.0005		0.41	430	<0.01	
5/04	8.29	8.37	4,500	4,040	3.1		<0.01		74	0.0068	<0.0005		0.38	1,500	<0.01	
5/05	8.30	8.10	2,700	3,110	4.0		0.068		69 J	<0.004	<0.0005		1.2	580	<0.01	
5/06	8.58	7.80	4,400	1,737	3.8		0.13		100J	0.0085	<0.0005		0.23	930	<0.01	
5/07	8.36	8.49	2,600	1,601	1.8		<0.01		39	<0.004	<0.0005		0.2	560	<0.01	
6/08	7.97		2,900	1,224	2.3		0.22		37	<0.004	<0.0005		0.37	570	<0.01	
5/09	7.90	8.10	3,280	3,380	[7.9]		[0.033]		60.1	0.0053	<0.0010		0.25	1,010	<0.0050	
7/09		8.45		2,630	3.1		<0.005									
7/10	8.06	8.07	2,520	1,446	1.39		0.701		36.4	0.115	<0.0005		0.215	391	<0.0050	
7/11	8.01	8.62	2,100	522	1.51		1.51	0.0309	34.1	0.00309	<0.0010		0.334	454	<0.0050	
7/12	8.00	9.13	2,760	2,740	3.10		0.88	0.160	48.2	<0.0050	<0.0010		0.354	641	<0.0050	
8/13	7.80	7.67	2,520	2,046	2.20			0.034	35.0	< 0.005			0.248	489		
7/14	5.90		2,490		1.60			0.089	20.9	<.0.005			0.500	452		

Note: All results in mg/L unless otherwise noted.

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TABLE 2
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GROUNDWATER MONITORING WELLS AND PARAMETERS
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HANNIBAL, OHIO

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	pH (lab)	pH (field)	Specific Cond (lab)	Specific Cond (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	WAD Cyanide	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
MW-42D																
6/88	7.9	8.1	550	600	0.16		<0.01		6.0	0.0028	<0.0015	1.11	0.636	68.6	0.0028	<0.005
1/95	7.5	7.7	640	410	0.04		<0.01		3.6	<0.004	<0.01	0.08	1.5	31	<0.01	
5/97	7.6	7.99	580	468	0.04		<0.01		3.2	<0.004	<0.0005		1.3	27	<0.01	
5/98	7.54	7.64	550	535	0.07		0.01		3.3	<0.008	<0.0005		1.2	26	<0.01	
5/99	7.56	7.83	530	435	0.03		<0.01		3.4	<0.004	<0.0005		1.3	26	<0.01	
5/00	7.73	7.74	580	490	0.027		0.027		3.0	<0.004	<0.0005	0.053	1.3	24	<0.01	
5/01	7.53	7.68	550	462	0.023		0.023		3.1	<0.004	<0.0005		1.3	32	<0.01	
5/02	7.57	7.60	530	316	0.021		<0.01		3.0	<0.004	<0.0005		1.17	29.5	<0.01	
5/03	7.57	7.21	600	481	0.017		0.017		4.0	<0.004	<0.0005		1.4	34	<0.01	
5/04	7.66	7.70	1,700	1,899	0.65		0.65		9.6	<0.004	<0.0005		1.6	430	<0.01	
5/05	7.87	7.53	2,100	1,844	1.6		0.017		11.J	0.0073	<0.0005		0.35	810	<0.01	
5/06	7.73	7.80	2,000	1,737	2.7		0.92		10.0J	<0.004	<0.0005		1.2	450	<0.01	
5/07	7.81	7.68	1,200	832	0.63		<0.01		9.2	<0.004	<0.0005		0.9	220	<0.01	
6/08	7.64		2,900	1,320	4.6		0.81		14.0	<0.004	<0.0005		1.1	650	<0.01	
5/09	7.7	7.87	2,660	2,260	[5.6]		<0.0050		24.1	0.0058	<0.0010		0.84	877	<0.0050	
7/09		8.10		3,320	4.7		<0.005									
7/10	8.04	8.11	2,510	1,667	1.69		1.17		27.4	0.00108	<0.0005		0.697	634	<0.0050	
7/11	7.87	8.35	2,040	529	1.53		1.53	0.0356	31.1	<0.00250	<0.0010		0.839	466	<0.0050	
7/12	8.0	8.78	2,570	2,470	0.84		<0.0050	0.2500	34.0	<0.0050	<0.0010		0.784	623	<0.0050	
8/13	8.0	8.01	3,190	2,613	2.7			0.0440	46.6	< 0.005			0.463	759		
7/14	7.7		2,790		2.6			0.12	27.4	< 0.005			0.426	706		

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 3
SUMMARY OF ESTIMATED AQUIFER AREAS ABOVE CLEANUP GOALS AND CONTAMINANT MASS-IN-PLACE
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Sampling Date	Estimated Area of Aquifer Above 4 mg/L Fluoride (acres)	% Change	Estimated Area of Aquifer Above 0.2 mg/L Total CN (acres)	% Change
6/88	43.3		24.5	
1/95	48.4	11.8%	5.9	-75.9%
5/97	43.7	-9.7%	21.3	261.0%
5/98	36.9	-15.6%	10.5	-50.7%
5/99	43.7	18.4%	27.5	161.9%
5/00	41.6	-4.8%	36.5	32.7%
5/01	41.4	-0.5%	36.7	0.5%
5/02	37.9	-8.5%	37.2	1.4%
5/03	38.8	2.4%	37.2	0.0%
5/04	42.1	8.5%	38.1	2.4%
5/05	39.5	-6.2%	43.7	14.7%
5/06	45.4	14.9%	44.8	2.5%
5/07	42.1	-7.3%	46.6	4.0%
6/08	44.0	4.5%	49.9	7.1%
5/09	41.7	-5.2%	50.0	0.2%
7/10	47.5	13.9%	51.5	3.0%
7/11	47.5	0.0%	45.6	-11.5%
7/12	46.4	-2.3%	47.9	5.0%
8/13	51.1	10.1%	53.8	12.3%
7/14	47.5	-7.0%	48.7	-9.5%

Sampling Date	Estimated Fluoride Mass-in-Place (lbs.)	% Change	Estimated Total CN Mass-in-Place (lbs.)	% Change
6/88	85,702		6,821	
1/95	28,168	-67.1%	4,271	-37.4%
5/97	29,033	3.1%	2,943	-31.1%
5/98	23,888	-17.7%	2,597	-11.8%
5/99	30,416	27.3%	5,566	114.3%
5/00	27,071	-11.0%	4,679	-15.9%
5/01	21,741	-19.7%	4,300	-8.1%
5/02	28,789	32.4%	4,530	5.3%
5/03	32,127	11.6%	2,773	-38.8%
5/04	38,836	20.9%	3,062	10.4%
5/05	37,656	-3.0%	4,681	52.9%
5/06	32,725	-13.1%	6,615	41.3%
5/07	35,219	7.6%	6,438	-2.7%
6/08	33,638	-4.5%	5,997	-6.8%
5/09	29,510	-12.3%	5,422	-9.6%
7/10	37,466	27.0%	3,441	-36.5%
7/11	33,722	-10.0%	3,499	1.7%
7/12	35,324	4.8%	5,393	54.1%
8/13	29,346	-16.9%	4,995	-7.4%
7/14	28,544	-2.7%	3,788	-24.2%

TABLE 4
COMPARISON OF CALCULATED MASS REMOVAL TO CHANGES IN ESTIMATED MASS-IN-PLACE
FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	FLUORIDE			TOTAL CYANIDE		
SAMPLE DATE	ESTIMATED MASS-IN-PLACE	POUNDS CHANGE	MASS REMOVED	ESTIMATED MASS-IN-PLACE	POUNDS CHANGE	MASS REMOVED
5/97	29,033			2,943		
5/98	23,888	-5,145	26,383	2,597	-346	3,462
5/99	30,416	+6,528	29,516	5,566	+2,969	3,248
5/00	27,071	-3,345	18,934	4,679	-887	2,884
5/01	21,741	-5,330	19,653	4,300	-379	2,897
5/02	28,789	+7,048	16,470	4,530	+230	2,321
5/03	32,127	+3,338	12,042	2,773	-1,757	1,726
5/04	38,836	+6,709	9,845	3,062	+289	1,597
5/05	37,656	-1,180	8,802	4,681	+1,619	1,075
5/06	32,735	-4,921	8,607	6,615	+1,934	1,392
5/07	35,219	+2,484	6,085	6,438	-177	1,151
6/08	33,638	-1,581	6,320	5,997	-441	1,000
5/09	29,510	-4,128	6,964	5,422	-575	936
7/10	37,466	+7,956	10,436	3,441	-1,981	1,256
7/11	33,772	-3,694	7,234	3,499	+58	760
7/12	35,324	+1,552	1,724	5,393	+1,894	66
8/13	29,346	-5,978	1,021	4,995	-398	98
7/14	28,544	-802	5,785	3,788	-1,207	654
	TOTAL MASS REMOVED		195,821	TOTAL MASS REMOVED		26,523

All values given in pounds.

APPENDIX A

WATER SAMPLING LOG FORMS

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/21/14

Sample I.D.: MW-10
Duplicate I.D.: NONE
Time Sampling Began: 1440
Time Sampling Complete: 1504

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.16
Depth of Well Below MP (TD): 100.72
Depth to Water Below MP (DTW): 46.86
'ater Column (WC) in Well (TD - DTW): 53.86
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.62

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 25.85

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Clear colorless Odor: odorless Turbidity: CLEAR

Well Volumes:	7.5	27.5	37.5			
pH:	7.04	7.00	7.01			
Spec. Cond.:	0.622	0.618	0.618			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:						
Temp.:	17.26	16.38	16.29			

TR 7/21/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	(2) 250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: L. Lawson / J. Hanna / B. Farlo
Comments: N/A.

TR 7/21/14

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/21/14

Sample I.D.: MW-8
Duplicate I.D.: 1519 in 7/21/14 NOTE
Time Sampling Began: 1519
Time Sampling Complete: 1535

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.71
Depth of Well Below MP (TD): 99.78
Depth to Water Below MP (DTW): 47.56
'ater Column (WC) in Well (TD - DTW): 52.22
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.36

GALLONS PER FOOT (GPF)			
1"=0.04	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 25.0G

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: ODORLESS Turbidity: CLEAR

Well Volumes:	8.00	16.00	24.00			
pH:	7.29	7.38	7.35			
Spec. Cond.:	0.786	0.899	0.919		RL	
Diss. Oxygen:	N/A	N/A	N/A		7/21/14	
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	19.24	18.71	18.62			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Lauer / J. Hauer / B. Farro
Comments:
RL
7/21/14

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date:

Sample I.D.: MW-11
Duplicate I.D.: NONE
Time Sampling Began: 1546
Time Sampling Complete: 1600

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.31
Depth of Well Below MP (TD): 97.35
Depth to Water Below MP (DTW): 47.08
'ater Column (WC) in Well (TD - DTW): 50.27
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.04

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 24.12

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: ODORLESS Turbidity: CLEAR

Well Volumes:	8.00	16.00	24.00			
pH:	7.59	7.56	7.57			
Spec. Cond.:	1.129	1.104	1.082		RC	
Diss. Oxygen:	NA	NA	NA		7/21/14	
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	16.03	15.65	15.77			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Cauwen / J. Hanna / B Fargo
Comments:
RC
7/21/14

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/21/14

Sample I.D.: MW-5
Duplicate I.D.: MW-55
Time Sampling Began: 1612
Time Sampling Complete: 1630

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.16
Depth of Well Below MP (TD): 91.88
Depth to Water Below MP (DTW): 46.98
'ater Column (WC) in Well (TD - DTW): 44.90
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.18

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 21.55

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: AMBER - COFFEE AT END Odor: ODORLESS Turbidity: CLEAR TO OPAQUE AT END

Well Volumes:	7.5	15.0	22.5			
pH:	7.60	7.62	7.62			
Spec. Cond.:	1.059	1.031	1.021			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	16.49	16.10	16.33			

7/21/14

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: RLAUNCH / J. HANNA
Comments: WATER STARTED LIGHT AMBER TO COFFEE COLOR
7/21/14

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-7
Project #:		Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1657
Date:	7/21/14	Time Sampling Complete:	1715

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 667.94

Depth of Well Below MP (TD): 79.7

Depth to Water Below MP (DTW): 46.40

'ater Column (WC) In Well (TD - DTW): 33.3

Casing Diameter: 2"

Gallons in Well (WC x GPF): 5.33

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 15.98

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Lt Brownish Odor: ODORLESS Turbidity: OPAQUE

Well Volumes:	5.5	11.0	16.5			
pH:	6.08	6.08	6.05			
Spec. Cond.:	0.508	0.502	0.499			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	✓	✓	✓			
Redox:	✓	✓	✓			
Temp.:	23.85	23.71	23.70			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Laurich / J. Hanner

Comments:

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-35
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	0906
Date:	7/22/14	Time Sampling Complete:	0910

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 661.9

Depth of Well Below MP (TD): 46.7

Depth to Water Below MP (DTW): 34.80

'ater Column (WC) in Well (TD - DTW): 11.9

Casing Diameter: 2"

Gallons in Well (WC x GPF): 1.90

GALLONS PER FOOT (GPF)			
1"=0.04	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 5.71

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK AMBER Odor: NO ODOR Turbidity: OPAQUE

Well Volumes:	2.0	4.0	6.0			
pH:	7.89	7.72	7.74			
Spec. Cond.:	0.288	0.301	0.323			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	16.83	18.04	18.82			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: R. CAURICH / J MANN

Comments:

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/22/14

Sample I.D.: MW-37
Duplicate I.D.: MW-87
Time Sampling Began: 0933
Time Sampling Complete: 0938

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.14
Depth of Well Below MP (TD): 36.98
Depth to Water Below MP (DTW): 21.60
'ater Column (WC) in Well (TD - DTW): 15.38
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.46

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 7.38

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: OPAQUE

Well Volumes:	2.5	5.0	7.5			
pH:	6.62	6.33	6.24			
Spec. Cond.:	0.282	0.278	0.277		KL 7/22/14	
Diss. Oxygen:	NA	NA	NA			
Turbidity:						
Redox:						
Temp.:	15.08	15.07	14.88			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Caulich / J. Hanna
Comments: KL 7/22/14

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/22/14

Sample I.D.: MW-32
Duplicate I.D.: None
Time Sampling Began: 1004
Time Sampling Complete: 1015

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 656.66
Depth of Well Below MP (TD): 57.18
Depth to Water Below MP (DTW): 32.46
'ater Column (WC) in Well (TD - DTW): 24.72
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.96

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 11.87

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	5.0	10.0	15.0			
pH:	9.96	9.95	9.93			
Spec. Cond.:	1.179	1.177	1.175			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:						
Redox:						
Temp.:	16.14	15.82	15.88			

7/22/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Laurich / J. Hanna
Comments:

7/22/14

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-36
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1033
Date:	7/22/14	Time Sampling Complete:	1042

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 655.14

Depth of Well Below MP (TD): 52.08

Depth to Water Below MP (DTW): 32.34

'ater Column (WC) in Well (TD - DTW): 19.74

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.16

GALLONS PER FOOT (GPF)			
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 9.48

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	3.75	7.5	11.25			
pH:	8.58	8.53	8.53			
Spec. Cond.:	0.592	0.587	0.584			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:						
Redox:						
Temp.:	16.14	15.76	15.79			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Lanich / J. Hanna

Comments:

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-17
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1111
Date:	7/22/14	Time Sampling Complete:	1122

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 655.03

Depth of Well Below MP (TD): 77.91

Depth to Water Below MP (DTW): 30.92

ater Column (WC) in Well (TD - DTW): 46.99

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.52

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 22.56

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	7.5	15.0	22.5			
pH:	8.06	8.000	8.01			
Spec. Cond.:	0.717	0.709	0.698			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.17	15.02	15.05			

7/22/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: R. LALLICK / J. HANNA

Comments:

7/22/14

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/22/14

Sample I.D.: MW-15
Duplicate I.D.: NONE
Time Sampling Began: 1246
Time Sampling Complete: 1255

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 657.31
Depth of Well Below MP (TD): 57.86
Depth to Water Below MP (DTW): 32.80
'ater Column (WC) in Well (TD - DTW): 25.06
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.00

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.00

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: TEA COLORED Odor: NONE Turbidity: SLIGHTLY OPAQUE

Well Volumes:	4.00	8.00	12.00			
pH:	8.08	7.82	7.85			
Spec. Cond.:	0.921	0.916	0.914			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	✓	✓	✓			
Redox:	✓	✓	✓			
Temp.:	15.29	15.17	15.31			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: T. Larson | J. Larson
Comments:

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/22/14

Sample I.D.: MW-34D
Duplicate I.D.: NONE
Time Sampling Began: 1309
Time Sampling Complete: 1320

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 654.67
Depth of Well Below MP (TD): 68.24
Depth to Water Below MP (DTW): 30.48
'ater Column (WC) in Well (TD - DTW): 37.76
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.04

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 18.12

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COFFEE Odor: NONE Turbidity: SLIGHTLY OPAQUE

Well Volumes:	6.25	12.50	18.75			
pH:	8.21	8.20	8.18			
Spec. Cond.:	0.736	0.732	0.728			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.26	15.48	15.24			

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Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Cavrich / J. Hanna
Comments:

7/22/14

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-34S
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1328
Date:	7/22/14	Time Sampling Complete:	1335

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 655.67

Depth of Well Below MP (TD): 49.35

Depth to Water Below MP (DTW): 32.20

'ater Column (WC) in Well (TD - DTW): 17.15

Casing Diameter: 2"

Gallons in Well (WC x GPF): 2.74

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 8.23

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	2.80	5.60	8.40			
pH:	8.32	8.29	8.29			
Spec. Cond.:	1.190	1.168	1.156			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	✓	✓	✓			
Redox:	✓	✓	✓			
Temp.:	15.63	15.61	15.13			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: Z LANCH / J. HANNA

Comments:

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-14
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1357
Date:	7/22/14	Time Sampling Complete:	1410

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 653.59

Depth of Well Below MP (TD): 86.9

Depth to Water Below MP (DTW): 30.62

'ater Column (WC) in Well (TD - DTW): 56.28

Casing Diameter: 2"

Gallons in Well (WC x GPF): 9.00

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 27.00

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: NONE Turbidity: CLEAR

Well Volumes:	9.3	18.6	27.9			
pH:	7.94	7.90	7.91			
Spec. Cond.:	0.645	0.659	0.665			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.26	15.15	14.99			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: R. Lynch / J. Hanna

Comments:

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-39D
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1431
Date:	7/22/14	Time Sampling Complete:	1442

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:	657.18
Depth of Well Below MP (TD):	80.21
Depth to Water Below MP (DTW):	33.30
'ater Column (WC) in Well (TD - DTW):	46.91
Casing Diameter:	2"
Gallons in Well (WC x GPF):	7.51

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 22.52

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: VERY SLIGHT AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	7.5	15.0	22.5			
pH:	7.86	7.78	7.79			
Spec. Cond.:	1.741	1.738	1.756			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:						
Temp.:	14.80	14.56	14.54			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: RL [illegible] / J. [illegible]

Comments:

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/22/14

Sample I.D.: MW-39S
Duplicate I.D.: NONE
Time Sampling Began: 1449
Time Sampling Complete: 1457

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 657.3
Depth of Well Below MP (TD): 60.23
Depth to Water Below MP (DTW): 33.42
'ater Column (WC) in Well (TD - DTW): 26.81
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.29

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.87

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: BRONZE AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	5.00	10.00	15.00			
pH:	9.26	9.18	9.15			
Spec. Cond.:	3.394	3.205	3.107			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	14.49	14.38	14.49			

7/22/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. LANUCH / J. HANNA
Comments:

7/22/14

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-18
Project #:		Duplicate I.D.:	None
Location:	HANNIBAL, OHIO	Time Sampling Began:	0844
Date:	7/23/14	Time Sampling Complete:	0852

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 660.91

Depth of Well Below MP (TD): 57.00

Depth to Water Below MP (DTW): 36.14

'ater Column (WC) in Well (TD - DTW): 20.86

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.34

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 10.01

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Dark Brown Odor: None Turbidity: Opaque

	3.75	7.5	11.25			
Well Volumes:	~~3.44~~	~~6.88~~	~~10.32~~			
pH:	9.62	9.63	9.54			
Spec. Cond.:	1.067	1.024	1.007			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.73	16.68	17.21			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. Lanich / J. Liana

Comments: N/A.

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-28
Duplicate I.D.: None
Time Sampling Began: 0916
Time Sampling Complete: 0925

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 663.27
Depth of Well Below MP (TD): 46.06
Depth to Water Below MP (DTW): 20.84
'ater Column (WC) in Well (TD - DTW): 25.22
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.04

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.11

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Slight Amber Odor: None Turbidity: Slightly Cloudy

Well Volumes:	4.35	8.70	13.05			
pH:	6.92	6.32	6.24			
Spec. Cond.:	0.357	0.343	0.339			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:						
Redox:						
Temp.:	13.52	13.60	13.78			

NL 7/23/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Lauricha / J. Lanna
Comments: N/A

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-16
Duplicate I.D.: NONE
Time Sampling Began: 0941
Time Sampling Complete: 0952

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.72
Depth of Well Below MP (TD): 83.11
Depth to Water Below MP (DTW): 39.30
'ater Column (WC) in Well (TD - DTW): 43.81
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.00

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 21.00

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	7.5	15.0	22.5			
pH:	9.22	9.22	9.22			
Spec. Cond.:	0.888	0.884	0.890		KW	
Diss. Oxygen:	N/A	N/A	N/A		7/23/14	
Turbidity:						
Redox:						
Temp.:	15.72	15.49	15.65			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. LAUNCH / J. HANNA
Comments: NA.

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-29D
Project #:		Duplicate I.D.:	MW-79D
Location:	HANNIBAL, OHIO	Time Sampling Began:	1011
Date:	7/23/14	Time Sampling Complete:	1025

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 653.07

Depth of Well Below MP (TD): 81.98

Depth to Water Below MP (DTW): 30.50

ater Column (WC) in Well (TD - DTW): 51.48

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.24

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 24.71

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: NONE Turbidity: CLEAR

Well Volumes:	8.75	17.5	26.25			
pH:	7.96	7.85	7.89			
Spec. Cond.:	0.582	0.576	0.576	0.579		
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.52	15.002	15.01	14.89		

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: T. Laurich | J. Hanna

Comments: COLLECT DUPE MW-79D.

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-29S
Duplicate I.D.: None
Time Sampling Began: 1030 1033
Time Sampling Complete: 1038 1041

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 653.4
Depth of Well Below MP (TD): 61.35
Depth to Water Below MP (DTW): 30.76
'ater Column (WC) in Well (TD - DTW): 30.59
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.89

GALLONS PER FOOT (GPF)				
1"=0.04	[illegible]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 14.68

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. COFFEE Odor: NONE Turbidity: SLIGHTLY OPAQUE

Well Volumes:	5.0	10.0	15.0			
pH:	7.76	7.70	7.70			
Spec. Cond.:	1.158	1.126	1.092			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.12	15.06	14.80			

7/23/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. LAWLICH / J. HANNA
Comments: COLOR STARTED LT COFFE ENDED LT AMBER.

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-19
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1105
Date:	7/23/14	Time Sampling Complete:	1113

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 662.03

Depth of Well Below MP (TD): 65.2

Depth to Water Below MP (DTW): 38.54

'ater Column (WC) in Well (TD - DTW): 26.66

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.27

GALLONS PER FOOT (GPF)			
1"=0.04	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.80

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: NONE Turbidity: SLIGHTLY CLOUDY

Well Volumes:	4.37	8.75	13.13			
pH:	7.48	7.48	7.43			
Spec. Cond.:	0.838	0.880	0.880			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.30	14.81	14.90			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: R. Lynch / T. Hanna

Comments: NA.

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-12
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1135
Date:	7/23/14	Time Sampling Complete:	1150

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 636.73

Depth of Well Below MP (TD): 68.24

Depth to Water Below MP (DTW): 13.90

'ater Column (WC) in Well (TD - DTW): 54.34

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.69

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 26.08

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: COLORLESS Odor: NONE Turbidity: CLEAR

Well Volumes:	8.75	17.50	26.25			
pH:	7.99	7.93	7.92			
Spec. Cond.:	0.500	0.492	0.492			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.42	15.09	15.22			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Cavalla / J. Kanna

Comments: N/A.

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-42D
Duplicate I.D.: NONE
Time Sampling Began: 1321
Time Sampling Complete: 1335

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 654.34
Depth of Well Below MP (TD): 85.1
Depth to Water Below MP (DTW): 31.20
'ater Column (WC) in Well (TD - DTW): 53.9
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.62

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 25.87

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: VERY LT. AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	8.75	17.5	26.25			
pH:	8.12	8.10	8.11			
Spec. Cond.:	2.645	2.305	2.429			
Diss. Oxygen:	NA	NA	NA			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	14.95	14.57	14.54			

7/23/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. LAUNCH + J. HANNA
Comments: NA

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-42S
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1340
Date:	7/23/M	Time Sampling Complete:	1347

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 654.37

Depth of Well Below MP (TD): 52.3

Depth to Water Below MP (DTW): 31.92

'ater Column (WC) in Well (TD - DTW): 20.38

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.26

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 9.78

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	3.75	7.500	11.25			
pH:	7.61	7.59	7.64			
Spec. Cond.:	2.227	2.164	2.172		M	
Diss. Oxygen:	N/A	N/A	N/A		7/23/M	
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	14.67	14.62	14.46			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: T. LANNA / J. HANNA

Comments: N/A

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-31
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1401
Date:	7/23/14	Time Sampling Complete:	1410

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 661.59

Depth of Well Below MP (TD): 67.51

Depth to Water Below MP (DTW): 35.60

'ater Column (WC) in Well (TD - DTW): 31.91

Casing Diameter: 2"

Gallons in Well (WC x GPF): 5.11

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 15.32

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: TEA COLORED Odor: NONE Turbidity: SLIGHTLY OPAQUE

Well Volumes:	5.00	10.00	15.00			
pH:	9.53	9.54	9.54			
Spec. Cond.:	0.922	0.912	0.927			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.62	15.41	15.35			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 X 40ml. GLASS	HCL

Sampling Personnel:

Comments: CASING IS BROKEN ORMET CREW HIT W/ TRUCK HOSE WHILE CLEANING LOCATION.

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-40D
Duplicate I.D.: NONE
Time Sampling Began: 1439
Time Sampling Complete: 1450

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.95
Depth of Well Below MP (TD): 90.4
Depth to Water Below MP (DTW): 41.78
'ater Column (WC) in Well (TD - DTW): 48.62
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.78

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 23.34

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK COFFEE Odor: NONE Turbidity: OBQUE

Well Volumes:	7.5	15.0	22.5			
pH:	8.49	8.43	8.44			
Spec. Cond.:	0.808	0.795	0.808			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.90	15.85	15.86			

M 7/23/14

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. LAUNCH / J. HANNA
Comments: N/A.

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-40S
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1453
Date:	7/23/14	Time Sampling Complete:	1500

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 662.22

Depth of Well Below MP (TD): 70.4

Depth to Water Below MP (DTW): 41.90

'ater Column (WC) in Well (TD - DTW): 28.5

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.56

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13.68

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	5.00	10.00	15.00			
pH:	8.39	8.34	8.37			
Spec. Cond.:	0.9250	0.922	0.916			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.86	15.88	15.85			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampling Personnel: R. LAUNICH / J. HANNA

Comments: N/A

Project Name: ORMET-REDUCTION MILL
Project #:
Location: HANNIBAL, OHIO
Date: 7/23/14

Sample I.D.: MW-2
Duplicate I.D.: NONE
Time Sampling Began: 1520
Time Sampling Complete: 1529 1530

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.12
Depth of Well Below MP (TD): 85.23
Depth to Water Below MP (DTW): 45.62
'ater Column (WC) in Well (TD - DTW): 39.61
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.34

GALLONS PER FOOT (GPF)				
1"=0.04		3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 19.01

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: DARK COFFEE Odor: NONE Turbidity: OPAQUE

Well Volumes:	6.88	13.75	20.63			
pH:	9.58	9.51				
Spec. Cond.:	1.123	1.086				
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	16.72	16.19				

7/23/14

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. Cachich / J. Hanna
Comments: N/A

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-1
Project #:		Duplicate I.D.:	MW-51
Location:	HANNIBAL, OHIO	Time Sampling Began:	1553
Date:	7/23/14	Time Sampling Complete:	1600

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 668.07

Depth of Well Below MP (TD): 71.11

Depth to Water Below MP (DTW): 45.12

Water Column (WC) in Well (TD - DTW): 25.99

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.16

GALLONS PER FOOT (GPF)				
1"=0.04	[redacted]	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.48

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Colorless ~~CLEAR~~ m 7/23/14 Odor: NONE Turbidity: CLEAR

Well Volumes:	4.38	8.75	13.13			
pH:	7.24	6.54	6.48			
Spec. Cond.:	0.525	0.532	0.534		m	
Diss. Oxygen:	N/A	N/A	N/A		7/23/14	
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.75	15.40	15.52			

Sampling Method and Materials: 12 Volt submersible purge pump w/polyethylene disposable tubing

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. Lawrence / J. Hanna

Comments: COLLECTED DUPE MW-51.

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-30
Project #:		Duplicate I.D.:	NONE
Location:	HANNIBAL, OHIO	Time Sampling Began:	1619
Date:	7/23/14	Time Sampling Complete:	1625

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 667.58

Depth of Well Below MP (TD): 60.41

Depth to Water Below MP (DTW): 43.12

'ater Column (WC) in Well (TD - DTW): 17.29

Casing Diameter: 2"

Gallons in Well (WC x GPF): 2.74

GALLONS PER FOOT (GPF)			
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 8.30

Evacuation Method: 12 Volt submersible purge pump w/polyethylene disposable tubing

SAMPLING DATA AND FIELD PARAMETERS

Color: Light Brown Odor: NONE Turbidity: OPAQUE

Well Volumes:	2.81	5.62	8.43			
pH:	6.53	6.70	6.68			
Spec. Cond.:	0.367	0.406	0.401			
Diss. Oxygen:	N/A	N/A	N/A			
Turbidity:	↓	↓	↓			
Redox:	↓	↓	↓			
Temp.:	15.00	14.81	14.79			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Mn, Na	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, WAD CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. Laurich / J. Hanna

Comments:

APPENDIX B

LABORATORY REPORTS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 11, 2014

Mr. Robert L. Fargo
Leidos Engineering LLC
300 Wharton Circle, Suite 176
Triadelphia, WV 26059

RE: Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was reissued on 8/11/14 to correct a dilution factor on sample 016 for fluoride

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Samantha Bayura

Samantha Bayura for
Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021

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SAMPLE SUMMARY

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30125609001	MW-10	Water	07/21/14 15:04	07/23/14 13:30
30125609002	MW-8	Water	07/21/14 15:35	07/23/14 13:30
30125609003	MW-11	Water	07/21/14 16:00	07/23/14 13:30
30125609004	MW-5	Water	07/21/14 16:30	07/23/14 13:30
30125609005	MW-55	Water	07/21/14 16:30	07/23/14 13:30
30125609006	MW-7	Water	07/21/14 17:15	07/23/14 13:30
30125609007	MW-35	Water	07/22/14 09:10	07/23/14 13:30
30125609008	MW-37	Water	07/22/14 09:38	07/23/14 13:30
30125609009	MW-87	Water	07/22/14 09:38	07/23/14 13:30
30125609010	MW-32	Water	07/22/14 10:15	07/23/14 13:30
30125609011	MW-36	Water	07/22/14 10:42	07/23/14 13:30
30125609012	MW-17	Water	07/22/14 11:22	07/23/14 13:30
30125609013	MW-15	Water	07/22/14 12:55	07/23/14 13:30
30125609014	MW-34D	Water	07/22/14 13:20	07/23/14 13:30
30125609015	MW-34S	Water	07/22/14 13:35	07/23/14 13:30
30125609016	MW-14	Water	07/22/14 14:10	07/23/14 13:30
30125609017	MW-39D	Water	07/22/14 14:42	07/23/14 13:30
30125609018	MW-39S	Water	07/22/14 14:57	07/23/14 13:30

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SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30125609001	MW-10	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609002	MW-8	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609003	MW-11	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609004	MW-5	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609005	MW-55	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609006	MW-7	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-CN-E	BMS	1	PASI-PA
30125609007	MW-35	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609008	MW-37	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609009	MW-87	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609010	MW-32	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609011	MW-36	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609012	MW-17	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30125609013	MW-15	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609014	MW-34D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609015	MW-34S	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609016	MW-14	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609017	MW-39D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125609018	MW-39S	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	DJR	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: EPA 6010B
Description: 6010 MET ICP,Dissolved
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/13505

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30125609001,30125609011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 764023)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00:1000.02
Pace Project No.: 30125609

Method: EPA 8260B
Description: 8260 MSV
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: SM 4500F/C
Description: 4500FC Fluoride
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: EPA 9040B
Description: 9040 pH
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for EPA 9040B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA recommended holding time.
- MW-10 (Lab ID: 30125609001)
- MW-11 (Lab ID: 30125609003)
- MW-14 (Lab ID: 30125609016)
- MW-15 (Lab ID: 30125609013)
- MW-17 (Lab ID: 30125609012)
- MW-32 (Lab ID: 30125609010)
- MW-34D (Lab ID: 30125609014)
- MW-34S (Lab ID: 30125609015)
- MW-35 (Lab ID: 30125609007)
- MW-36 (Lab ID: 30125609011)
- MW-37 (Lab ID: 30125609008)
- MW-39D (Lab ID: 30125609017)
- MW-39S (Lab ID: 30125609018)
- MW-5 (Lab ID: 30125609004)
- MW-55 (Lab ID: 30125609005)
- MW-7 (Lab ID: 30125609006)
- MW-8 (Lab ID: 30125609002)
- MW-87 (Lab ID: 30125609009)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: EPA 9050A
Description: 9050 Specific Conductance
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for EPA 9050A. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: **SM 4500-CN I**
Description: Cyanide, Weak Acid Dissociable
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for SM 4500-CN I. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Method: SM 4500-CN-E
Description: 4500CNE Cyanide, Total
Client: Leidos Engineering, LLC
Date: August 11, 2014

General Information:
18 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/17283

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30125609001

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

- MSD (Lab ID: 765438)
  - Cyanide

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 765437)
  - Cyanide

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-10 **Lab ID: 30125609001** Collected: 07/21/14 15:04 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:15	7440-38-2	
Manganese, Dissolved	ND	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:15	7439-96-5	
Sodium, Dissolved	**19700**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:15	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.19**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.3**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**693**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	ND	mg/L	0.0050	0.0024	1		08/01/14 13:05	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.010	0.0029	1		07/28/14 20:19	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-8 **Lab ID: 30125609002** Collected: 07/21/14 15:35 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:25	7440-38-2	
Manganese, Dissolved	**83.7**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:25	7439-96-5	
Sodium, Dissolved	**182000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:25	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**8.8**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.6**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1000**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.86**	mg/L	0.050	0.024	10		08/01/14 13:42	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.6**	mg/L	0.10	0.029	10		07/28/14 20:23	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-11 **Lab ID: 30125609003** Collected: 07/21/14 16:00 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**11.2**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:27	7440-38-2	
Manganese, Dissolved	**562**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:27	7439-96-5	
Sodium, Dissolved	**244000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:27	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**12.2**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.8**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1260**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.75**	mg/L	0.050	0.024	10		08/01/14 13:43	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.89**	mg/L	0.10	0.029	10		07/28/14 20:23	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-5 **Lab ID: 30125609004** Collected: 07/21/14 16:30 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:29	7440-38-2	
Manganese, Dissolved	**246**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:29	7439-96-5	
Sodium, Dissolved	**237000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:29	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	**7.0**	ug/L	5.0	0.12	1		07/29/14 19:20	127-18-4	
Surrogates									
4-Bromofluorobenzene (S)	91	%	85-115		1		07/29/14 19:20	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-119		1		07/29/14 19:20	17060-07-0	
Toluene-d8 (S)	99	%	85-115		1		07/29/14 19:20	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**29.2**	mg/L	0.20	0.037	2		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.8**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1150**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.85**	mg/L	0.050	0.024	10		08/01/14 13:46	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.3**	mg/L	1.0	0.29	100		07/28/14 21:01	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-55 **Lab ID: 30125609005** Collected: 07/21/14 16:30 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:32	7440-38-2	
Manganese, Dissolved	**237**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:32	7439-96-5	
Sodium, Dissolved	**241000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:32	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	**6.9**	ug/L	5.0	0.12	1		07/29/14 19:45	127-18-4	
Surrogates									
4-Bromofluorobenzene (S)	96	%	85-115		1		07/29/14 19:45	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-119		1		07/29/14 19:45	17060-07-0	
Toluene-d8 (S)	98	%	85-115		1		07/29/14 19:45	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**29.2**	mg/L	0.20	0.037	2		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.9**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1150**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.66**	mg/L	0.050	0.024	10		08/01/14 13:47	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.0**	mg/L	1.0	0.29	100		07/28/14 21:02	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-7 **Lab ID: 30125609006** Collected: 07/21/14 17:15 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**21.1**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:39	7440-38-2	
Manganese, Dissolved	**2590**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:39	7439-96-5	
Sodium, Dissolved	**58700**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:39	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.11**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.3**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**532**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	ND	mg/L	0.0050	0.0024	1		08/01/14 13:13	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.010	0.0029	1		07/28/14 20:29	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-35 **Lab ID: 30125609007** Collected: 07/22/14 09:10 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:42	7440-38-2	
Manganese, Dissolved	**916**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:42	7439-96-5	
Sodium, Dissolved	**40600**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:42	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.9**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.6**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**382**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.74**	mg/L	0.050	0.024	10		08/01/14 13:50	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.7**	mg/L	1.0	0.29	100		07/28/14 21:04	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-37 **Lab ID: 30125609008** Collected: 07/22/14 09:38 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:44	7440-38-2	
Manganese, Dissolved	**63.9**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:44	7439-96-5	
Sodium, Dissolved	**33500**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:44	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**1.9**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.0**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**314**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.12**	mg/L	0.0050	0.0024	1		08/01/14 13:14	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.13**	mg/L	0.010	0.0029	1		07/28/14 20:32	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-87 **Lab ID: 30125609009** Collected: 07/22/14 09:38 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:46	7440-38-2	
Manganese, Dissolved	**53.6**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:46	7439-96-5	
Sodium, Dissolved	**34800**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:46	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**1.9**	mg/L	0.10	0.019	1		07/31/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.1**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**314**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.10**	mg/L	0.0050	0.0024	1		08/01/14 13:14	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.14**	mg/L	0.010	0.0029	1		07/28/14 20:33	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-32 **Lab ID: 30125609010** Collected: 07/22/14 10:15 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**37.9**	ug/L	10.0	7.2	1	07/24/14 16:22	07/30/14 10:49	7440-38-2	
Manganese, Dissolved	**1380**	ug/L	10.0	1.5	1	07/24/14 16:22	07/30/14 10:49	7439-96-5	
Sodium, Dissolved	**332000**	ug/L	2000	682	1	07/24/14 16:22	07/30/14 10:49	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**54.6**	mg/L	2.0	0.37	20		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**9.7**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1340**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**1.2**	mg/L	0.050	0.024	10		08/01/14 13:52	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.4**	mg/L	1.0	0.29	100		07/28/14 21:05	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-36 **Lab ID: 30125609011** Collected: 07/22/14 10:42 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:51	7440-38-2	
Manganese, Dissolved	**223**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:51	7439-96-5	
Sodium, Dissolved	**126000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:51	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**19.7**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.4**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**666**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.62**	mg/L	0.050	0.024	10		08/01/14 13:54	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.1**	mg/L	0.10	0.029	10		07/28/14 20:36	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-17 **Lab ID: 30125609012** Collected: 07/22/14 11:22 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 10:58	7440-38-2	
Manganese, Dissolved	**1350**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 10:58	7439-96-5	
Sodium, Dissolved	**140000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 10:58	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**15.3**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.0**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**804**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**1.8**	mg/L	0.050	0.024	10		08/01/14 13:55	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.0**	mg/L	1.0	0.29	100		07/28/14 21:08	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-15 **Lab ID: 30125609013** Collected: 07/22/14 12:55 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**10.1**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 11:00	7440-38-2	
Manganese, Dissolved	**380**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 11:00	7439-96-5	
Sodium, Dissolved	**206000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 11:00	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**16.0**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.8**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1040**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**1.1**	mg/L	0.050	0.024	10		08/01/14 13:57	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.1**	mg/L	1.0	0.29	100		07/28/14 21:09	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-34D **Lab ID: 30125609014** Collected: 07/22/14 13:20 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**8.7**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 11:12	7440-38-2	
Manganese, Dissolved	**317**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 11:12	7439-96-5	
Sodium, Dissolved	**190000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 11:12	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**21.4**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.1**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**832**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**1.0**	mg/L	0.050	0.024	10		08/01/14 13:58	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.7**	mg/L	1.0	0.29	100		07/28/14 21:11	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-34S **Lab ID: 30125609015** Collected: 07/22/14 13:35 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	10.0	7.2	1	07/24/14 16:22	07/30/14 11:14	7440-38-2	
Manganese, Dissolved	**545**	ug/L	10.0	1.5	1	07/24/14 16:22	07/30/14 11:14	7439-96-5	
Sodium, Dissolved	**314000**	ug/L	2000	682	1	07/24/14 16:22	07/30/14 11:14	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**21.8**	mg/L	2.0	0.37	20		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.2**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1280**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.83**	mg/L	0.050	0.024	10		08/01/14 14:00	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.7**	mg/L	1.0	0.29	100		07/28/14 21:15	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-14 **Lab ID: 30125609016** Collected: 07/22/14 14:10 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**6.9**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 11:17	7440-38-2	
Manganese, Dissolved	**880**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 11:17	7439-96-5	
Sodium, Dissolved	**86000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 11:17	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.4**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.8**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**756**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.11**	mg/L	0.0050	0.0024	1		08/01/14 13:26	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.13**	mg/L	0.010	0.0029	1		07/28/14 20:44	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-39D **Lab ID: 30125609017** Collected: 07/22/14 14:42 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 11:19	7440-38-2	
Manganese, Dissolved	**1190**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 11:19	7439-96-5	
Sodium, Dissolved	**480000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 11:19	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**17.8**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.9**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**2010**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**2.8**	mg/L	0.15	0.072	30		08/01/14 14:17	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.2**	mg/L	1.0	0.29	100		07/28/14 21:16	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Sample: MW-39S **Lab ID: 30125609018** Collected: 07/22/14 14:57 Received: 07/23/14 13:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**18.2**	ug/L	5.0	3.6	1	07/24/14 16:22	07/30/14 11:21	7440-38-2	
Manganese, Dissolved	**90.4**	ug/L	5.0	0.73	1	07/24/14 16:22	07/30/14 11:21	7439-96-5	
Sodium, Dissolved	**921000**	ug/L	1000	341	1	07/24/14 16:22	07/30/14 11:21	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**131**	mg/L	5.0	0.94	50		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.9**	Std. Units	1.0	1.0	1		07/23/14 19:30		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**3440**	umhos/cm	1.0	1.0	1		08/05/14 14:00		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**1.1**	mg/L	0.050	0.024	10		08/01/14 14:04	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.1**	mg/L	1.0	0.29	100		07/28/14 21:18	57-12-5	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: MPRP/13505 — Analysis Method: EPA 6010B
QC Batch Method: EPA 3005A — Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

METHOD BLANK: 764017 — Matrix: Water
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	07/30/14 10:11	
Manganese, Dissolved	ug/L	ND	5.0	07/30/14 10:11	
Sodium, Dissolved	ug/L	ND	1000	07/30/14 10:11	

LABORATORY CONTROL SAMPLE: 764018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	500	468	94	80-120	
Manganese, Dissolved	ug/L	500	500	100	80-120	
Sodium, Dissolved	ug/L	5000	5000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 764020 764021

Parameter	Units	30125609001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	500	500	521	523	104	105	75-125	0	20	
Manganese, Dissolved	ug/L	ND	500	500	528	535	106	107	75-125	1	20	
Sodium, Dissolved	ug/L	19700	5000	5000	24400	24600	95	98	75-125	1	20	

MATRIX SPIKE SAMPLE: 764023

Parameter	Units	30125609011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	ND	500	522	104	75-125	
Manganese, Dissolved	ug/L	223	500	758	107	75-125	
Sodium, Dissolved	ug/L	126000	5000	137000	222	75-125	M1

SAMPLE DUPLICATE: 764019

Parameter	Units	30125609001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	ug/L	ND	ND		20	
Manganese, Dissolved	ug/L	ND	ND		20	
Sodium, Dissolved	ug/L	19700	18100	8	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

SAMPLE DUPLICATE: 764022

Parameter	Units	30125609011 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	ug/L	ND	ND		20	
Manganese, Dissolved	ug/L	223	218	2	20	
Sodium, Dissolved	ug/L	126000	128000	2	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: MSV/20462 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV
Associated Lab Samples: 30125609004, 30125609005

METHOD BLANK: 765754 | Matrix: Water
Associated Lab Samples: 30125609004, 30125609005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	1.0	07/29/14 12:26	
1,2-Dichloroethane-d4 (S)	%	109	77-119	07/29/14 12:26	
4-Bromofluorobenzene (S)	%	94	85-115	07/29/14 12:26	
Toluene-d8 (S)	%	100	85-115	07/29/14 12:26	

LABORATORY CONTROL SAMPLE: 765755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	20	17.2	86	62-125	
1,2-Dichloroethane-d4 (S)	%			100	77-119	
4-Bromofluorobenzene (S)	%			94	85-115	
Toluene-d8 (S)	%			102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 766293 766294

Parameter	Units	30125824002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	ug/L	ND	20	20	16.3	18.4	82	92	62-125	12	30	
1,2-Dichloroethane-d4 (S)	%						107	103	77-119			
4-Bromofluorobenzene (S)	%						96	92	85-115			
Toluene-d8 (S)	%						96	99	85-115			

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WET/24526 Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009

METHOD BLANK: 766349 Matrix: Water
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	07/31/14 11:00	

LABORATORY CONTROL SAMPLE: 766350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 766351 766352

Parameter	Units	30125990001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.35	4	4	4.3	4.4	99	103	85-115	3	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WET/24597 — Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C — Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

METHOD BLANK: 768388 — Matrix: Water
Associated Lab Samples: 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	08/04/14 14:00	

LABORATORY CONTROL SAMPLE: 768389

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 768390 768391

Parameter	Units	30126143001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.28	4	4	4.2	4.4	98	102	85-115	4	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WET/24424 Analysis Method: EPA 9040B
QC Batch Method: EPA 9040B Analysis Description: 9040 pH
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

SAMPLE DUPLICATE: 763441

Parameter	Units	30125609018 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.9	8.9	0		H6

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WET/24617 Analysis Method: EPA 9050A
QC Batch Method: EPA 9050A Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

METHOD BLANK: 768976 Matrix: Water
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	08/05/14 14:00	

LABORATORY CONTROL SAMPLE: 768977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1340	95	90-110	

SAMPLE DUPLICATE: 768978

Parameter	Units	30125609001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	693	692	0	25	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WETA/30467 | Analysis Method: SM 4500-CN I
QC Batch Method: SM 4500-CN I | Analysis Description: SM4500CN-I Cyanide WAD

Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

METHOD BLANK: 1419161 Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Dissociable	mg/L	ND	0.0050	08/01/14 12:58	

LABORATORY CONTROL SAMPLE: 1419162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	.1	0.11	111	80-120	

MATRIX SPIKE SAMPLE: 1419163

Parameter	Units	50101229001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	ND	.1	0.085	82	80-120	

SAMPLE DUPLICATE: 1419164

Parameter	Units	50101299001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Dissociable	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

QC Batch: WETA/17283 — Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E — Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

METHOD BLANK: 765435 — Matrix: Water
Associated Lab Samples: 30125609001, 30125609002, 30125609003, 30125609004, 30125609005, 30125609006, 30125609007, 30125609008, 30125609009, 30125609010, 30125609011, 30125609012, 30125609013, 30125609014, 30125609015, 30125609016, 30125609017, 30125609018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.010	07/28/14 20:16	

LABORATORY CONTROL SAMPLE: 765436

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 765437 765438

Parameter	Units	30125609001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.12	0.099	122	99	90-110	21	20	D6,M1

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QUALIFIERS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City
PASI-PA	Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125609001	MW-10	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609002	MW-8	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609003	MW-11	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609004	MW-5	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609005	MW-55	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609006	MW-7	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609007	MW-35	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609008	MW-37	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609009	MW-87	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609010	MW-32	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609011	MW-36	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609012	MW-17	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609013	MW-15	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609014	MW-34D	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609015	MW-34S	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609016	MW-14	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609017	MW-39D	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609018	MW-39S	EPA 3005A	MPRP/13505	EPA 6010B	ICP/12806
30125609004	MW-5	EPA 8260B	MSV/20462		
30125609005	MW-55	EPA 8260B	MSV/20462		
30125609001	MW-10	SM 4500F/C	WET/24526		
30125609002	MW-8	SM 4500F/C	WET/24526		
30125609003	MW-11	SM 4500F/C	WET/24526		
30125609004	MW-5	SM 4500F/C	WET/24526		
30125609005	MW-55	SM 4500F/C	WET/24526		
30125609006	MW-7	SM 4500F/C	WET/24526		
30125609007	MW-35	SM 4500F/C	WET/24526		
30125609008	MW-37	SM 4500F/C	WET/24526		
30125609009	MW-87	SM 4500F/C	WET/24526		
30125609010	MW-32	SM 4500F/C	WET/24597		
30125609011	MW-36	SM 4500F/C	WET/24597		
30125609012	MW-17	SM 4500F/C	WET/24597		
30125609013	MW-15	SM 4500F/C	WET/24597		
30125609014	MW-34D	SM 4500F/C	WET/24597		
30125609015	MW-34S	SM 4500F/C	WET/24597		
30125609016	MW-14	SM 4500F/C	WET/24597		
30125609017	MW-39D	SM 4500F/C	WET/24597		
30125609018	MW-39S	SM 4500F/C	WET/24597		
30125609001	MW-10	EPA 9040B	WET/24424		
30125609002	MW-8	EPA 9040B	WET/24424		
30125609003	MW-11	EPA 9040B	WET/24424		
30125609004	MW-5	EPA 9040B	WET/24424		
30125609005	MW-55	EPA 9040B	WET/24424		
30125609006	MW-7	EPA 9040B	WET/24424		
30125609007	MW-35	EPA 9040B	WET/24424		
30125609008	MW-37	EPA 9040B	WET/24424		
30125609009	MW-87	EPA 9040B	WET/24424		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125609010	MW-32	EPA 9040B	WET/24424		
30125609011	MW-36	EPA 9040B	WET/24424		
30125609012	MW-17	EPA 9040B	WET/24424		
30125609013	MW-15	EPA 9040B	WET/24424		
30125609014	MW-34D	EPA 9040B	WET/24424		
30125609015	MW-34S	EPA 9040B	WET/24424		
30125609016	MW-14	EPA 9040B	WET/24424		
30125609017	MW-39D	EPA 9040B	WET/24424		
30125609018	MW-39S	EPA 9040B	WET/24424		
30125609001	MW-10	EPA 9050A	WET/24617		
30125609002	MW-8	EPA 9050A	WET/24617		
30125609003	MW-11	EPA 9050A	WET/24617		
30125609004	MW-5	EPA 9050A	WET/24617		
30125609005	MW-55	EPA 9050A	WET/24617		
30125609006	MW-7	EPA 9050A	WET/24617		
30125609007	MW-35	EPA 9050A	WET/24617		
30125609008	MW-37	EPA 9050A	WET/24617		
30125609009	MW-87	EPA 9050A	WET/24617		
30125609010	MW-32	EPA 9050A	WET/24617		
30125609011	MW-36	EPA 9050A	WET/24617		
30125609012	MW-17	EPA 9050A	WET/24617		
30125609013	MW-15	EPA 9050A	WET/24617		
30125609014	MW-34D	EPA 9050A	WET/24617		
30125609015	MW-34S	EPA 9050A	WET/24617		
30125609016	MW-14	EPA 9050A	WET/24617		
30125609017	MW-39D	EPA 9050A	WET/24617		
30125609018	MW-39S	EPA 9050A	WET/24617		
30125609001	MW-10	SM 4500-CN I	WETA/30467		
30125609002	MW-8	SM 4500-CN I	WETA/30467		
30125609003	MW-11	SM 4500-CN I	WETA/30467		
30125609004	MW-5	SM 4500-CN I	WETA/30467		
30125609005	MW-55	SM 4500-CN I	WETA/30467		
30125609006	MW-7	SM 4500-CN I	WETA/30467		
30125609007	MW-35	SM 4500-CN I	WETA/30467		
30125609008	MW-37	SM 4500-CN I	WETA/30467		
30125609009	MW-87	SM 4500-CN I	WETA/30467		
30125609010	MW-32	SM 4500-CN I	WETA/30467		
30125609011	MW-36	SM 4500-CN I	WETA/30467		
30125609012	MW-17	SM 4500-CN I	WETA/30467		
30125609013	MW-15	SM 4500-CN I	WETA/30467		
30125609014	MW-34D	SM 4500-CN I	WETA/30467		
30125609015	MW-34S	SM 4500-CN I	WETA/30467		
30125609016	MW-14	SM 4500-CN I	WETA/30467		
30125609017	MW-39D	SM 4500-CN I	WETA/30467		
30125609018	MW-39S	SM 4500-CN I	WETA/30467		
30125609001	MW-10	SM 4500-CN-E	WETA/17283		
30125609002	MW-8	SM 4500-CN-E	WETA/17283		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125609

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125609003	MW-11	SM 4500-CN-E	WETA/17283		
30125609004	MW-5	SM 4500-CN-E	WETA/17283		
30125609005	MW-55	SM 4500-CN-E	WETA/17283		
30125609006	MW-7	SM 4500-CN-E	WETA/17283		
30125609007	MW-35	SM 4500-CN-E	WETA/17283		
30125609008	MW-37	SM 4500-CN-E	WETA/17283		
30125609009	MW-87	SM 4500-CN-E	WETA/17283		
30125609010	MW-32	SM 4500-CN-E	WETA/17283		
30125609011	MW-36	SM 4500-CN-E	WETA/17283		
30125609012	MW-17	SM 4500-CN-E	WETA/17283		
30125609013	MW-15	SM 4500-CN-E	WETA/17283		
30125609014	MW-34D	SM 4500-CN-E	WETA/17283		
30125609015	MW-34S	SM 4500-CN-E	WETA/17283		
30125609016	MW-14	SM 4500-CN-E	WETA/17283		
30125609017	MW-39D	SM 4500-CN-E	WETA/17283		
30125609018	MW-39S	SM 4500-CN-E	WETA/17283		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1856736

Section A Required Client Information:

Company: LEIDOS
Address: 3000 WHARTON CIRCLE
SUITE 176 PHILADELPHIA WV 26059
Email To: ROBERT.L.FARGO@LEIDOS.COM
Phone: 304.547.2120 Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: ROBERT FARGO
Copy To:
Purchase Order No.: P010161725
Project Name: ORMET CERCLA
Project Number: 305968.00.1000.0200

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference: 20140506RDC-01
Pace Project Manager: RACHEL CHRISTNER
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☒ OTHER CERCLA

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N): pH, SPECIFIC CONDS. Y; FLUORIDE N; TOTAL CYANIDE 335.4 N; WAD CYANIDE 4500CN N; DIS. METALS 6010 ICP Y; VOC 8260B N

METALS FIELD FILTERED

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	pH, SPECIFIC CONDS.	FLUORIDE	TOTAL CYANIDE 335.4	WAD CYANIDE 4500CN	DIS. METALS 6010 ICP	VOC 8260B	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-10	WT	C	7/21/14	1440	7/21/14	1504		4	X		X		X					X		X	X	X			001
2	MW-8	↓	↓	↓	1519	↓	1535		4	X		X		X					X		X	X	X			002
3	MW-11	↓	↓	↓	1546	↓	1600		4	X		X		X					X		X	X	X			003
4	MW-5	↓	↓	↓	1612	↓	1630		7	X		X	X	X					X		X	X	X	X		004
5	MW-55	↓	↓	↓	1612	↓	1630		7	X		X	X	X					X		X	X	X	X		005
6	MW-7	↓	↓	↓	1657	↓	1715		4	X		X		X					X		X	X	X			006
7	MW-35	↓	↓	7/22/14	0906	0910	0910		4	X		X		X					X		X	X	X			007
8	MW-37	↓	↓	↓	0933	7/22/14	0938		4	X		X		X					X		X	X	X			008
9	MW-87	↓	↓	↓	0933	↓	0958		4	X		X		X					X		X	X	X			009
10	MW-32	↓	↓	↓	1004	↓	1015		4	X		X		X					X		X	X	X			010
11	MW-36	↓	↓	↓	1033	↓	1042		4	X		X		X					X		X	X	X			011
12	MW-17	↓	↓	↓	1111	↓	1122		4	X		X		X					X		X	X	X			012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
DIS. METALS FIELD FILTERED	[signature] / LEIDOS	7/23/14	1110	[signature] / PACE	7/23/14	1110				
	[signature] / PACE	7/23/14	1150	[signature]	7-23-14	1150				
	[signature]	7-23-14	1130	[signature]	7-23-14	1330	0.8 / 1.3	Y	Y	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: RYAN LAURICH
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7/22/14

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1856737

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: LEIDOS	Report To: ROBERT FARGO	Attention:
Address: 300 WHARTON CIRCLE	Copy To:	Company Name:
SUITE 176 TRIADELPHIA WV 26059		Address:
Email To: ROBERT.L.FARGO@LEIDOS.COM	Purchase Order No.: P01061725	Pace Quote Reference: 20140506RDC-01
Phone: 304.547.2120 Fax:	Project Name: ORMET CERCLA	Pace Project Manager: RACHEL CHRISTNER
Requested Due Date/TAT: STD.	Project Number: 305968.00.1000.0200	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CERCLA

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	pH, SPEC. COND	FLUORIDE	TOT CYANIDE 335.4	WAD CYANIDE 4500CNI	DIS METALS 6010 ICP	VOC 8260B	Residual Chlorine (Y/N)	METALS FIELD FILTERED 30125609 Pace Project No./ Lab I.D.
1	MW-15	W	C	7/22/14	1246	7/22/14	1255		4	X		X		X					X		X	X	X			013
2	MW-34D				1309		1320		4	X		X		X					X		X	X	X			014
3	MW-34S				1328		1335		4	X		X		X					X		X	X	X			015
4	MW-14				1357		1410		4	X		X		X					X		X	X	X			016
5	MW-39D				1431		1442		4	X		X		X					X		X	X	X			017
6	MW-39S				1449		1457		4	X		X		X					X		X	X	X			018
7		W	7/22/14																							
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DIS METALS FIELD FILTERED	[signature] / LEIDOS	7/23/14	1110	[signature] / PACE	7/23/14	1110				
	[signature] / PACE	7/23/14	1150	[signature]	7-23-14	1150				
	[signature]	7-23-14	1230	[signature]	7-23-14	1330	0.8 / 1.3	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: RYAN LAURICH

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 07/22/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

30125609

Pace Analytical

Client Name: LEIDOS

Project #

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ (Other) Ziploc

Thermometer Used 7 **Type of Ice:** (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 0.9 °C **Correction Factor:** -0.1 °C **Final Temp:** 0.8 °C

Temp should be above freezing to 6°C 1.4 -0.1 **Comments:** 1.3

Date and Initials of person examining contents: AMC 7-23-14

Chain of Custody Present:	☒ Yes	☐ No	☐ N/A
Chain of Custody Filled Out:	☒ Yes	☐ No	☐ N/A
Chain of Custody Relinquished:	☒ Yes	☐ No	☐ N/A
Sampler Name & Signature on COC:	☒ Yes	☐ No	☐ N/A
Samples Arrived within Hold Time:	☒ Yes	☐ No	☐ N/A
Short Hold Time Analysis (<72hr):	☒ Yes	☐ No	☐ N/A
Rush Turn Around Time Requested:	☐ Yes	☒ No	☐ N/A
Sufficient Volume:	☒ Yes	☐ No	☐ N/A
Correct Containers Used:	☒ Yes	☐ No	☐ N/A
-Pace Containers Used:	☒ Yes	☐ No	☐ N/A
Containers Intact:	☒ Yes	☐ No	☐ N/A
Filtered volume received for Dissolved tests	☒ Yes	☐ No	☐ N/A
Sample Labels match COC:	☒ Yes	☐ No	☐ N/A
-Includes date/time/ID/Analysis Matrix: WT			
All containers needing preservation have been checked.	☒ Yes	☐ No	☐ N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes	☐ No	☐ N/A
exceptions: (VOA) coliform, TOC, O&G, WI-DRO (water)	☒ Yes	☐ No	
Samples checked for dechlorination:	☒ Yes	☐ No	☐ N/A
Headspace in VOA Vials (>6mm):	☐ Yes	☒ No	☐ N/A
Trip Blank Present:	☐ Yes	☒ No	☐ N/A
Trip Blank Custody Seals Present	☐ Yes	☐ No	☒ N/A
Pace Trip Blank Lot # (if purchased):			

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	PHC2
Initial when completed	AML
Lot # of added preservative	
14.	
15.	
16.	

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Bob Fargo Date/Time: 7/24/14 10:25

Comments/ Resolution:

Received confirmation from client that Fluoride does need analyzed.

Project Manager Review: [signature] **Date:** 7/24/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

page 2

Project Number: 3012560 9

Client Name: LEIDOS

						018	006	005	004	003	001	Item No.
						ET	ET	ET	ET	ET	ET	Matrix Code
												Glass Jar (120 / 250 / 500 / 1L)
												Soil kit (2 SB, 1M, soil jar)
						—	—	—	—	—	—	Chemistry (250) / 500 / 1L)
												Organics (1L)
												Nutrient (250 / 500)
												Phenolics (250 ml)
												TOC (40 ml / 250 ml)
												TOX (250 ml)
												Total Metals
						—	—	—	—	—	—	Dissolved Metals preserved (Y) N
												O & G (1L)
												TPH (1L)
								4	3			VOA (40 ml 30 ml)
						2	2	2	2	2	2	Cyanide (250 ml)
												Sulfide (500 ml)
												Bacteria (120 ml)
												Wipes / swipe/ smear/ filter
												Radchem Nalgene (125 / 250 / 500 / 1L)
												Radchem Nalgene (1/2 gal. / 1 gal.L)
												Cubitainer (500 ml / 4L)
												Ziploc
												Other
												Other

SCURF Back (C016-4 15May2012).xls

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 08, 2014

Mr. Robert L. Fargo
Leidos Engineering LLC
300 Wharton Circle, Suite 176
Triadelphia, WV 26059

RE: Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Samantha Bayura

Samantha Bayura for
Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30125843001	MW-18	Water	07/23/14 08:52	07/24/14 13:20
30125843002	MW-40D	Water	07/23/14 14:50	07/24/14 13:20
30125843003	MW-42S	Water	07/23/14 13:47	07/24/14 13:20
30125843004	MW-42D	Water	07/23/14 13:35	07/24/14 13:20
30125843005	MW-12	Water	07/23/14 11:50	07/24/14 13:20
30125843006	MW-19	Water	07/23/14 11:13	07/24/14 13:20
30125843007	MW-31	Water	07/23/14 14:10	07/24/14 13:20
30125843008	MW-16	Water	07/23/14 09:52	07/24/14 13:20
30125843009	MW-79D	Water	07/23/14 10:25	07/24/14 13:20
30125843010	MW-28	Water	07/23/14 09:25	07/24/14 13:20
30125843011	MW-29S	Water	07/23/14 10:41	07/24/14 13:20
30125843012	MW-29D	Water	07/23/14 10:25	07/24/14 13:20
30125843013	MW-40S	Water	07/23/14 15:00	07/24/14 13:20
30125843014	MW-2	Water	07/23/14 15:30	07/24/14 13:20
30125843015	MW-1	Water	07/23/14 16:00	07/24/14 13:20
30125843016	MW-51	Water	07/23/14 16:00	07/24/14 13:20
30125843017	MW-30	Water	07/23/14 16:25	07/24/14 13:20
30125843018	Equipment Blank	Water	07/23/14 16:40	07/24/14 13:20

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30125843001	MW-18	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	DJL	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843002	MW-40D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843003	MW-42S	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843004	MW-42D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843005	MW-12	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843006	MW-19	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30125843007	MW-31	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	DJL	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843008	MW-16	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843009	MW-79D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843010	MW-28	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843011	MW-29S	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843012	MW-29D	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30125843013	MW-40S	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843014	MW-2	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	DJL	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843015	MW-1	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843016	MW-51	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843017	MW-30	EPA 6010B	RTL	3	PASI-PA
		EPA 8260B	DJL	4	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K
		SM 4500-CN-E	BMS	1	PASI-PA
30125843018	Equipment Blank	EPA 6010B	RTL	3	PASI-PA
		SM 4500F/C	JLW	1	PASI-PA
		EPA 9040B	DEH	1	PASI-PA
		EPA 9050A	KLB	1	PASI-PA
		SM 4500-CN I	NDL	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-CN-E	BMS	1	PASI-PA

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: EPA 6010B
Description: 6010 MET ICP,Dissolved
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for EPA 6010B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/13538

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30125843001,30125843011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 765947)
  - Sodium, Dissolved
- MS (Lab ID: 765950)
  - Sodium, Dissolved
- MSD (Lab ID: 765948)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: EPA 8260B
Description: 8260 MSV
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/20476

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: EPA 9040B
Description: 9040 pH
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for EPA 9040B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA recommended holding time.
- Equipment Blank (Lab ID: 30125843018)
- MW-1 (Lab ID: 30125843015)
- MW-12 (Lab ID: 30125843005)
- MW-16 (Lab ID: 30125843008)
- MW-18 (Lab ID: 30125843001)
- MW-19 (Lab ID: 30125843006)
- MW-2 (Lab ID: 30125843014)
- MW-28 (Lab ID: 30125843010)
- MW-29D (Lab ID: 30125843012)
- MW-29S (Lab ID: 30125843011)
- MW-30 (Lab ID: 30125843017)
- MW-31 (Lab ID: 30125843007)
- MW-40D (Lab ID: 30125843002)
- MW-40S (Lab ID: 30125843013)
- MW-42D (Lab ID: 30125843004)
- MW-42S (Lab ID: 30125843003)
- MW-51 (Lab ID: 30125843016)
- MW-79D (Lab ID: 30125843009)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000:02
Pace Project No.: 30125843

Method: EPA 9050A
Description: 9050 Specific Conductance
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for EPA 9050A. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: **SM 4500-CN I**
Description: Cyanide, Weak Acid Dissociable
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for SM 4500-CN I. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Method: SM 4500-CN-E
Description: 4500CNE Cyanide, Total
Client: Leidos Engineering, LLC
Date: August 08, 2014

General Information:
18 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/17315

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30125843003

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 766841)
  - Cyanide
- MSD (Lab ID: 766842)
  - Cyanide

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-18 **Lab ID: 30125843001** Collected: 07/23/14 08:52 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**56.8**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:29	7440-38-2	
Manganese, Dissolved	**225**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:29	7439-96-5	
Sodium, Dissolved	**273000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:29	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	ND	ug/L	5.0	0.12	1		07/30/14 10:29	127-18-4	M5
Surrogates									
4-Bromofluorobenzene (S)	93	%	85-115		1		07/30/14 10:29	460-00-4	M5
1,2-Dichloroethane-d4 (S)	98	%	77-119		1		07/30/14 10:29	17060-07-0	M5
Toluene-d8 (S)	106	%	85-115		1		07/30/14 10:29	2037-26-5	M5
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**73.5**	mg/L	5.0	0.94	50		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**9.3**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1140**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.026**	mg/L	0.0050	0.0024	1		08/05/14 10:12	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**14.6**	mg/L	1.0	0.29	100		08/06/14 18:43	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-40D **Lab ID: 30125843002** Collected: 07/23/14 14:50 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**7.8**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:39	7440-38-2	
Manganese, Dissolved	**558**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:39	7439-96-5	
Sodium, Dissolved	**210000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:39	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**36.0**	mg/L	5.0	0.94	50		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.8**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**924**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.038**	mg/L	0.0050	0.0024	1		08/05/14 10:12	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.1**	mg/L	1.0	0.29	100		08/06/14 18:44	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-42S **Lab ID: 30125843003** Collected: 07/23/14 13:47 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:41	7440-38-2	
Manganese, Dissolved	**500**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:41	7439-96-5	
Sodium, Dissolved	**452000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:41	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**20.9**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**5.9**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**2490**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.089**	mg/L	0.0050	0.0024	1		08/05/14 10:13	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.8**	mg/L	0.10	0.029	10		08/06/14 18:04	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-42D **Lab ID: 30125843004** Collected: 07/23/14 13:35 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:43	7440-38-2	
Manganese, Dissolved	**426**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:43	7439-96-5	
Sodium, Dissolved	**706000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:43	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**27.4**	mg/L	0.20	0.037	2		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.7**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**2790**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.12**	mg/L	0.0050	0.0024	1		08/05/14 10:16	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**2.6**	mg/L	0.10	0.029	10		08/06/14 18:08	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-12 **Lab ID: 30125843005** Collected: 07/23/14 11:50 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:46	7440-38-2	
Manganese, Dissolved	**1580**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:46	7439-96-5	
Sodium, Dissolved	**45100**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:46	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**1.0**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**9.0**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**563**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.0075**	mg/L	0.0050	0.0024	1		08/05/14 10:17	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:08	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-19 **Lab ID: 30125843006** Collected: 07/23/14 11:13 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**5.6**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 16:59	7440-38-2	
Manganese, Dissolved	ND	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 16:59	7439-96-5	
Sodium, Dissolved	**66200**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 16:59	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.43**	mg/L	0.10	0.019	1		08/04/14 14:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**9.3**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1010**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	ND	mg/L	0.0050	0.0024	1		08/05/14 10:17	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:12	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-31 **Lab ID: 30125843007** Collected: 07/23/14 14:10 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**20.1**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:02	7440-38-2	
Manganese, Dissolved	**482**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:02	7439-96-5	
Sodium, Dissolved	**255000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:02	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	**22.7**	ug/L	5.0	0.12	1		07/30/14 11:44	127-18-4	M5
Surrogates									
4-Bromofluorobenzene (S)	96	%	85-115		1		07/30/14 11:44	460-00-4	M5
1,2-Dichloroethane-d4 (S)	100	%	77-119		1		07/30/14 11:44	17060-07-0	M5
Toluene-d8 (S)	105	%	85-115		1		07/30/14 11:44	2037-26-5	M5
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**25.0**	mg/L	2.0	0.37	20		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.6**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1040**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.046**	mg/L	0.0050	0.0024	1		08/05/14 10:20	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**2.9**	mg/L	0.10	0.029	10		08/06/14 18:13	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-16 **Lab ID: 30125843008** Collected: 07/23/14 09:52 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**27.0**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:04	7440-38-2	
Manganese, Dissolved	**579**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:04	7439-96-5	
Sodium, Dissolved	**225000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:04	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**31.6**	mg/L	1.0	0.19	10		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.4**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1020**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.028**	mg/L	0.0050	0.0024	1		08/05/14 10:20	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.1**	mg/L	1.0	0.29	100		08/06/14 18:46	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-79D **Lab ID: 30125843009** Collected: 07/23/14 10:25 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:07	7440-38-2	
Manganese, Dissolved	**1520**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:07	7439-96-5	
Sodium, Dissolved	**79200**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:07	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**7.5**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.0**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**671**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.035**	mg/L	0.0050	0.0024	1		08/05/14 10:21	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.3**	mg/L	0.10	0.029	10		08/06/14 18:16	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-28 **Lab ID: 30125843010** Collected: 07/23/14 09:25 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:09	7440-38-2	
Manganese, Dissolved	**5.6**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:09	7439-96-5	
Sodium, Dissolved	**57000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:09	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.45**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.1**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**390**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.011**	mg/L	0.0050	0.0024	1		08/05/14 10:25	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:16	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-29S **Lab ID: 30125843011** Collected: 07/23/14 10:41 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:11	7440-38-2	
Manganese, Dissolved	**312**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:11	7439-96-5	
Sodium, Dissolved	**215000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:11	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**24.0**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.2**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1230**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.033**	mg/L	0.0050	0.0024	1		08/05/14 10:29	57-12-5	D6
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.8**	mg/L	0.10	0.029	10		08/06/14 18:17	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-29D **Lab ID: 30125843012** Collected: 07/23/14 10:25 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:18	7440-38-2	
Manganese, Dissolved	**1530**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:18	7439-96-5	
Sodium, Dissolved	**77000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:18	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**8.5**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**7.5**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**687**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.048**	mg/L	0.0050	0.0024	1		08/05/14 10:30	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.2**	mg/L	0.10	0.029	10		08/06/14 18:18	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-40S **Lab ID: 30125843013** Collected: 07/23/14 15:00 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:21	7440-38-2	
Manganese, Dissolved	**555**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:21	7439-96-5	
Sodium, Dissolved	**243000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:21	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.6**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**8.1**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1050**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.030**	mg/L	0.0050	0.0024	1		08/05/14 10:33	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**2.5**	mg/L	1.0	0.29	100		08/06/14 18:47	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-2 **Lab ID: 30125843014** Collected: 07/23/14 15:30 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	**33.9**	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:28	7440-38-2	
Manganese, Dissolved	**619**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:28	7439-96-5	
Sodium, Dissolved	**244000**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:28	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	**14.1**	ug/L	5.0	0.12	1		07/30/14 12:34	127-18-4	M5
Surrogates									
4-Bromofluorobenzene (S)	98	%	85-115		1		07/30/14 12:34	460-00-4	M5
1,2-Dichloroethane-d4 (S)	99	%	77-119		1		07/30/14 12:34	17060-07-0	M5
Toluene-d8 (S)	105	%	85-115		1		07/30/14 12:34	2037-26-5	M5
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**27.1**	mg/L	0.50	0.094	5		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**9.2**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**1200**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.070**	mg/L	0.0050	0.0024	1		08/05/14 10:33	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**6.6**	mg/L	1.0	0.29	100		08/06/14 18:49	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-1 **Lab ID: 30125843015** Collected: 07/23/14 16:00 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:30	7440-38-2	
Manganese, Dissolved	**2010**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:30	7439-96-5	
Sodium, Dissolved	**41100**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:30	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.16**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.0**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**619**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	ND	mg/L	0.0050	0.0024	1		08/05/14 10:34	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:22	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-51 **Lab ID: 30125843016** Collected: 07/23/14 16:00 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:33	7440-38-2	
Manganese, Dissolved	**1960**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:33	7439-96-5	
Sodium, Dissolved	**40300**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:33	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.13**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.0**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**622**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.027**	mg/L	0.0050	0.0024	1		08/05/14 10:34	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:26	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: MW-30 **Lab ID: 30125843017** Collected: 07/23/14 16:25 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:35	7440-38-2	
Manganese, Dissolved	**530**	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:35	7439-96-5	
Sodium, Dissolved	**59900**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:35	7440-23-5	
8260 MSV	Analytical Method: EPA 8260B								
Tetrachloroethene	**44.3**	ug/L	5.0	0.12	1		07/30/14 18:22	127-18-4	M5
Surrogates									
4-Bromofluorobenzene (S)	96	%	85-115		1		07/30/14 18:22	460-00-4	M5
1,2-Dichloroethane-d4 (S)	98	%	77-119		1		07/30/14 18:22	17060-07-0	M5
Toluene-d8 (S)	104	%	85-115		1		07/30/14 18:22	2037-26-5	M5
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**12.0**	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.4**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**497**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	**0.025**	mg/L	0.0050	0.0024	1		08/05/14 10:37	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.6**	mg/L	0.10	0.029	10		08/06/14 18:26	57-12-5	

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ANALYTICAL RESULTS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Sample: Equipment Blank **Lab ID: 30125843018** Collected: 07/23/14 16:40 Received: 07/24/14 13:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	5.0	3.6	1	07/29/14 13:59	07/30/14 17:37	7440-38-2	
Manganese, Dissolved	ND	ug/L	5.0	0.73	1	07/29/14 13:59	07/30/14 17:37	7439-96-5	
Sodium, Dissolved	**1300**	ug/L	1000	341	1	07/29/14 13:59	07/30/14 17:37	7440-23-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	ND	mg/L	0.10	0.019	1		08/05/14 11:00	16984-48-8	
9040 pH	Analytical Method: EPA 9040B								
pH	**6.3**	Std. Units	1.0	1.0	1		07/25/14 21:00		H6
9050 Specific Conductance	Analytical Method: EPA 9050A								
Specific Conductance	**12.4**	umhos/cm	1.0	1.0	1		08/06/14 12:45		
Cyanide, Weak Acid Dissociable	Analytical Method: SM 4500-CN I								
Cyanide, Dissociable	ND	mg/L	0.0050	0.0024	1		08/05/14 10:37	57-12-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.10	0.029	10		08/06/14 18:29	57-12-5	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: MPRP/13538 — Analysis Method: EPA 6010B
QC Batch Method: EPA 3005A — Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

METHOD BLANK: 765944 — Matrix: Water
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	5.0	07/30/14 16:25	
Manganese, Dissolved	ug/L	ND	5.0	07/30/14 16:25	
Sodium, Dissolved	ug/L	ND	1000	07/30/14 16:25	

LABORATORY CONTROL SAMPLE: 765945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	500	462	92	80-120	
Manganese, Dissolved	ug/L	500	473	95	80-120	
Sodium, Dissolved	ug/L	5000	4680	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 765947 765948

Parameter	Units	30125843001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	56.8	500	500	556	555	100	100	75-125	0	20	
Manganese, Dissolved	ug/L	225	500	500	726	717	100	98	75-125	1	20	
Sodium, Dissolved	ug/L	273000	5000	5000	276000	273000	58	-2	75-125	1	20	M1

MATRIX SPIKE SAMPLE: 765950

Parameter	Units	30125843011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	ND	500	524	105	75-125	
Manganese, Dissolved	ug/L	312	500	828	103	75-125	
Sodium, Dissolved	ug/L	215000	5000	226000	214	75-125	M1

SAMPLE DUPLICATE: 765946

Parameter	Units	30125843001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	ug/L	56.8	49.9	13	20	
Manganese, Dissolved	ug/L	225	216	4	20	
Sodium, Dissolved	ug/L	273000	263000	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

SAMPLE DUPLICATE: 765949

Parameter	Units	30125843011 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	ug/L	ND	ND		20	
Manganese, Dissolved	ug/L	312	309	1	20	
Sodium, Dissolved	ug/L	215000	214000	0	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: MSV/20476 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV
Associated Lab Samples: 30125843001, 30125843007, 30125843014, 30125843017

METHOD BLANK: 766338 Matrix: Water
Associated Lab Samples: 30125843001, 30125843007, 30125843014, 30125843017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	1.0	07/30/14 09:40	M5
1,2-Dichloroethane-d4 (S)	%	99	77-119	07/30/14 09:40	M5
4-Bromofluorobenzene (S)	%	94	85-115	07/30/14 09:40	M5
Toluene-d8 (S)	%	102	85-115	07/30/14 09:40	M5

LABORATORY CONTROL SAMPLE: 766339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	20	18.5	93	62-125	M5
1,2-Dichloroethane-d4 (S)	%			102	77-119	M5
4-Bromofluorobenzene (S)	%			92	85-115	M5
Toluene-d8 (S)	%			102	85-115	M5

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WET/24597 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006

METHOD BLANK: 768388 | Matrix: Water
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	08/04/14 14:00	

LABORATORY CONTROL SAMPLE: 768389

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 768390 768391

Parameter	Units	30126143001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.28	4	4	4.2	4.4	98	102	85-115	4	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WET/24619 Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

METHOD BLANK: 769022 Matrix: Water
Associated Lab Samples: 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	08/05/14 11:00	

LABORATORY CONTROL SAMPLE & LCSD: 769023 769024

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Fluoride	mg/L	2	2.0	1.9	102	96	85-115	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 769025 769026

Parameter	Units	30125776002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.88	4	4	4.6	4.5	93	91	85-115	2	20	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WET/24468 Analysis Method: EPA 9040B
QC Batch Method: EPA 9040B Analysis Description: 9040 pH
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

SAMPLE DUPLICATE: 764893

Parameter	Units	30125814001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.0	8.0	0		H6

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WET/24633 — Analysis Method: EPA 9050A
QC Batch Method: EPA 9050A — Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

METHOD BLANK: 769595 — Matrix: Water
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	08/06/14 12:45	

LABORATORY CONTROL SAMPLE: 769596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1350	96	90-110	

SAMPLE DUPLICATE: 769597

Parameter	Units	30125843001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1140	1140	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WETA/30484 | Analysis Method: SM 4500-CN I
QC Batch Method: SM 4500-CN I | Analysis Description: SM4500CN-I Cyanide WAD
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009

METHOD BLANK: 1420050 | Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Dissociable	mg/L	ND	0.0050	08/05/14 09:52	

LABORATORY CONTROL SAMPLE: 1420051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	.1	0.090	90	80-120	

MATRIX SPIKE SAMPLE: 1420053

Parameter	Units	10275293008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	<0.0050	.1	0.097	92	80-120	

SAMPLE DUPLICATE: 1420052

Parameter	Units	10275293002 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Dissociable	mg/L	<0.0050	.0047J		10	

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WETA/30486 | Analysis Method: SM 4500-CN I
QC Batch Method: SM 4500-CN I | Analysis Description: SM4500CN-I Cyanide WAD
Associated Lab Samples: 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

METHOD BLANK: 1420059 | Matrix: Water
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Dissociable	mg/L	ND	0.0050	08/05/14 10:22	

LABORATORY CONTROL SAMPLE: 1420060

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	.1	0.090	90	80-120	

MATRIX SPIKE SAMPLE: 1420061

Parameter	Units	30125843010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Dissociable	mg/L	0.011	.1	0.12	107	80-120	

SAMPLE DUPLICATE: 1420062

Parameter	Units	30125843011 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Dissociable	mg/L	0.033	0.028	18	10	D6

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QUALITY CONTROL DATA

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

QC Batch: WETA/17315 — Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E — Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

METHOD BLANK: 766725 — Matrix: Water
Associated Lab Samples: 30125843001, 30125843002, 30125843003, 30125843004, 30125843005, 30125843006, 30125843007, 30125843008, 30125843009, 30125843010, 30125843011, 30125843012, 30125843013, 30125843014, 30125843015, 30125843016, 30125843017, 30125843018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.010	08/06/14 17:59	

LABORATORY CONTROL SAMPLE: 766726

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.19	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 766841 — 766842

Parameter	Units	30125843003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	1.8	1	1	1.8	1.6	-2	-20	90-110	11	20	M3

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QUALIFIERS

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City
PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/20476

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
M5	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125843001	MW-18	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843002	MW-40D	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843003	MW-42S	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843004	MW-42D	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843005	MW-12	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843006	MW-19	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843007	MW-31	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843008	MW-16	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843009	MW-79D	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843010	MW-28	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843011	MW-29S	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843012	MW-29D	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843013	MW-40S	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843014	MW-2	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843015	MW-1	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843016	MW-51	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843017	MW-30	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843018	Equipment Blank	EPA 3005A	MPRP/13538	EPA 6010B	ICP/12836
30125843001	MW-18	EPA 8260B	MSV/20476		
30125843007	MW-31	EPA 8260B	MSV/20476		
30125843014	MW-2	EPA 8260B	MSV/20476		
30125843017	MW-30	EPA 8260B	MSV/20476		
30125843001	MW-18	SM 4500F/C	WET/24597		
30125843002	MW-40D	SM 4500F/C	WET/24597		
30125843003	MW-42S	SM 4500F/C	WET/24597		
30125843004	MW-42D	SM 4500F/C	WET/24597		
30125843005	MW-12	SM 4500F/C	WET/24597		
30125843006	MW-19	SM 4500F/C	WET/24597		
30125843007	MW-31	SM 4500F/C	WET/24619		
30125843008	MW-16	SM 4500F/C	WET/24619		
30125843009	MW-79D	SM 4500F/C	WET/24619		
30125843010	MW-28	SM 4500F/C	WET/24619		
30125843011	MW-29S	SM 4500F/C	WET/24619		
30125843012	MW-29D	SM 4500F/C	WET/24619		
30125843013	MW-40S	SM 4500F/C	WET/24619		
30125843014	MW-2	SM 4500F/C	WET/24619		
30125843015	MW-1	SM 4500F/C	WET/24619		
30125843016	MW-51	SM 4500F/C	WET/24619		
30125843017	MW-30	SM 4500F/C	WET/24619		
30125843018	Equipment Blank	SM 4500F/C	WET/24619		
30125843001	MW-18	EPA 9040B	WET/24468		
30125843002	MW-40D	EPA 9040B	WET/24468		
30125843003	MW-42S	EPA 9040B	WET/24468		
30125843004	MW-42D	EPA 9040B	WET/24468		
30125843005	MW-12	EPA 9040B	WET/24468		
30125843006	MW-19	EPA 9040B	WET/24468		
30125843007	MW-31	EPA 9040B	WET/24468		

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125843008	MW-16	EPA 9040B	WET/24468		
30125843009	MW-79D	EPA 9040B	WET/24468		
30125843010	MW-28	EPA 9040B	WET/24468		
30125843011	MW-29S	EPA 9040B	WET/24468		
30125843012	MW-29D	EPA 9040B	WET/24468		
30125843013	MW-40S	EPA 9040B	WET/24468		
30125843014	MW-2	EPA 9040B	WET/24468		
30125843015	MW-1	EPA 9040B	WET/24468		
30125843016	MW-51	EPA 9040B	WET/24468		
30125843017	MW-30	EPA 9040B	WET/24468		
30125843018	Equipment Blank	EPA 9040B	WET/24468		
30125843001	MW-18	EPA 9050A	WET/24633		
30125843002	MW-40D	EPA 9050A	WET/24633		
30125843003	MW-42S	EPA 9050A	WET/24633		
30125843004	MW-42D	EPA 9050A	WET/24633		
30125843005	MW-12	EPA 9050A	WET/24633		
30125843006	MW-19	EPA 9050A	WET/24633		
30125843007	MW-31	EPA 9050A	WET/24633		
30125843008	MW-16	EPA 9050A	WET/24633		
30125843009	MW-79D	EPA 9050A	WET/24633		
30125843010	MW-28	EPA 9050A	WET/24633		
30125843011	MW-29S	EPA 9050A	WET/24633		
30125843012	MW-29D	EPA 9050A	WET/24633		
30125843013	MW-40S	EPA 9050A	WET/24633		
30125843014	MW-2	EPA 9050A	WET/24633		
30125843015	MW-1	EPA 9050A	WET/24633		
30125843016	MW-51	EPA 9050A	WET/24633		
30125843017	MW-30	EPA 9050A	WET/24633		
30125843018	Equipment Blank	EPA 9050A	WET/24633		
30125843001	MW-18	SM 4500-CN I	WETA/30484		
30125843002	MW-40D	SM 4500-CN I	WETA/30484		
30125843003	MW-42S	SM 4500-CN I	WETA/30484		
30125843004	MW-42D	SM 4500-CN I	WETA/30484		
30125843005	MW-12	SM 4500-CN I	WETA/30484		
30125843006	MW-19	SM 4500-CN I	WETA/30484		
30125843007	MW-31	SM 4500-CN I	WETA/30484		
30125843008	MW-16	SM 4500-CN I	WETA/30484		
30125843009	MW-79D	SM 4500-CN I	WETA/30484		
30125843010	MW-28	SM 4500-CN I	WETA/30486		
30125843011	MW-29S	SM 4500-CN I	WETA/30486		
30125843012	MW-29D	SM 4500-CN I	WETA/30486		
30125843013	MW-40S	SM 4500-CN I	WETA/30486		
30125843014	MW-2	SM 4500-CN I	WETA/30486		
30125843015	MW-1	SM 4500-CN I	WETA/30486		
30125843016	MW-51	SM 4500-CN I	WETA/30486		
30125843017	MW-30	SM 4500-CN I	WETA/30486		
30125843018	Equipment Blank	SM 4500-CN I	WETA/30486		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ORMET CERCLA 305968.00.1000.02
Pace Project No.: 30125843

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30125843001	MW-18	SM 4500-CN-E	WETA/17315		
30125843002	MW-40D	SM 4500-CN-E	WETA/17315		
30125843003	MW-42S	SM 4500-CN-E	WETA/17315		
30125843004	MW-42D	SM 4500-CN-E	WETA/17315		
30125843005	MW-12	SM 4500-CN-E	WETA/17315		
30125843006	MW-19	SM 4500-CN-E	WETA/17315		
30125843007	MW-31	SM 4500-CN-E	WETA/17315		
30125843008	MW-16	SM 4500-CN-E	WETA/17315		
30125843009	MW-79D	SM 4500-CN-E	WETA/17315		
30125843010	MW-28	SM 4500-CN-E	WETA/17315		
30125843011	MW-29S	SM 4500-CN-E	WETA/17315		
30125843012	MW-29D	SM 4500-CN-E	WETA/17315		
30125843013	MW-40S	SM 4500-CN-E	WETA/17315		
30125843014	MW-2	SM 4500-CN-E	WETA/17315		
30125843015	MW-1	SM 4500-CN-E	WETA/17315		
30125843016	MW-51	SM 4500-CN-E	WETA/17315		
30125843017	MW-30	SM 4500-CN-E	WETA/17315		
30125843018	Equipment Blank	SM 4500-CN-E	WETA/17315		

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 2

1856736

Section A Required Client Information:

Company: LEIDOS
Address: 300 WHARTON CIRCLE
SUITE 176 PHILADELPHIA PA 19059
Email To: ROBERT.L.FARGO@LEIDOS.COM
Phone: 304.547.2120 Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: ROBERT FARGO
Copy To:
Purchase Order No.: P010161725
Project Name: ORMET CERCLA
Project Number: 305968.00.1000.0200

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference: 20140506RDC-01
Pace Project Manager: RACHEL CHRISTNER
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☒ OTHER CERCLA

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N): N, N, N, Y, N

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	pH, SPECIFIC CONDUCTIVITY	FLUORIDE	TOTAL CYANIDE 335.4	WAD CYANIDE 4500CN	DIS. METALS 6010 ICP	VOC 8260B	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-10	WT	C	7/21/14	1440	7/21/14	1504		4	X		X		X				X		X	X	X		
2	MW-8				1519		1535		4	X		X		X				X		X	X	X		
3	MW-11				1546		1600		4	X		X		X				X		X	X	X		
4	MW-5				1612		1630		7	X		X	X	X				X		X	X	X	X	
5	MW-55				1612		1630		7	X		X	X	X				X		X	X	X	X	
6	MW-7				1657		1715		4	X		X		X				X		X	X	X		
7	MW-35			7/22/14	0906	0910	0910		4	X		X		X				X		X	X	X		
8	MW-37				0935	7/22/14	0938		4	X		X		X				X		X	X	X		
9	MW-87				0933		0938		4	X		X		X				X		X	X	X		
10	MW-32				1004		1015		4	X		X		X				X		X	X	X		
11	MW-36				1033		1042		4	X		X		X				X		X	X	X		
12	MW-17				1111		1122		4	X		X		X				X		X	X	X		

METALS FIELD FILTERED

AC 7/08/14

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
DIS. METALS FIELD FILTERED	LEIDOS	7/23/14	1110	PACE	7/24/14	1110	
-Correct page from COC follows	PACE	7/24/14	1200	PACE	7/24/14	1205	
this page, included for	PACE	7/24/14	1320		7-24-14	1320	Y Y Y
Chain of Custody signatures							

AC 7/28/14

SAMPLER NAME AND SIGNATURE

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Leidos Engineering, LLC.	Report To:	Bob Fargo	Attention:	
Address:	300 Wharton Circle, Ste. 176	Copy To:		Company Name:	
	Triadelphia, WV 26059			Address:	
Email To:	robert.l.fargo@leidos.com	Purchase Order #:	P010161725	Pace Quote:	20140508RDC-01
Phone:	304-547-2120 Fax:	Project Name:	Ormet CERCLA	Pace Project Manager:	Rachel Christner
Requested Due Date:	Std. TAT	Project Number:	305968.00.0000.1000.0200	Pace Profile #:	

Regulatory Agency:

State / Location: OH

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test	pH, spec. cond., fluoride	Total CN	WAD CN	Diss. Metals (As, Mn, Ni)	VOCs (PCE)	Residual Chlorine (Y/N)	30125843
																		Y/N	N	N	N	Y	N		
1	MW-18	WT	G	23-Jul	0844	23-Jul	0852		7	1		1	3	2					X	X	X	X	X		ALL 001
2	MW-29D	WT	G	23-Jul	1011	23-Jul	1025		4	1		1		2					X	X	X	X			METALS 002
3	MW-40D	WT	G	23-Jul	1439	23-Jul	1450		4	1		1		2					X	X	X	X			FIELD 002
4	MWD-42S	WT	G	23-Jul	1340	23-Jul	1347		4	1		1		2					X	X	X	X			FILTERED 003
5	MW-42D	WT	G	23-Jul	1321	23-Jul	1335		4	1		1		2					X	X	X	X			004
6	MW-12	WT	G	23-Jul	1135	23-Jul	1150		4	1		1		2					X	X	X	X			005
7	MW-19	WT	G	23-Jul	1105	23-Jul	1113		4	1		1		2					X	X	X	X			006
8	MW-31	WT	G	23-Jul	1401	23-Jul	1410		7	1		1	3	2					X	X	X	X	X		007
9	MW-18	WT	G	23-Jul	0941	23-Jul	0952		4	1		1		2					X	X	X	X			008
10	MW-28	WT	G	23-Jul	0916	23-Jul	0925		4	1		1		2					X	X	X	X			010
11	MW-29S	WT	G	23-Jul	1033	23-Jul	1041		4	1		1		2					X	X	X	X			011
12	MW-79D	WT	G	23-Jul	1011	23-Jul	1025		4	1		1		2					X	X	X	X			009

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	R. Laurich / LEIDOS	7/24/2014	1110				

SAMPLER NAME AND SIGNATURE	
R. Laurich	
SIGNATURE of SAMPLER:	7/24/2014

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1856735

Section A Required Client Information:

Company: LEIDOS
Address: 300 LARTON CIRCLE
SUITE 176 TRIADELPHIA WV 26059
Email To: ROBERT.L.FARGO@LEIDOS.COM
Phone: 304.547.2120 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: ROBERT FARGO
Copy To:
Purchase Order No.: PO10161725
Project Name: ORMET CERCLA
Project Number: 305968.00.10490.07000

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference: 20140506 RDC-01
Pace Project Manager: RACHEL CHRISTNER
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CERCLA

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Y/N; Analysis Test: all SELCOAL FLUORIDE; TOT CYANIDE 335.4; WAD CYANIDE 4500CN; DIS. METALS GOLD XLP; VOC 8260 B

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test 1	2	3	4	5	6	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-40S	WT	C	7/23/14	1453	7/23/14	1500		4	X		X		X				X	X	X	X				013
2	MW-2	↓	↓	↓	1520	↓	1530		7	X		X	X	X				X	X	X	X	X			014
3	MW-1	↓	↓	↓	1553	↓	1600		4	X		X		X				X	X	X	X				015
4	MW-51	↓	↓	↓	1553	↓	1600		4	X		X		X				X	X	X	X				016
5	MW-30	↓	↓	↓	1619	↓	1625		7	X		X	X	X				X	X	X	X	X			017
6	EQUIPMENT BLANK	WT	G	—	—	1640 7/23/14	1640		4	X		X		X				X	X	X	X				018
7																									
8																									
9																									
10																									
11																									
12																									

METALS FIELD FILTERED

30125843

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	LEIDOS	7/24/14	1110	PACE	7/24/14	1110
	PACE	7/24/14	1200	PACE	7/24/14	1205
	PACE	7/24/14	1320		7/24/14	1320

SAMPLE CONDITIONS: Temp in °C: Seal; Received on Ice (Y/N): Y; Custody Sealed Cooler (Y/N): Y; Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: RYAN LACHICH
DATE Signed (MM/DD/YY): 7/24/14

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: LEIDOS

Project # 30125843

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap X Bubble Bags ___ None ___ Other _____

Thermometer Used #6 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 3.7, 4.2 °C Correction Factor: 3.1 -0.1 °C Final Temp: 3.6, 4.1 °C

SRA 7-24-14

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: SRA 7-24-14

				Comments:
Chain of Custody Present:	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes	☐ No	☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72hr):	☒ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume:	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used:	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used:	☒ Yes	☐ No	☐ N/A	
Containers Intact:	☒ Yes	☐ No	☐ N/A	10.
Filtered volume received for Dissolved tests	☒ Yes	☐ No	☐ N/A	11.
Sample Labels match COC:	☒ Yes	☐ No	☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: wt				
All containers needing preservation have been checked.	☒ Yes	☐ No	☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes	☐ No	☐ N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☒ Yes	☐ No		Initial when completed ___ Lot # of added preservative ___
Samples checked for dechlorination:	☒ Yes	☐ No	☐ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Present:	☐ Yes	☒ No	☐ N/A	16.
Trip Blank Custody Seals Present	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Everything on Page 2 of coc matches. Sent wrong Page #1 of COC

Correct COC received on 7/28/14. Page from previous day's COC included with report for COC signature information. RC 7/28/14

Project Manager Review: Rachel Schnitzler Date: 7/29/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Face Analytical

page 2

Project Number: 30125843

Client Name: LEIDOS

Item No.	001	002	003	004	005	006	007	008	009	010	011
Matrix Code	SL										
Glass Jar (120 / 250 / 500 / 1L)											
Soil kit (2 SB, 1M, soil jar)											
Chemistry (250 / 500 / 1L)	—	—	—	—	—	—	—	—	—	—	—
Organics (1L)											
Nutrient (250 / 500)											
Phenolics (250 ml)											
TOC (40 ml / 250 ml)											
TOX (250 ml)											
Total Metals	—	—	—	—	—	—	—	—	—	—	—
Dissolved Metals preserved Y N											
O & G (1L)											
TPH (1L)											
VOA (40 ml 30 ml)	2			2			2			2	
Cyanide (250 ml)	2	—	2	2	2	—	2	—	2	2	2
Sulfide (500 ml)											
Bacteria (120 ml)											
Wipes / swipe/ smear/ filter											
Radchem Nalgene (125 / 250 / 500 / 1L)											
Radchem Nalgene (1/2 gal. / 1 gal.L)											
Cubitainer (500 ml / 4L)											
Ziploc											
Other											
Other											

SCURF Back (C016-4 15May2012).xls

APPENDIX C

FIELD DUPLICATE RPD RESULTS

APPENDIX C
COMPARISON OF PRIMARY AND DUPLICATE SAMPLE RESULTS
JULY 2014 GROUNDWATER SAMPLES
FORMER ORMET PRIMARY CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	MW-1			MW-5			MW-29D			MW-37		
	Primary	Duplicate	RPD	Primary	Duplicate	RPD	Primary	Duplicate	RPD	Primary	Duplicate	RPD
Total Cyanide	< 0.010	< 0.010	0.00	3.3	3.0	9.52	1.2	1.3	8.00	0.13	0.14	7.41
WAD Cyanide	0.005	0.027	**137.50**	0.85	0.86	1.17	0.050	0.035	**35.29**	0.12	0.10	18.18
Fluoride	0.16	0.13	20.69	29.2	29.2	0.00	8.5	7.5	12.50	1.90	1.90	0.00
Arsenic	< 0.005	< 0.005	0.00	<0.0050	<0.0050	0.00	<0.0050	<0.0050	0.00	<0.0050	<0.0050	0.00
Manganese	2.01	1.96	2.52	0.246	0.237	3.66	1.53	1.52	0.66	0.0639	0.0536	17.53
Sodium	41.1	40.3	1.97	237	241	1.66	77	79.2	2.82	33.5	34.8	3.81
Tetrachloroethene	0.0365	0.0357	2.22	0.0070	0.0069	1.44	--	--	--	--	--	--

RPD - Relative Percent Difference = |Primary Result - Duplicate Result|/[(Primary Result + Duplicate Result)/2]

NOTE: Validation protocols for laboratory data typical use a threshold for maximum recommended RPD of 20%. It should be recognized that this criterion is meant to be applied to laboratory-prepared duplicate samples. Field duplicate samples prepared at the time of sample collection are potentially subject to conditions that can result in greater RPD values.

Additional quality assurance/quality control data for the 2014 groundwater results are presented in the laboratory report provided in Appendix B.

APPENDIX D

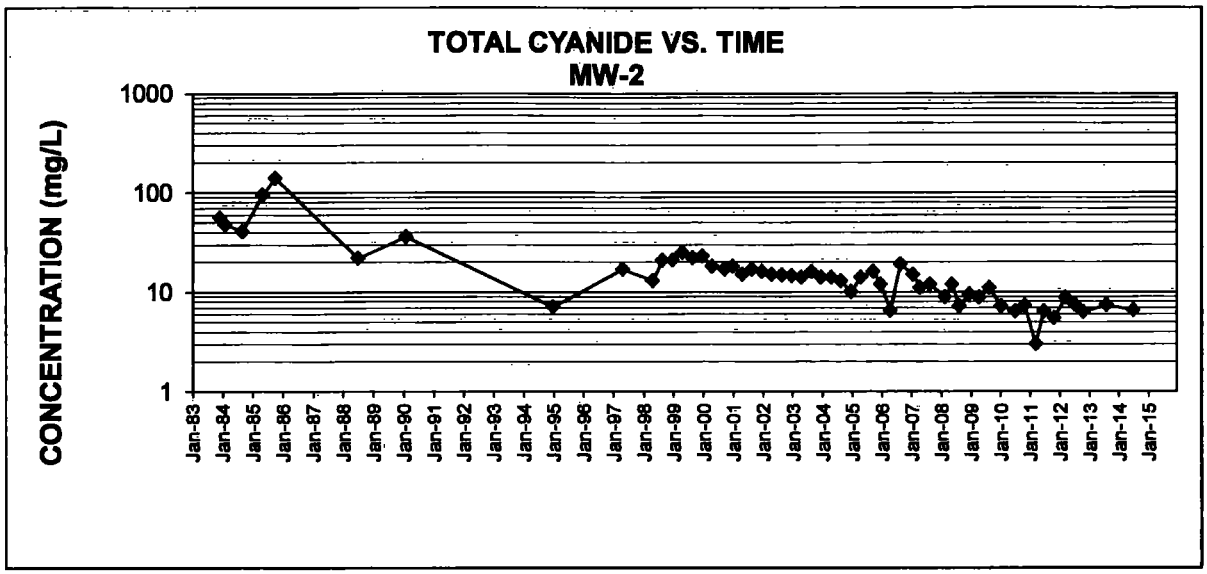
CONCENTRATION v. TIME GRAPHS

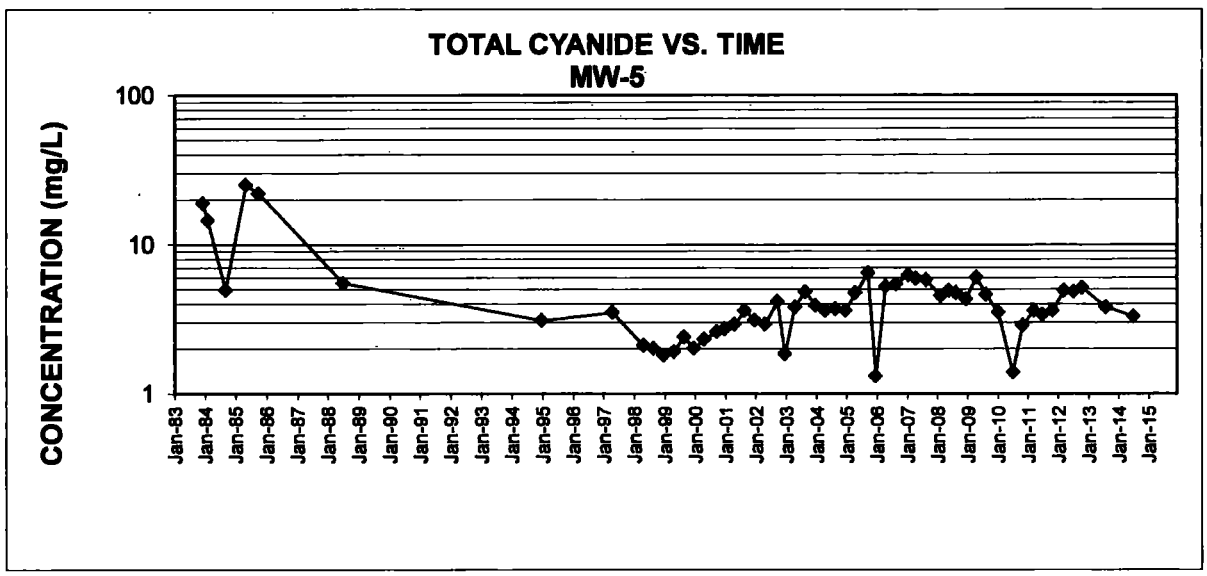
APPENDIX D-1	Total Cyanide
APPENDIX D-2	Fluoride
APPENDIX D-3	Arsenic
APPENDIX D-4	Manganese
APPENDIX D-5	Tetrachloroethene
APPENDIX D-6	Sodium

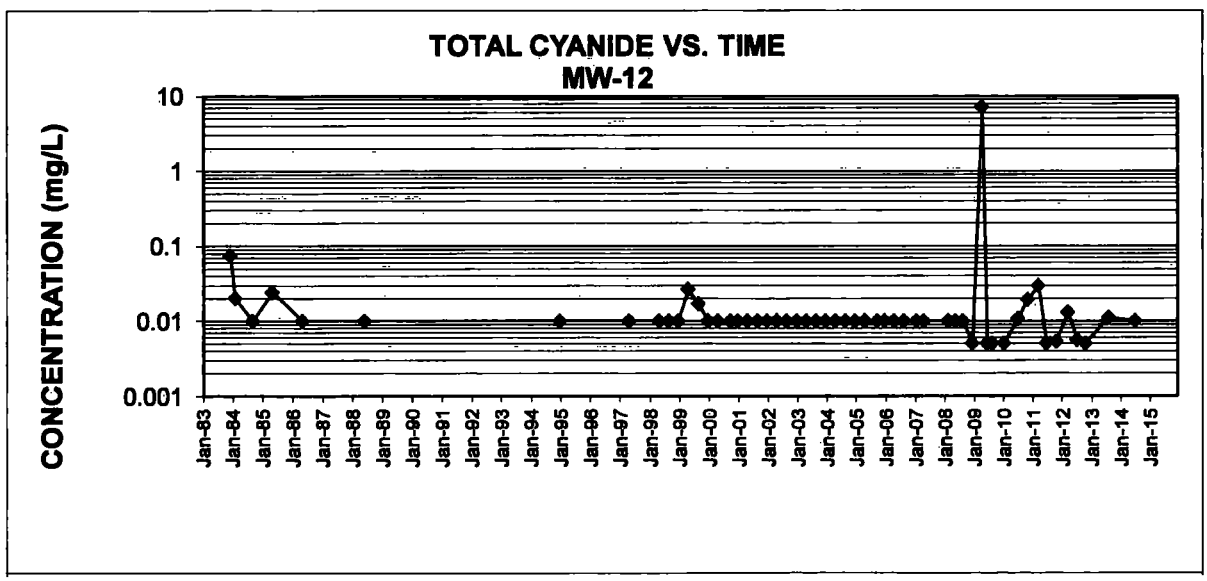
APPENDIX D-1

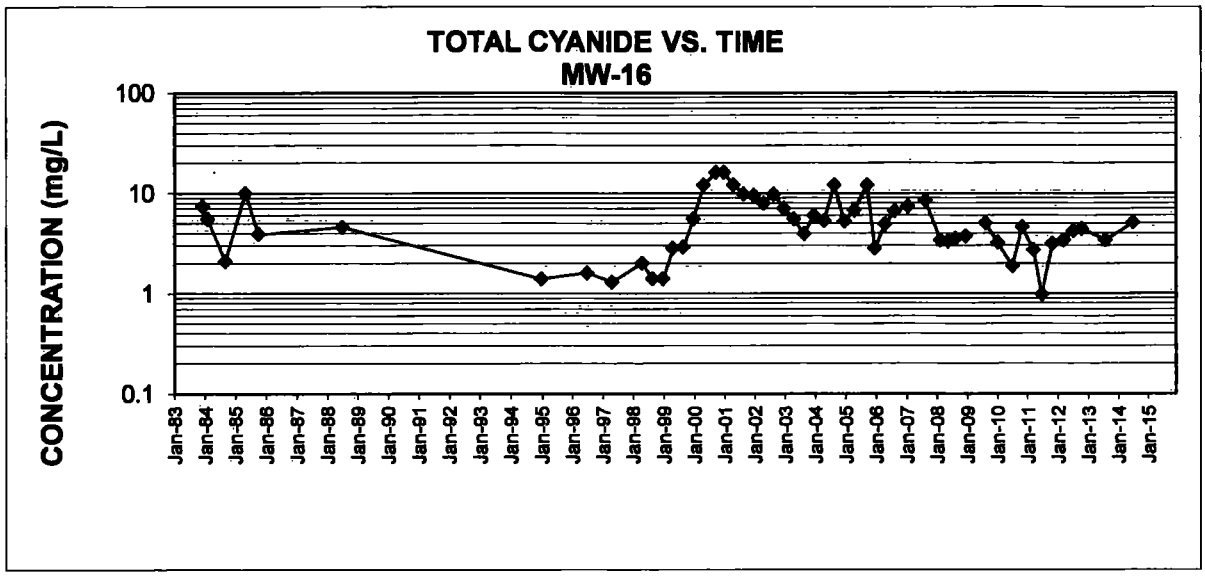
CONCENTRATION v. TIME GRAPHS

TOTAL CYANIDE


TOTAL CYANIDE VS. TIME
MW-2
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


TOTAL CYANIDE VS. TIME
MW-5
CONCENTRATION (mg/L)
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


TOTAL CYANIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
10
1
0.1
0.01
0.001
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


TOTAL CYANIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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Jan-06
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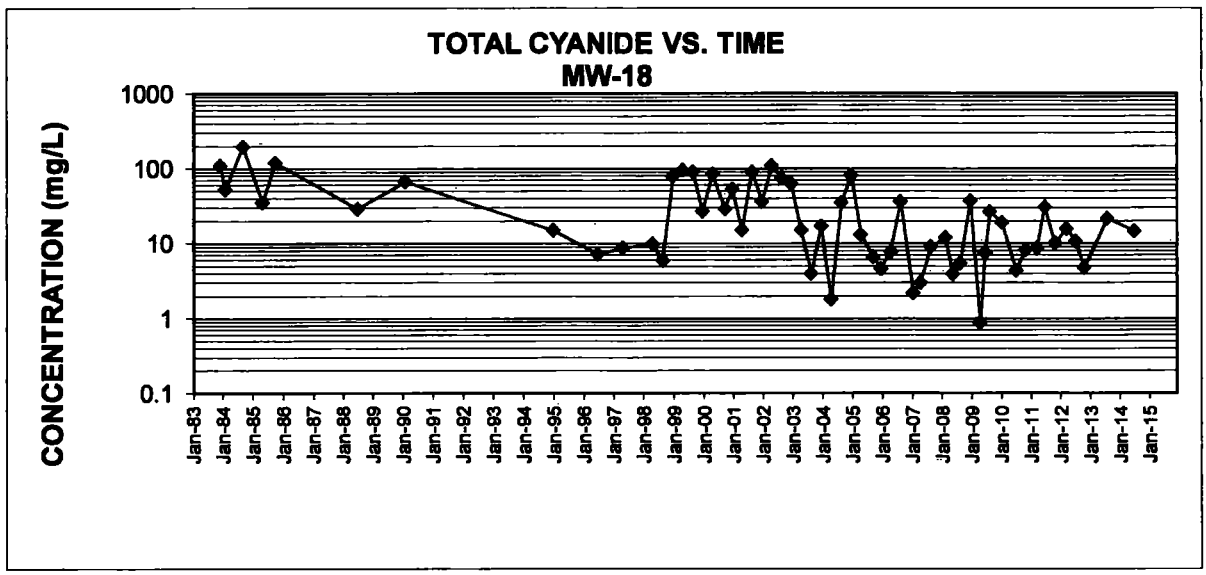
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-18
CONCENTRATION (mg/L)
1000
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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Jan-06
Jan-07
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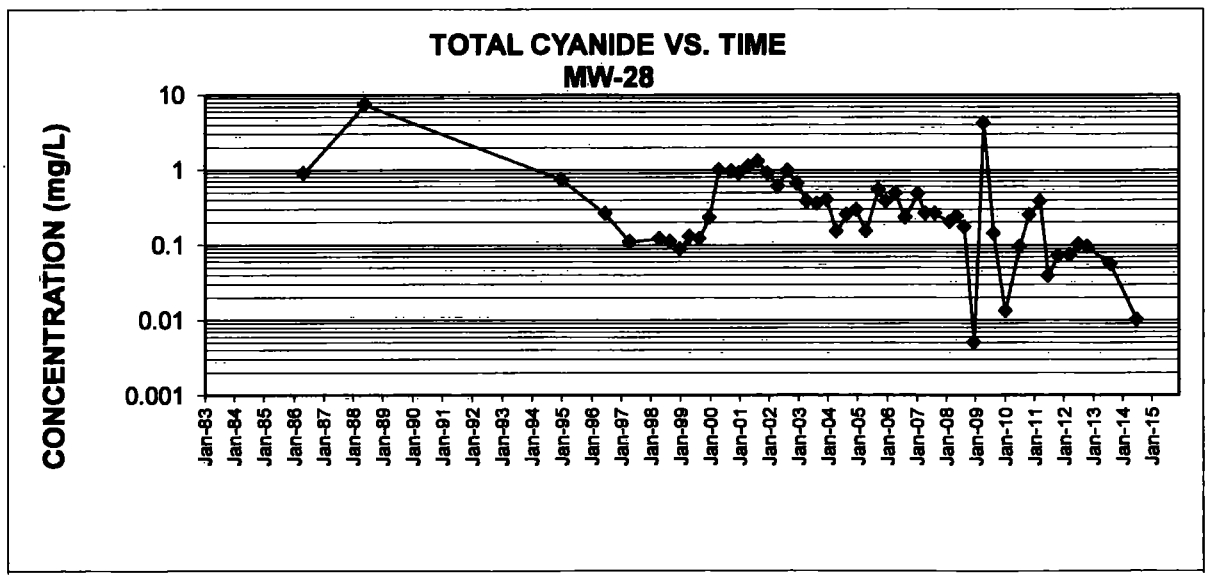
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-28
CONCENTRATION (mg/L)
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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Jan-03
Jan-04
Jan-05
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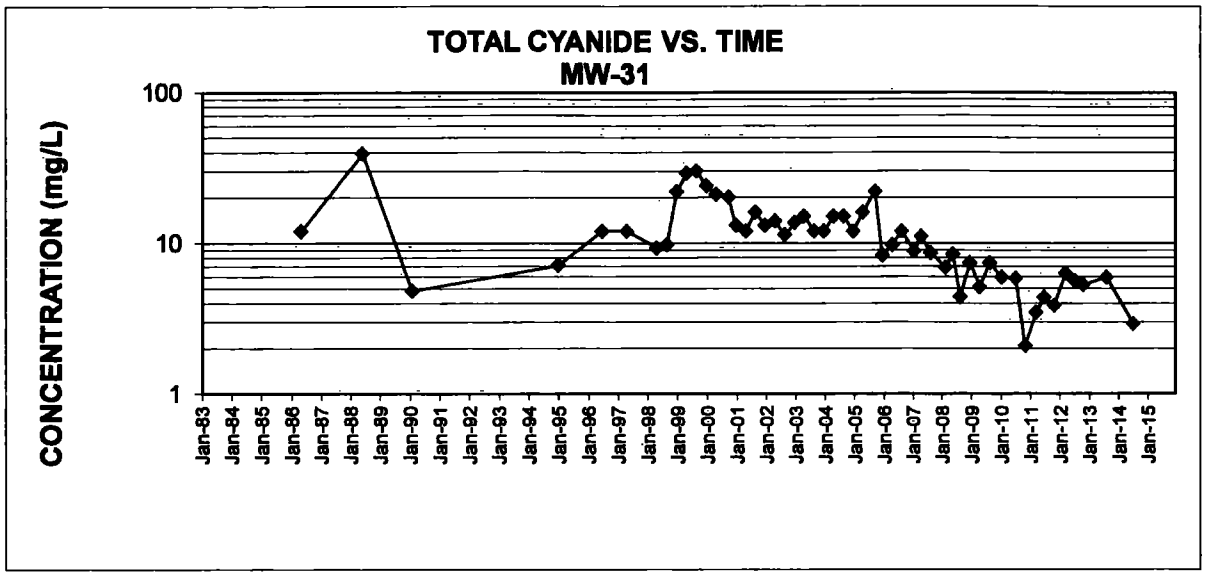
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-31
CONCENTRATION (mg/L)
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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Jan-04
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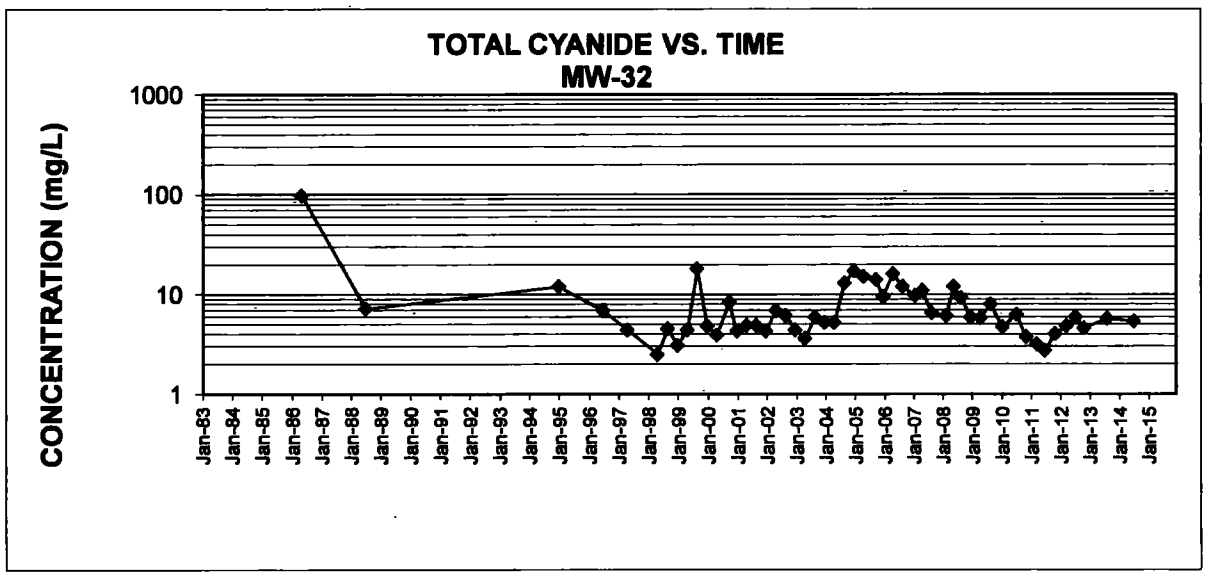
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-32
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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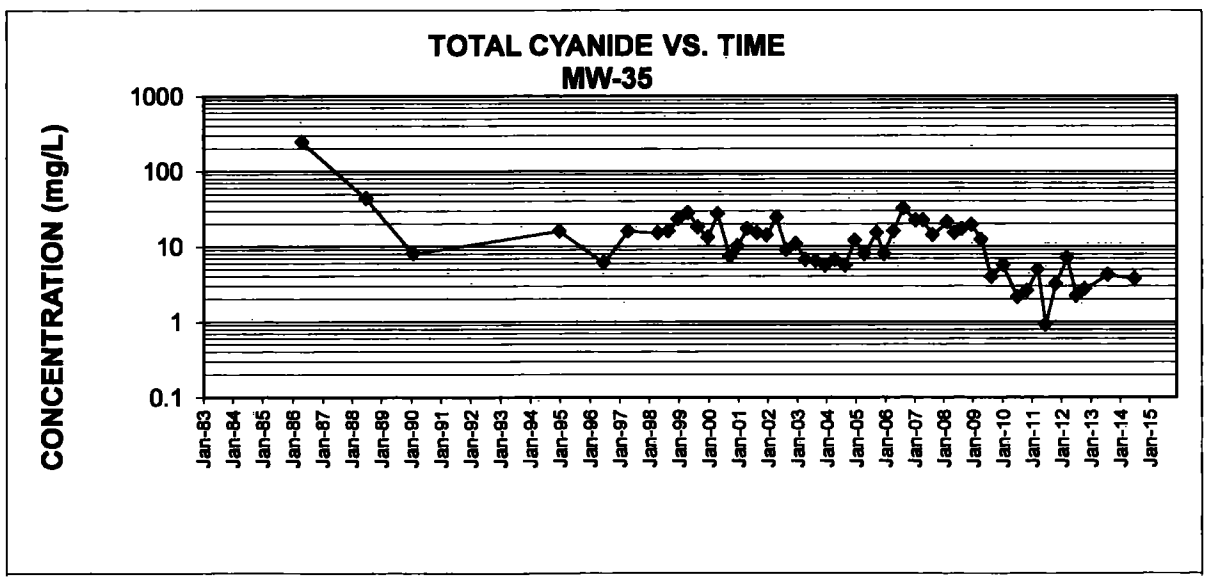
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-35
CONCENTRATION (mg/L)
1000
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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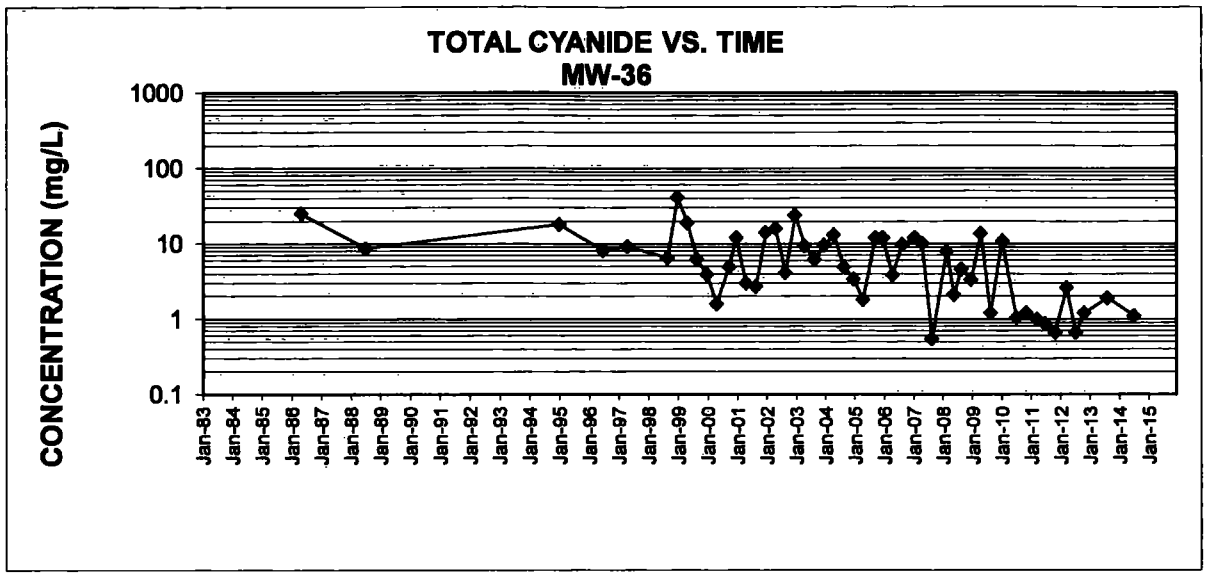
Jan-13
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-36
CONCENTRATION (mg/L)
1000
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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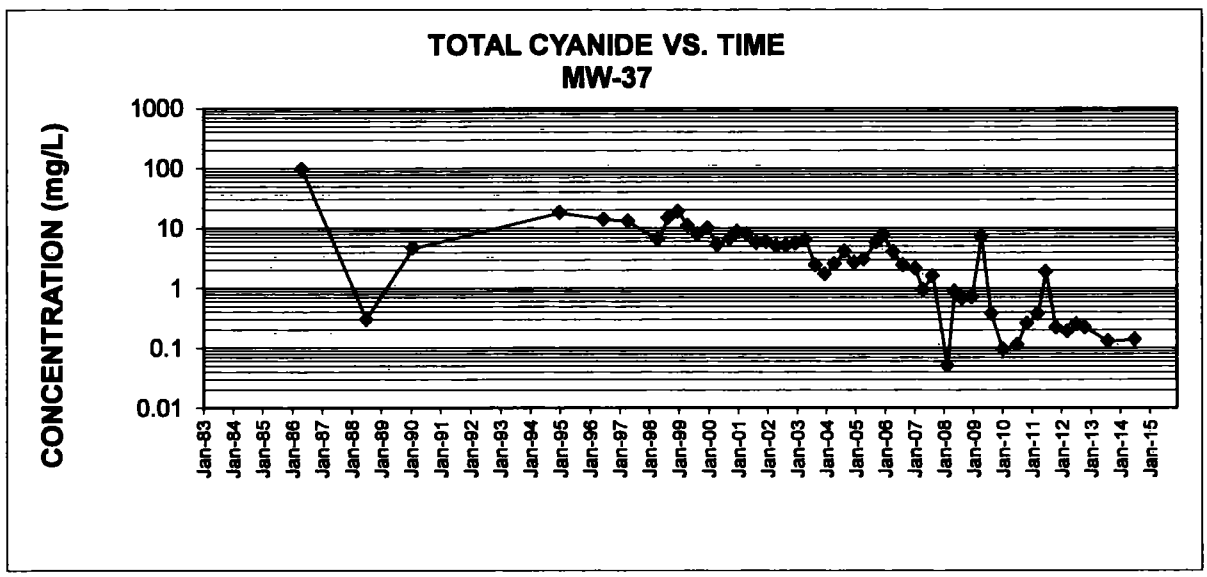
Jan-14
Jan-15


TOTAL CYANIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000
100
10
1
0.1
0.01
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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Jan-98
Jan-99
Jan-00
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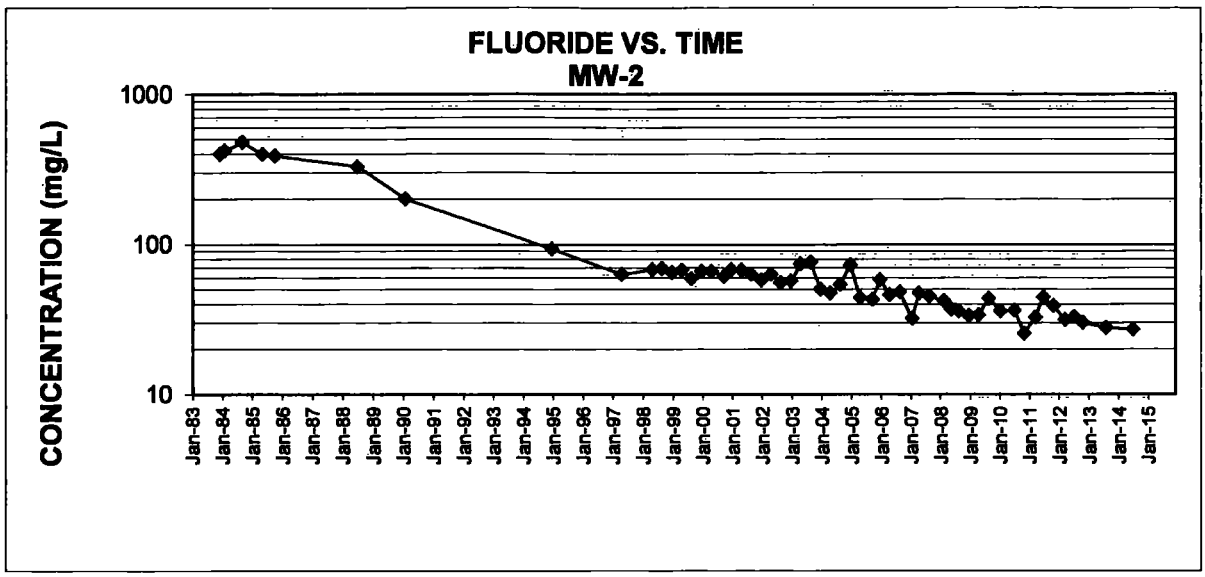
Jan-14
Jan-15

APPENDIX D-2

CONCENTRATION v. TIME GRAPHS

FLUORIDE


FLUORIDE VS. TIME
MW-2
CONCENTRATION (mg/L)
1000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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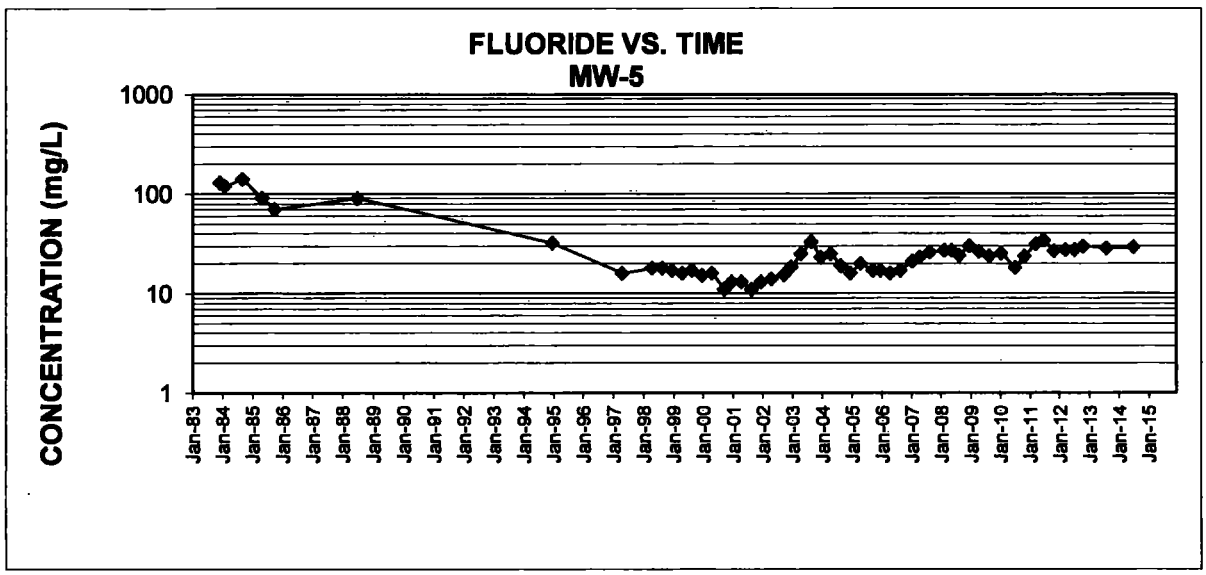
Jan-12
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-5
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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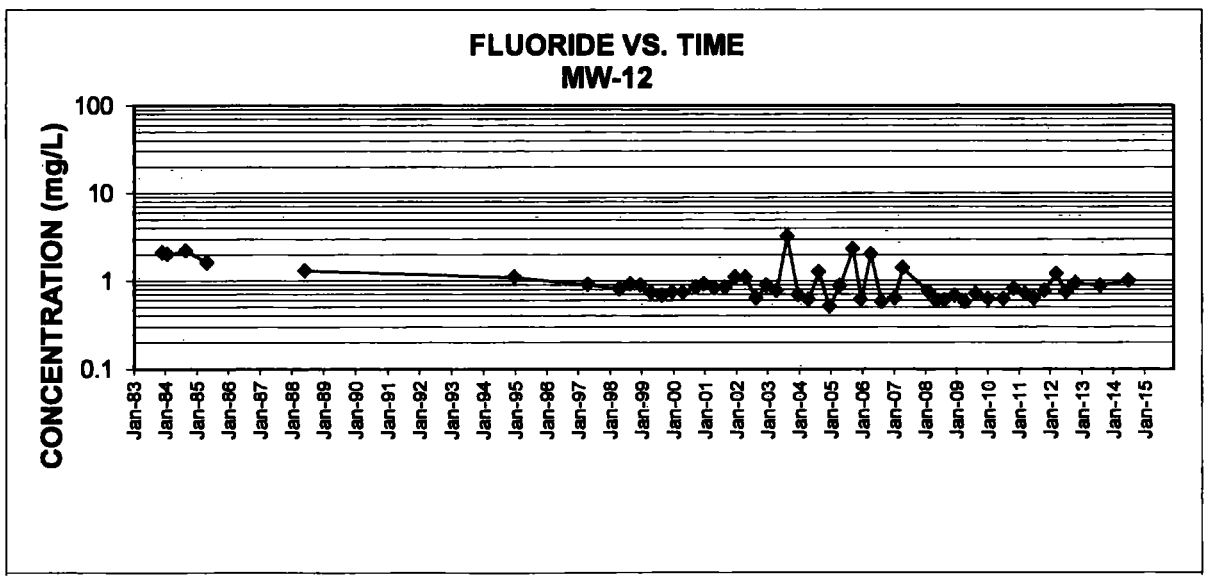
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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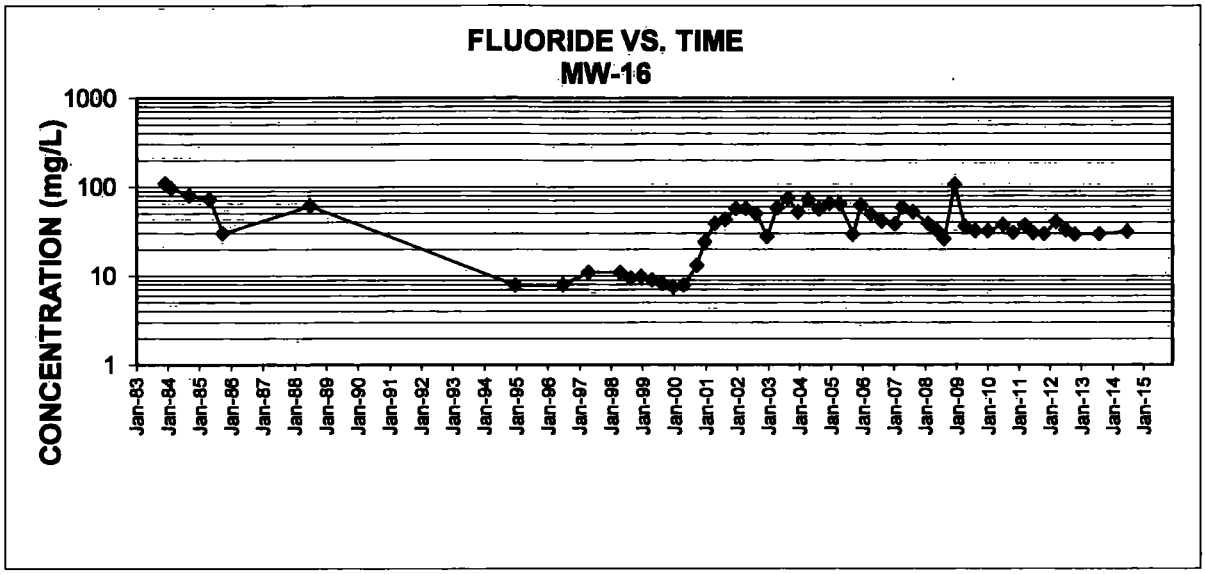
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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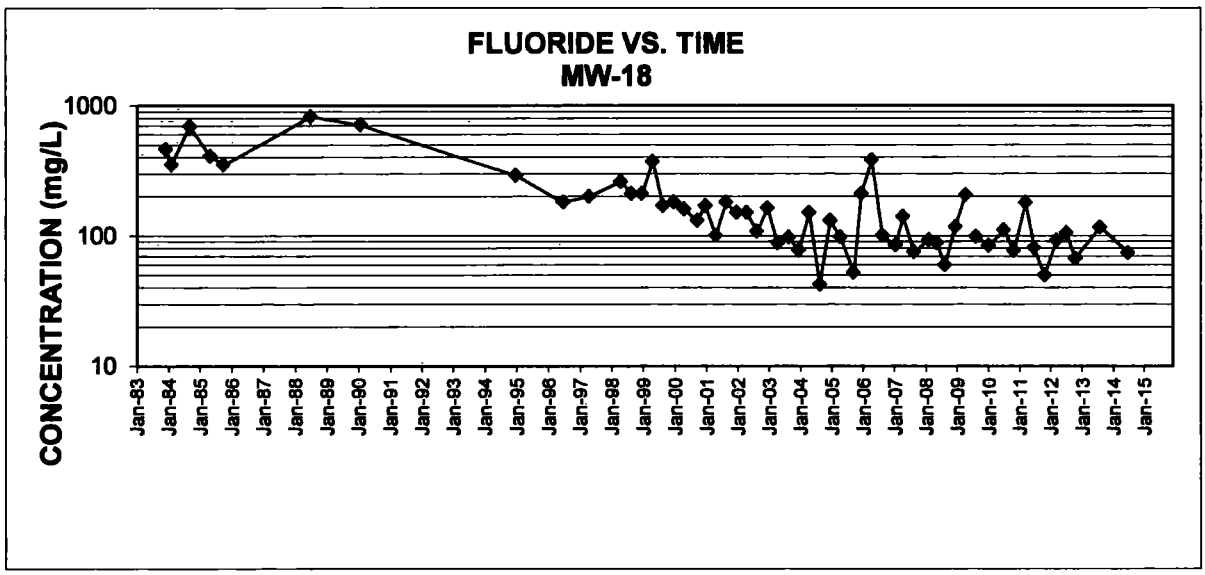
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-18
CONCENTRATION (mg/L)
1000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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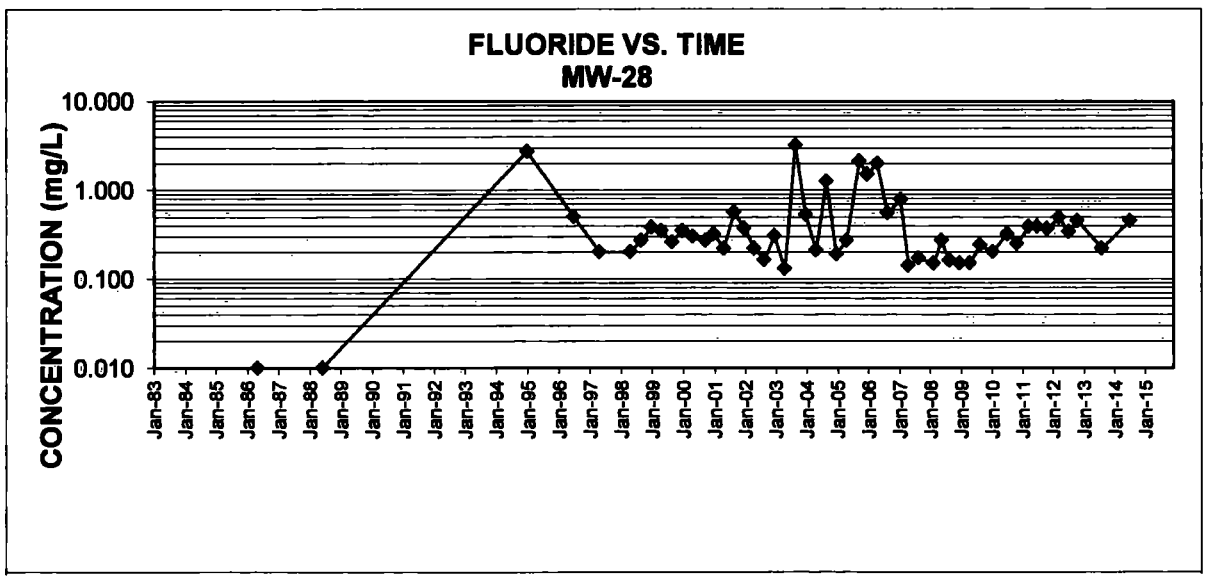
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-28
CONCENTRATION (mg/L)
10.000
1.000
0.100
0.010
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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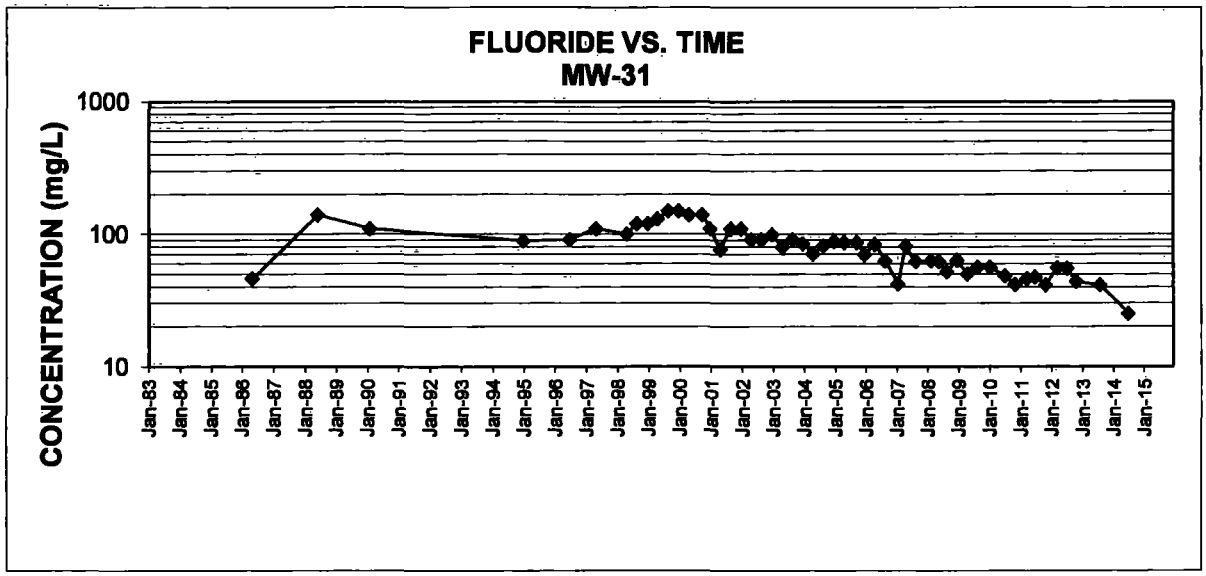
Jan-15


FLUORIDE VS. TIME
MW-31
CONCENTRATION (mg/L)
1000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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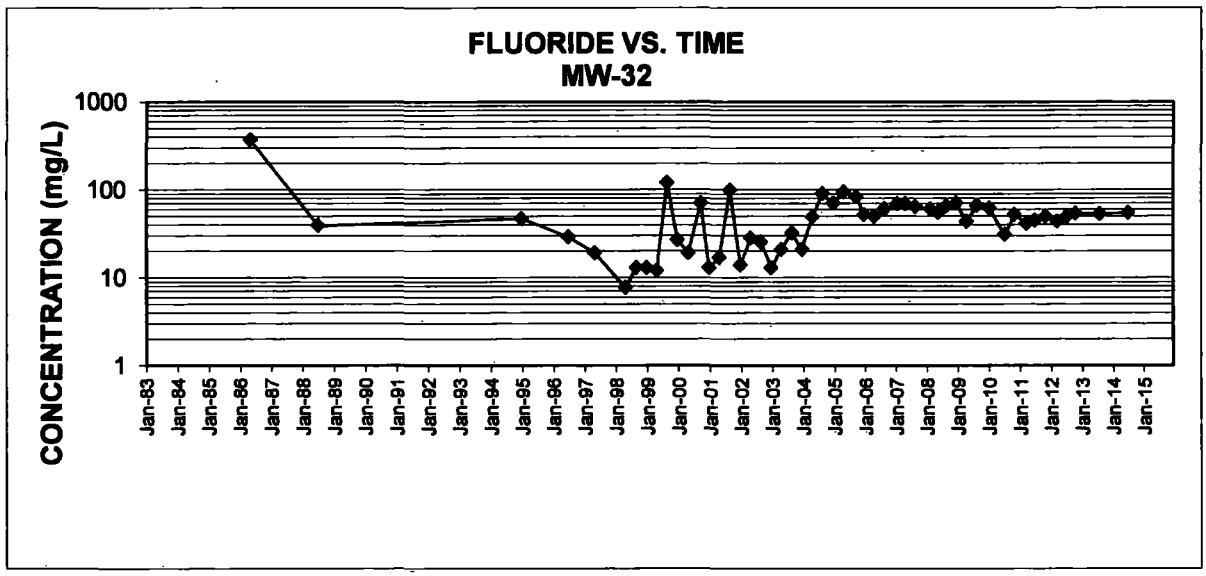
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-32
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
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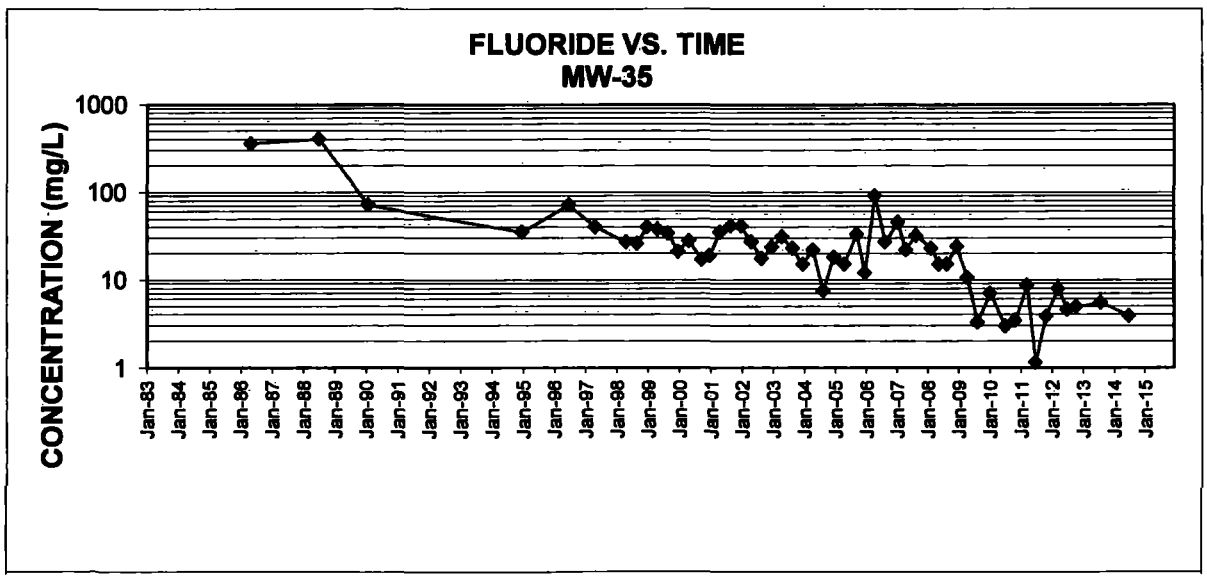
Jan-12
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-35
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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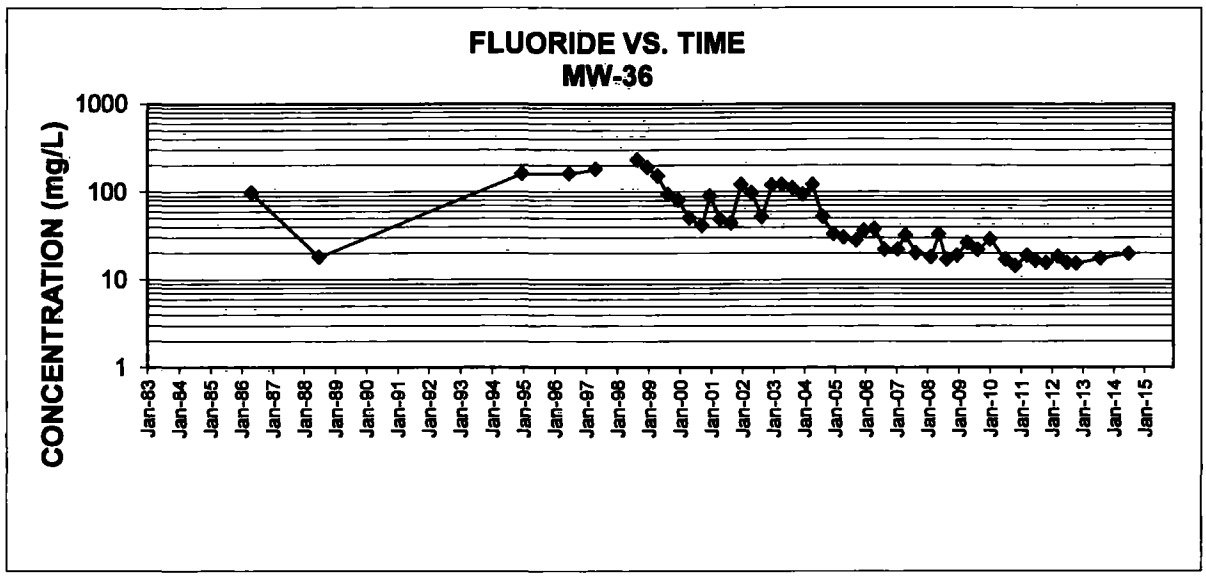
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-36
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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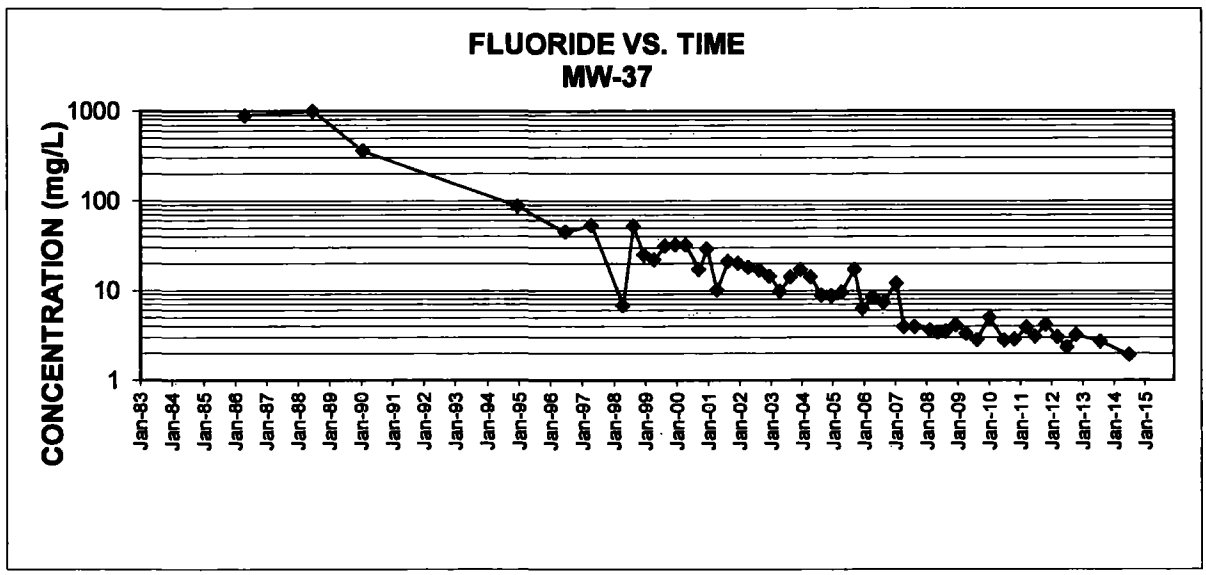
Jan-13
Jan-14
Jan-15


FLUORIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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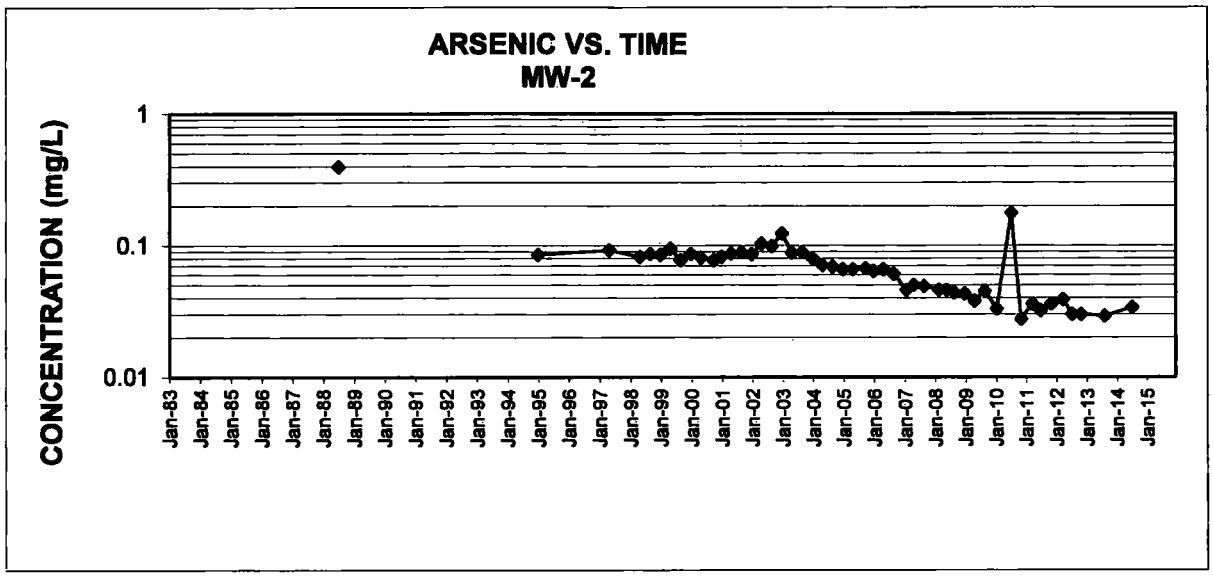
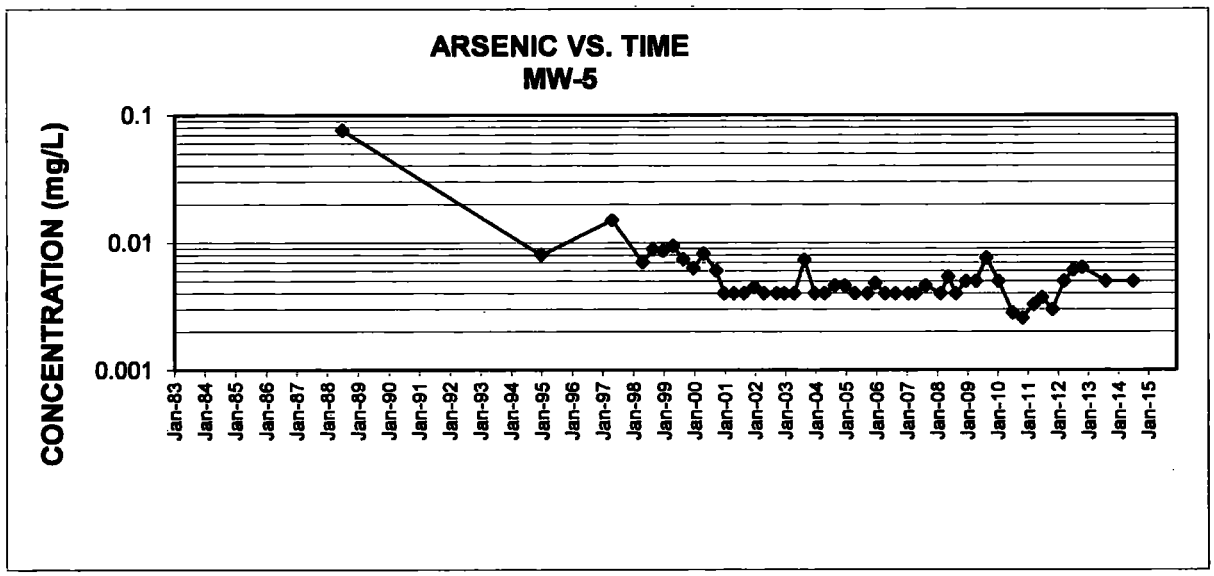
Jan-12
Jan-13
Jan-14
Jan-15

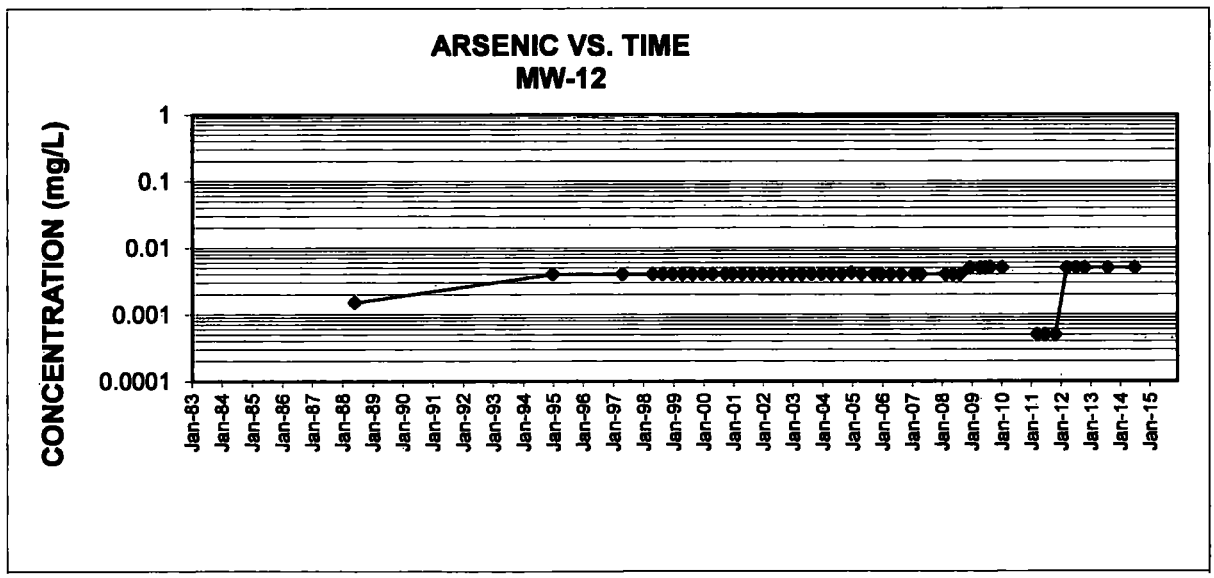
APPENDIX D-3

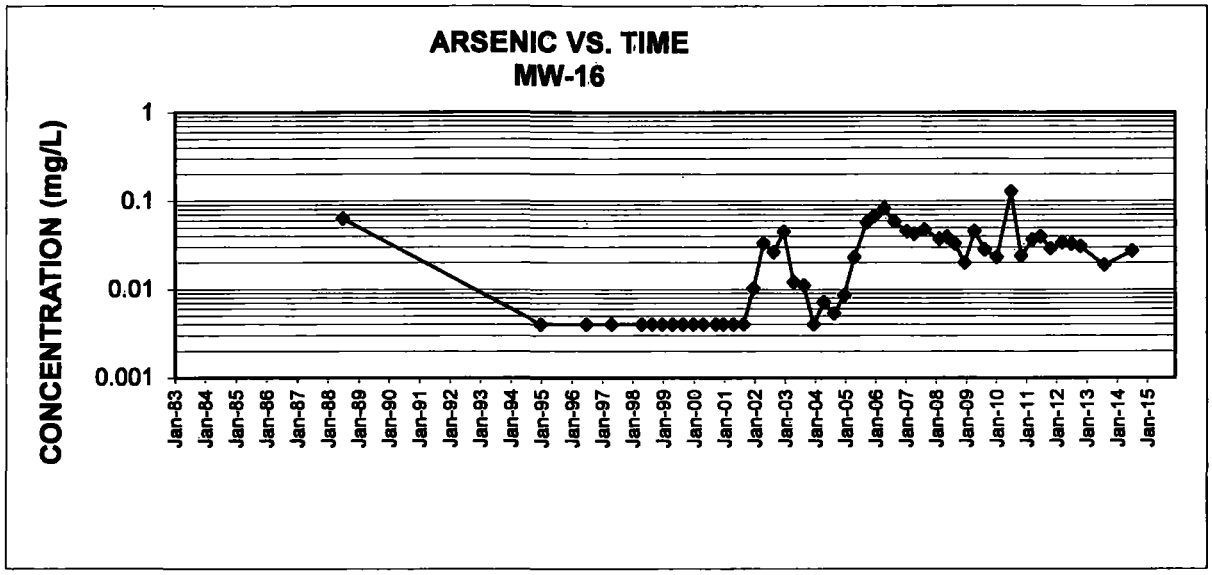
CONCENTRATION v. TIME GRAPHS

ARSENIC


ARSENIC VS. TIME
MW-2
CONCENTRATION (mg/L)
1
0.1
0.01
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


ARSENIC VS. TIME
MW-5
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


ARSENIC VS. TIME
MW-12
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15


ARSENIC VS. TIME
MW-16
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
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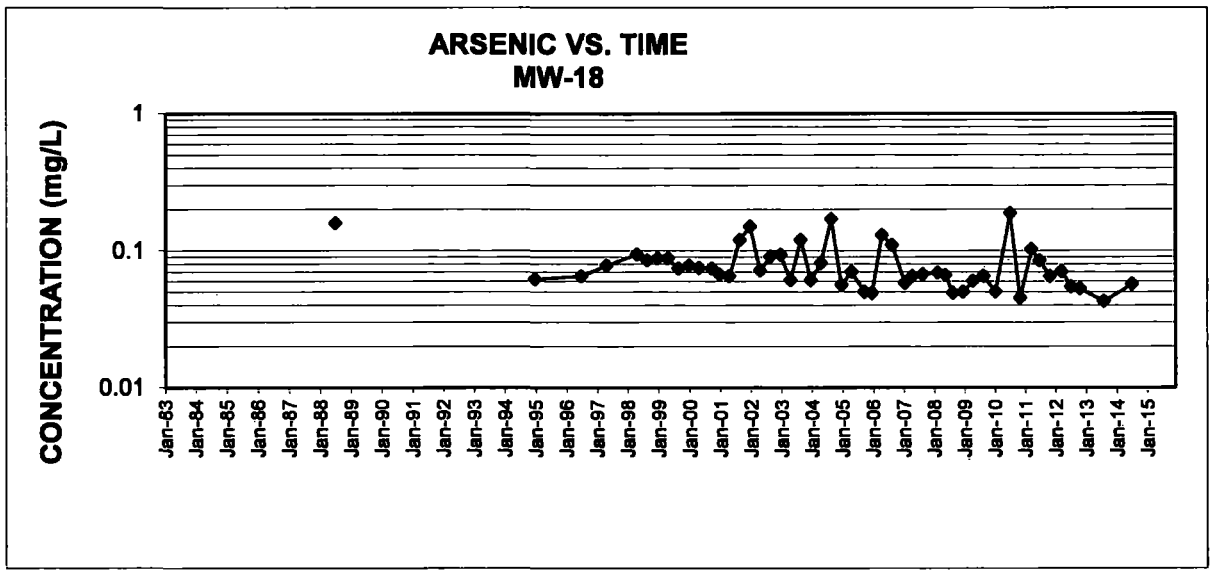
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


ARSENIC VS. TIME
MW-18
CONCENTRATION (mg/L)
1
0.1
0.01
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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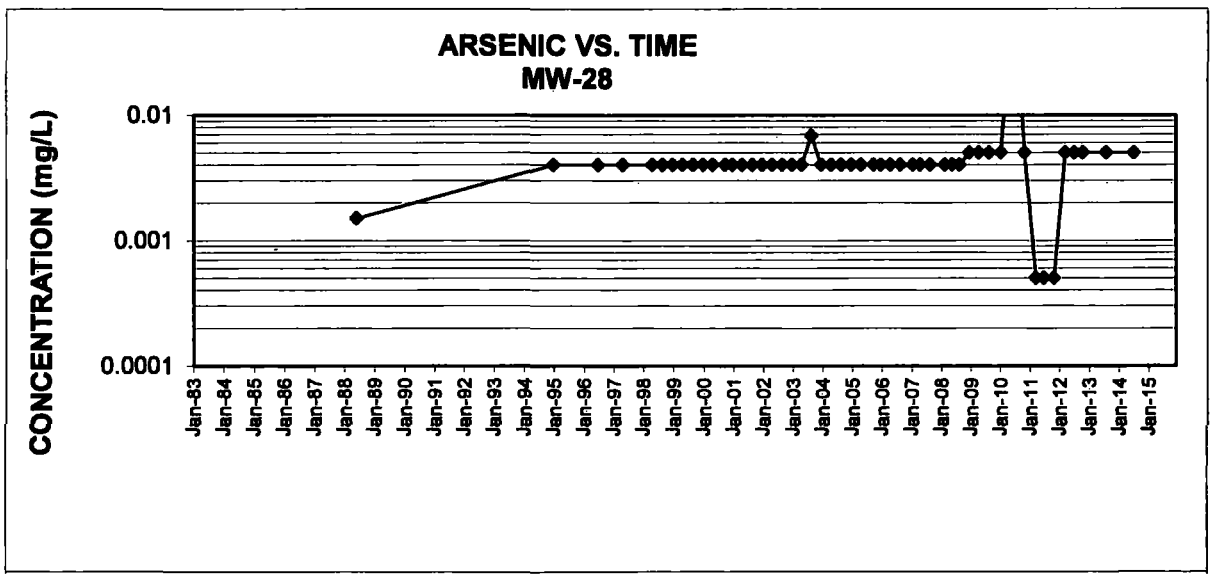
Jan-14
Jan-15


ARSENIC VS. TIME
MW-28
CONCENTRATION (mg/L)
0.01
0.001
0.0001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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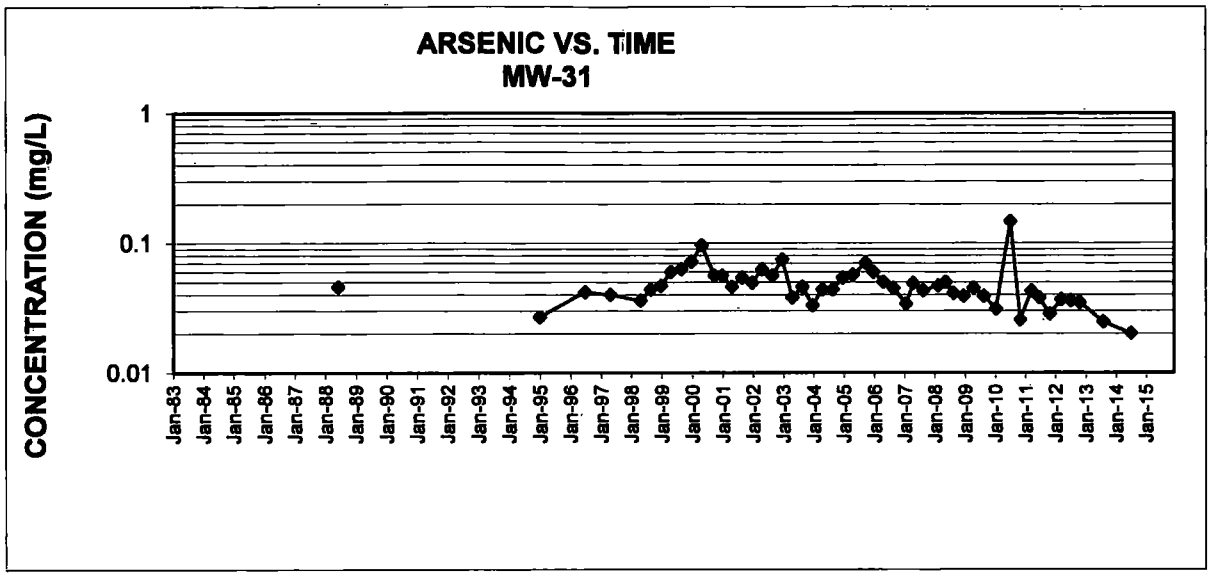
Jan-14
Jan-15


ARSENIC VS. TIME
MW-31
CONCENTRATION (mg/L)
1
0.1
0.01
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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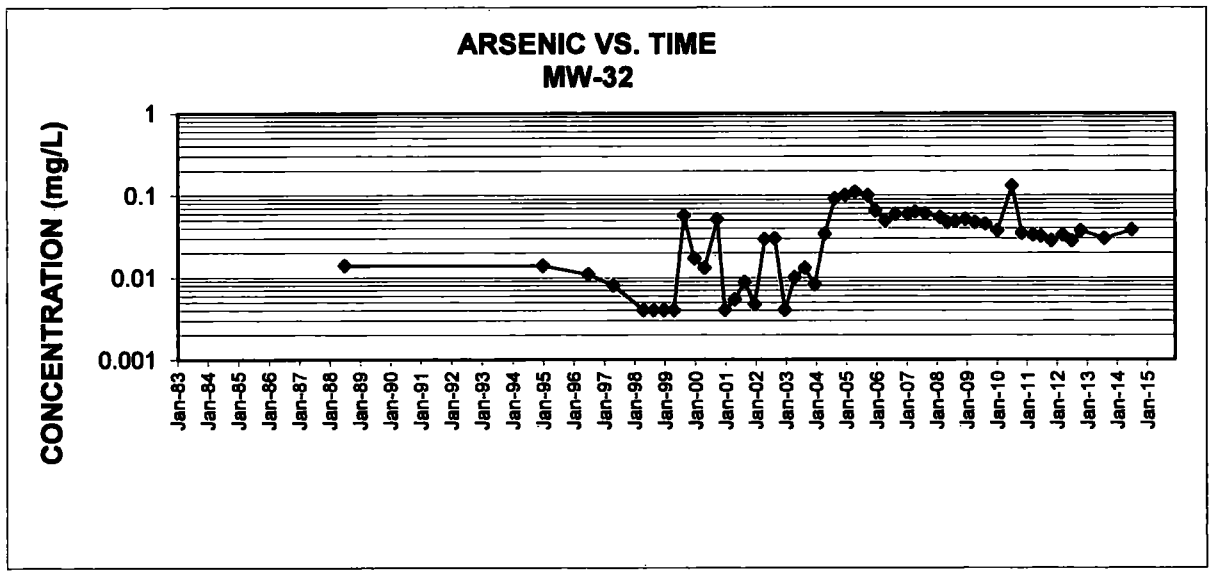
Jan-13
Jan-14
Jan-15


ARSENIC VS. TIME
MW-32
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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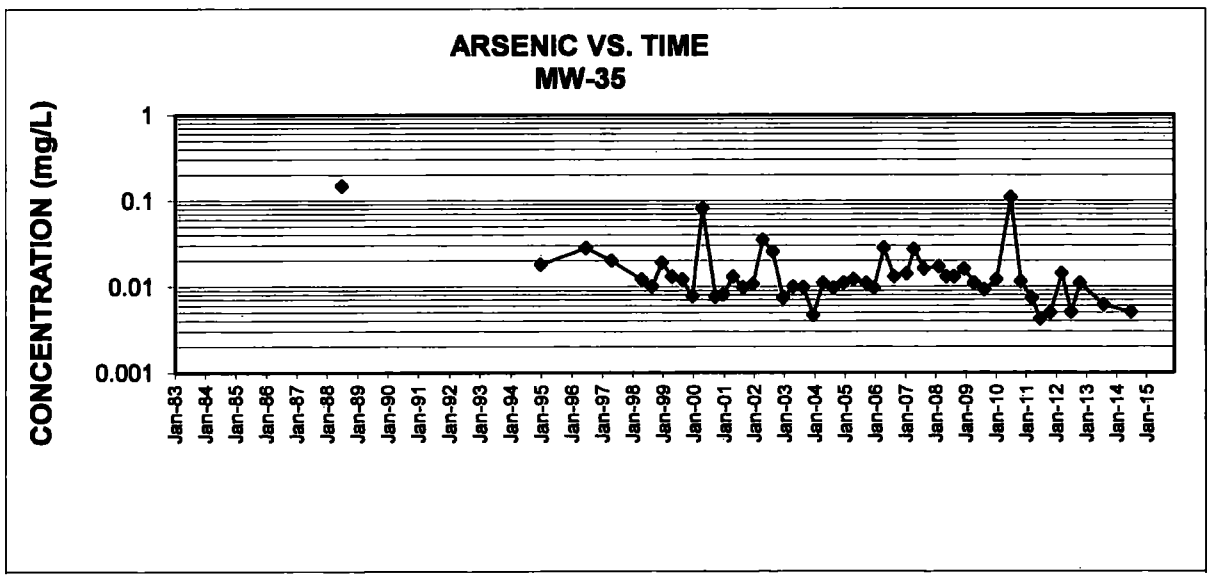
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


ARSENIC VS. TIME
MW-35
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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Jan-11
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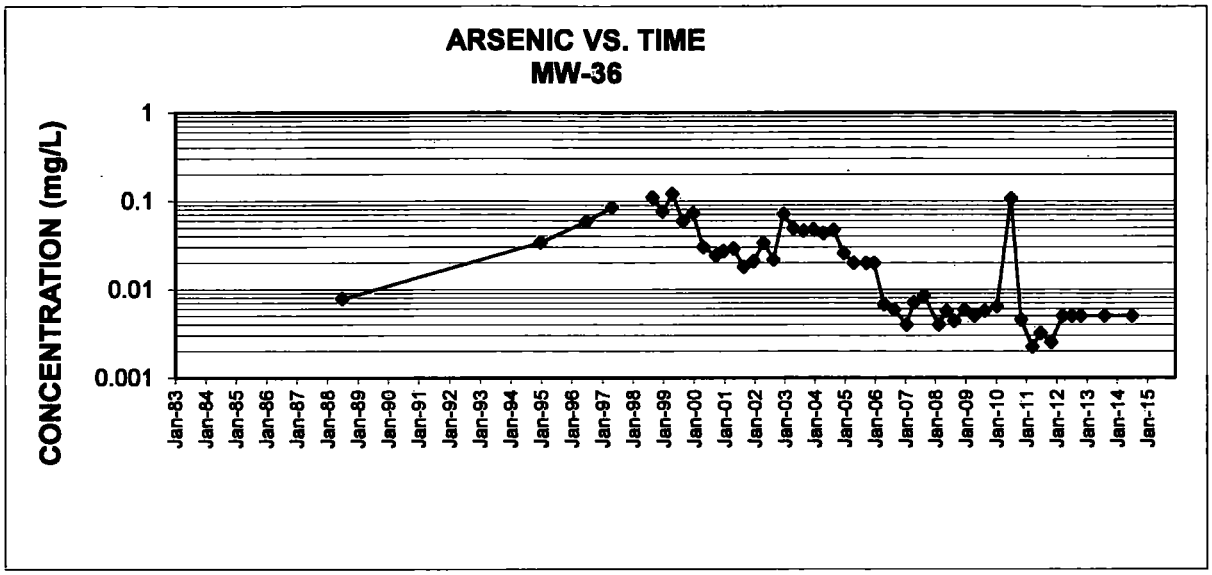
Jan-13
Jan-14
Jan-15


ARSENIC VS. TIME
MW-36
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
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Jan-10
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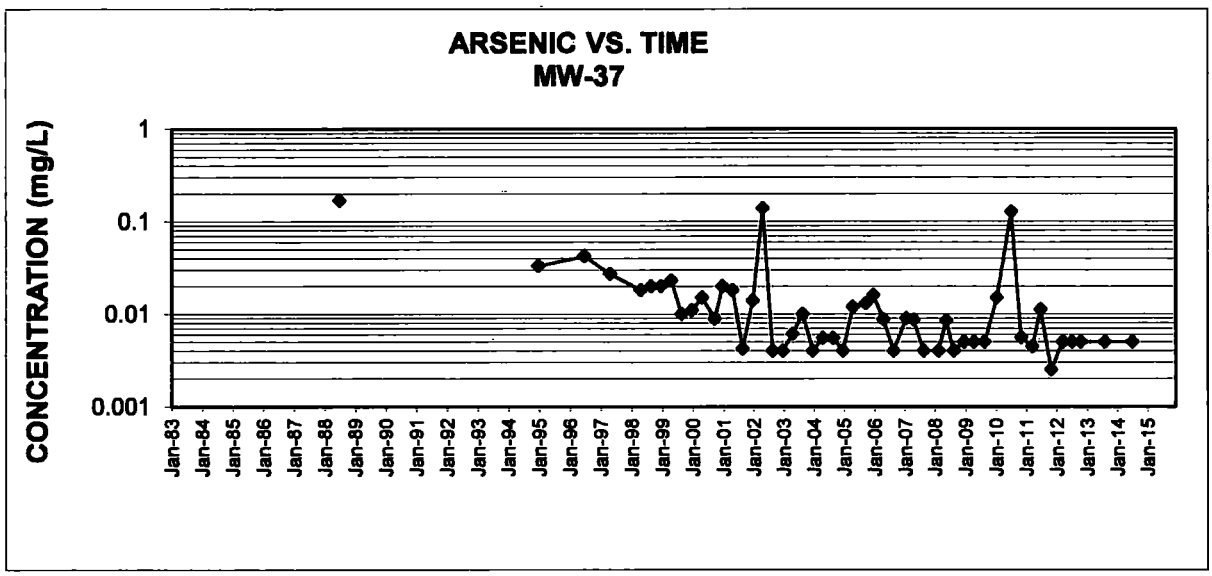
Jan-12
Jan-13
Jan-14
Jan-15


ARSENIC VS. TIME
MW-37
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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Jan-04
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Jan-09
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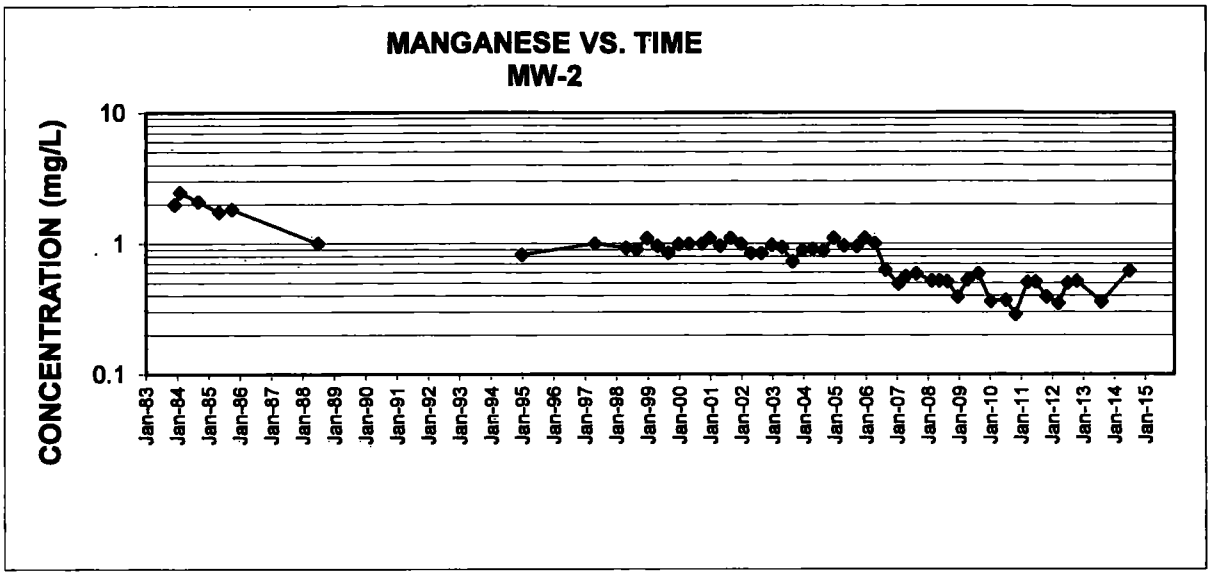
Jan-13
Jan-14
Jan-15

APPENDIX D-4

CONCENTRATION v. TIME GRAPHS

MANGANESE


MANGANESE VS. TIME
MW-2
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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Jan-08
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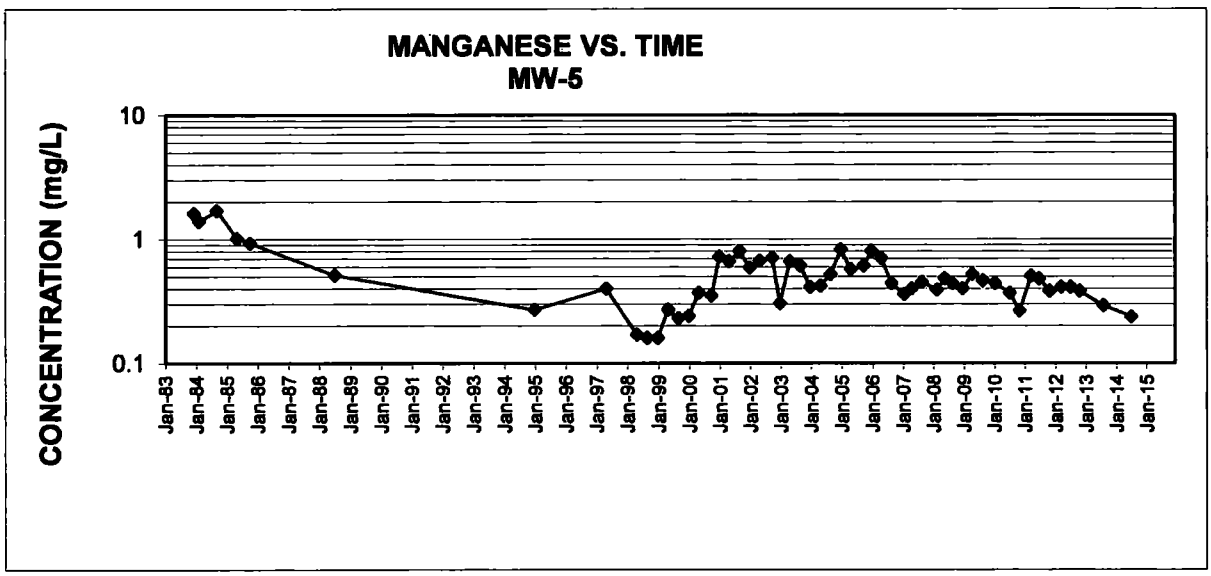
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-5
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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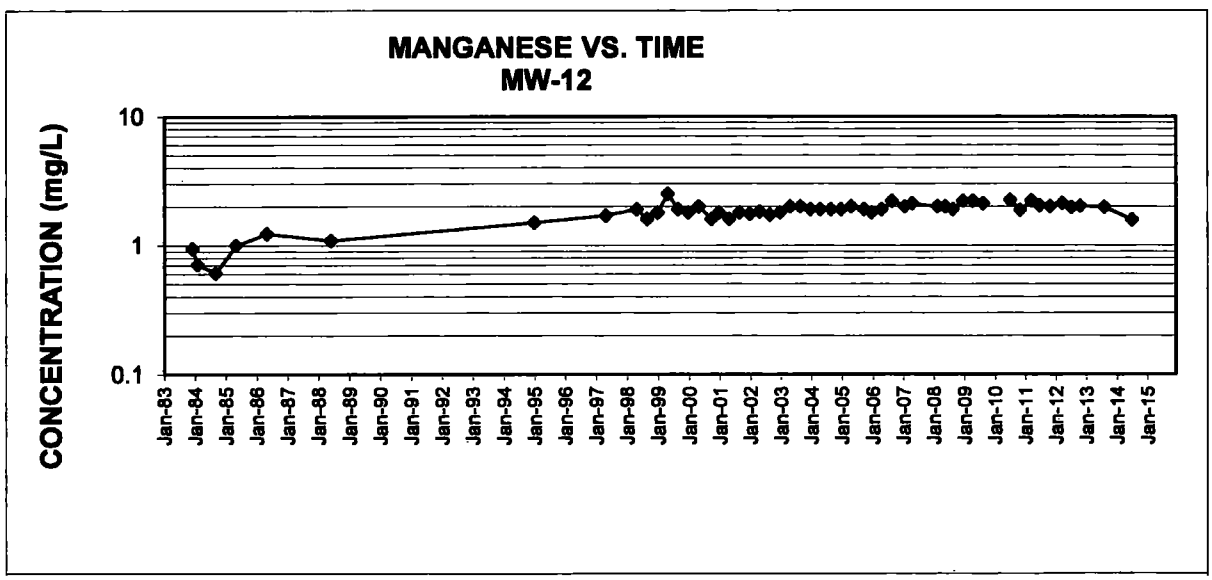
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-12
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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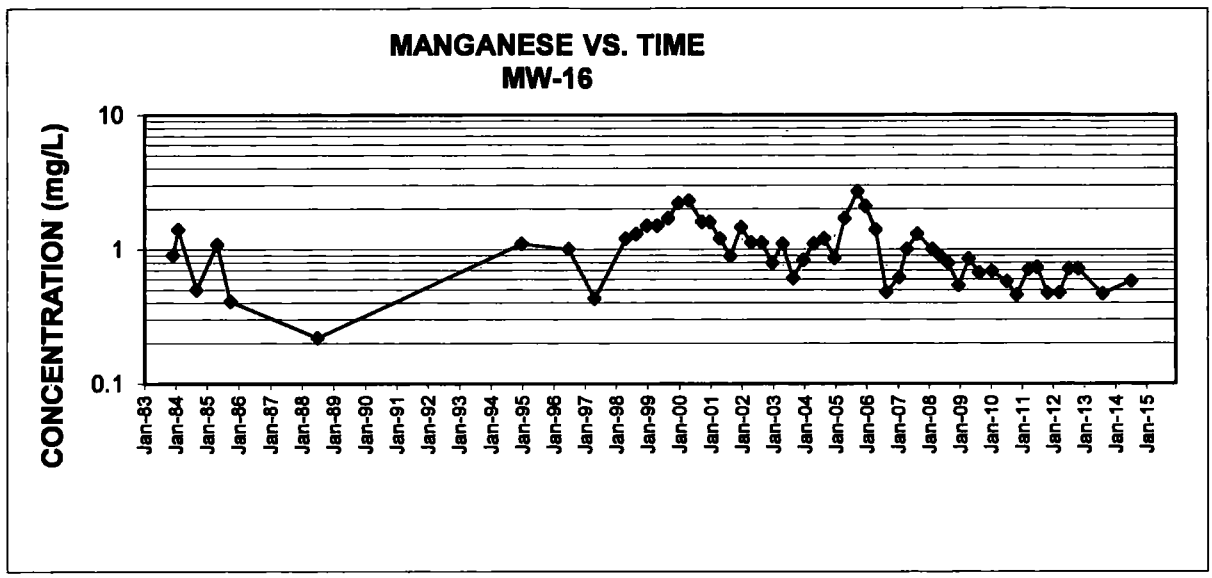
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-16
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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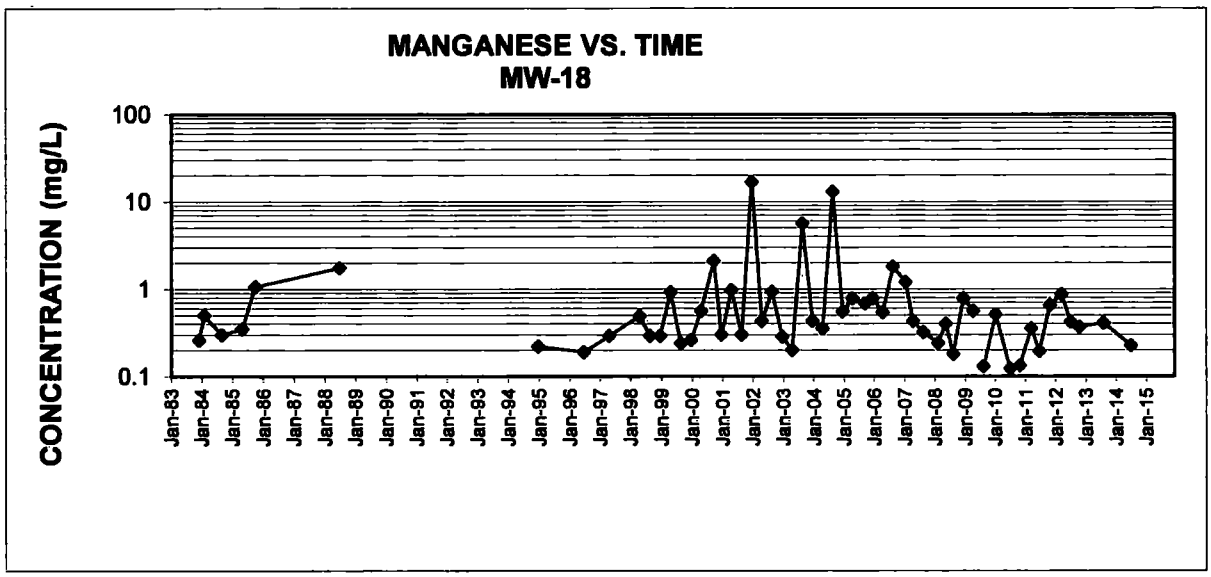
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-18
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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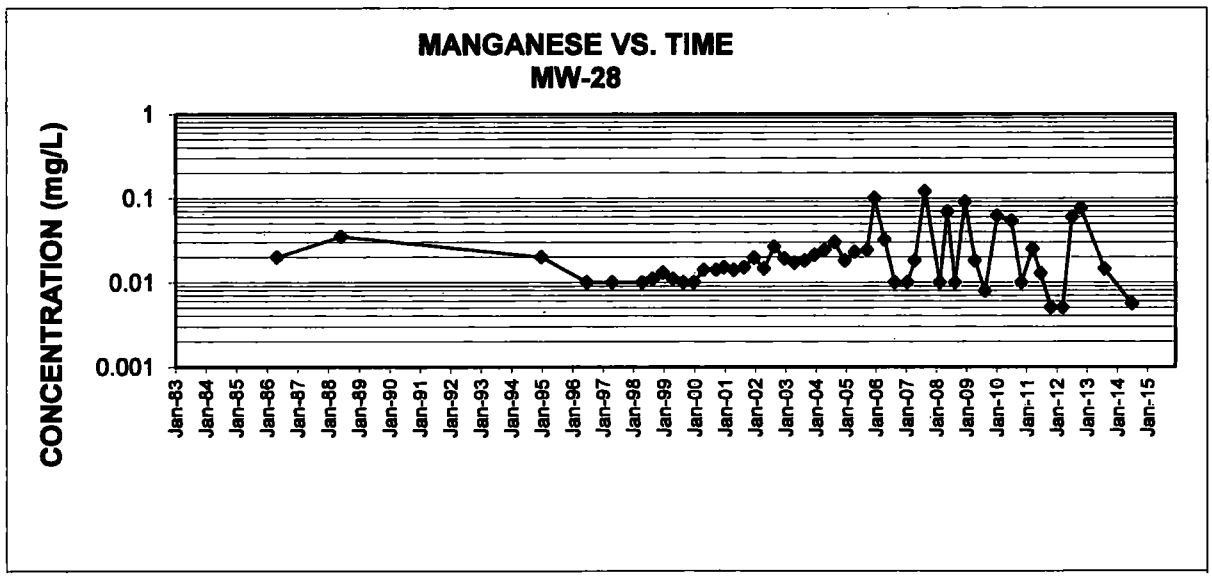
Jan-12
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-28
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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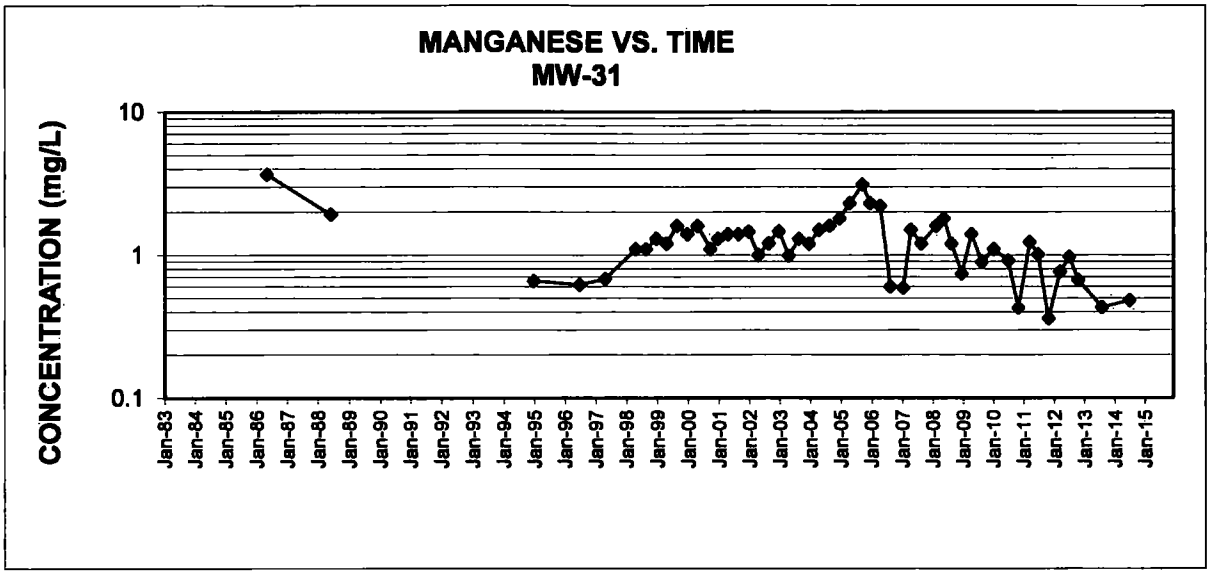
Jan-14
Jan-15


MANGANESE VS. TIME
MW-31
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
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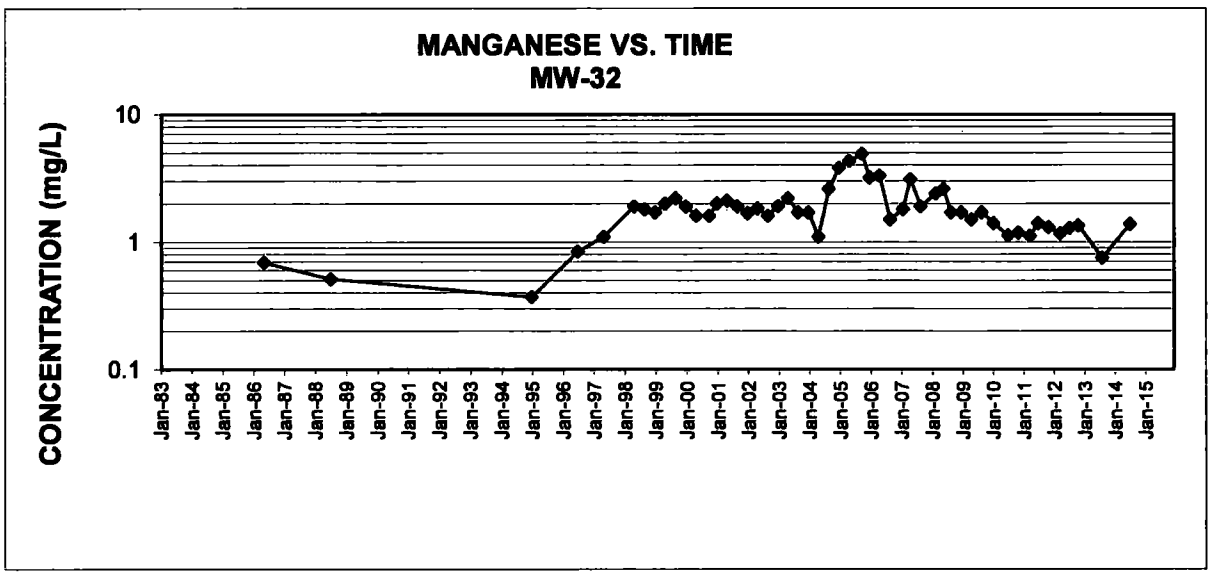
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-32
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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Jan-08
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Jan-10
Jan-11
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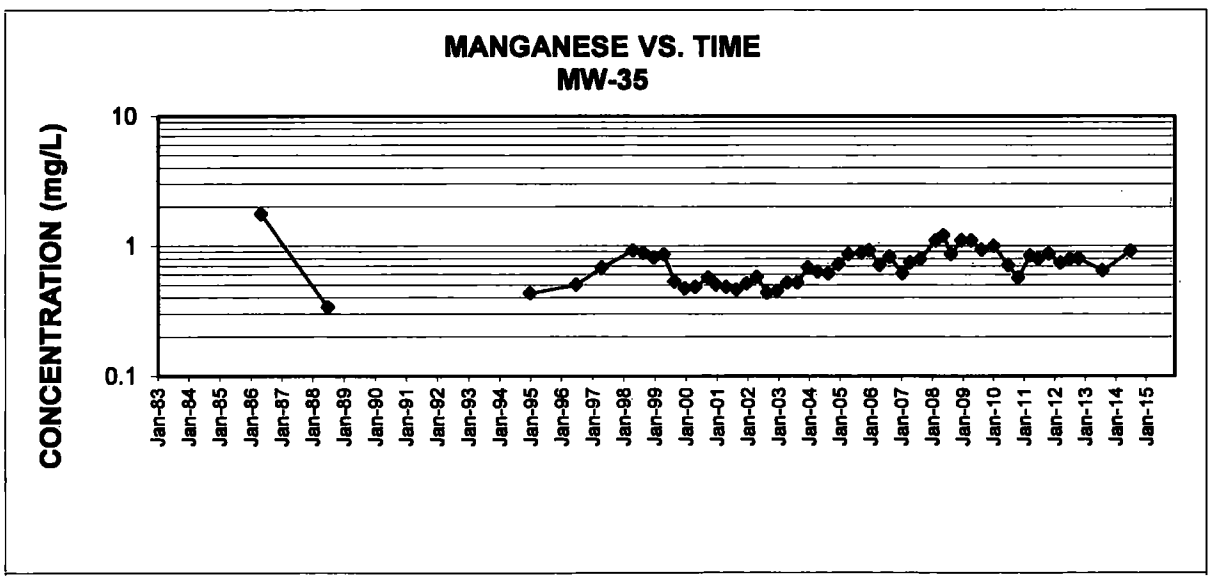
Jan-13
Jan-14
Jan-15


MANGANESE VS. TIME
MW-35
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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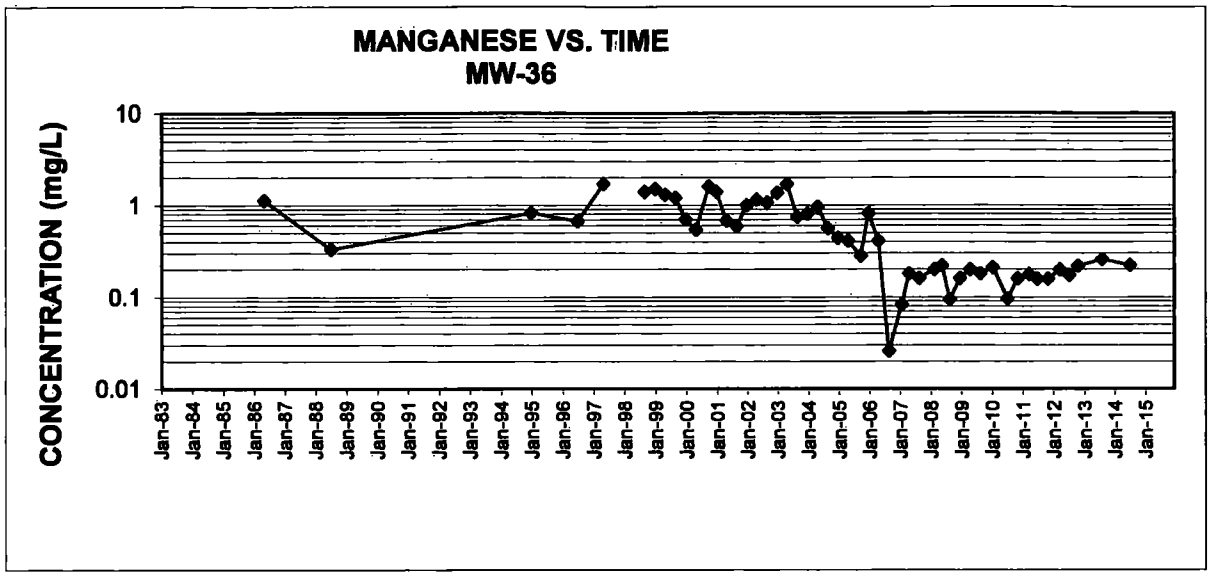
Jan-15


MANGANESE VS. TIME
MW-36
CONCENTRATION (mg/L)
10
1
0.1
0.01
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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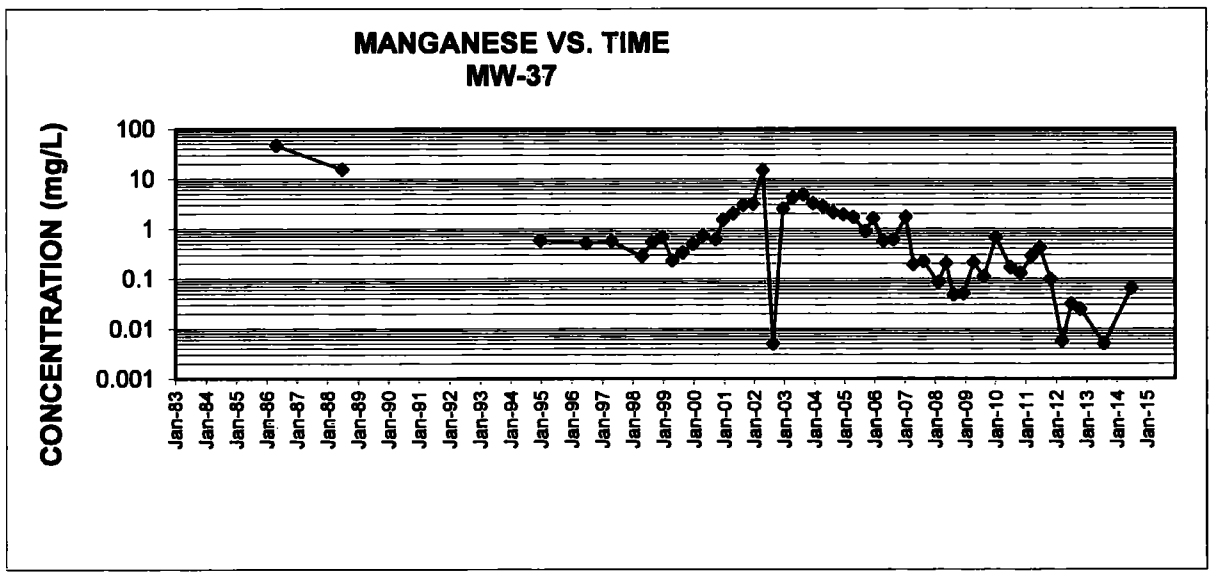
Jan-15


MANGANESE VS. TIME
MW-37
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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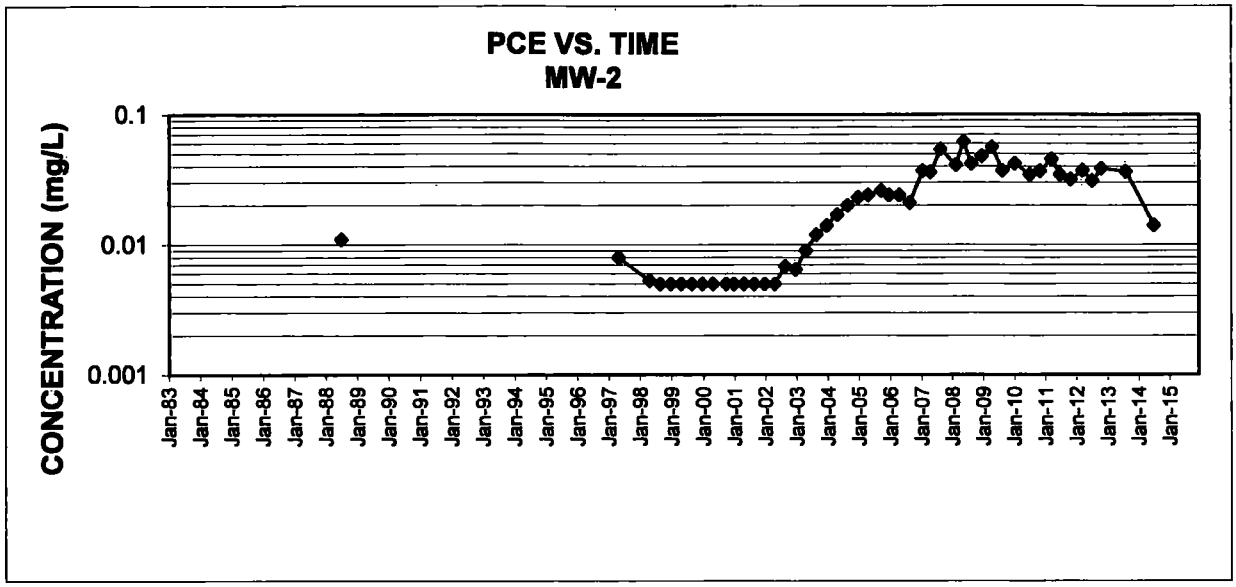
Jan-14
Jan-15

APPENDIX D-5

CONCENTRATION v. TIME GRAPHS

TETRACHLOROETHENE


PCE VS. TIME
MW-2
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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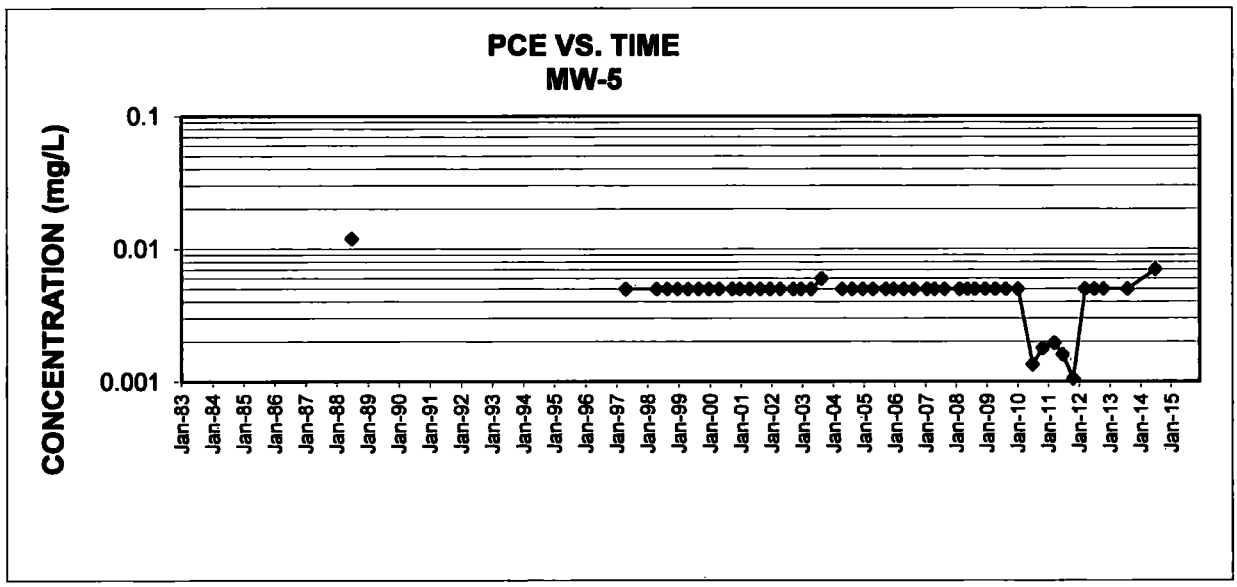
Jan-14
Jan-15


PCE VS. TIME
MW-5
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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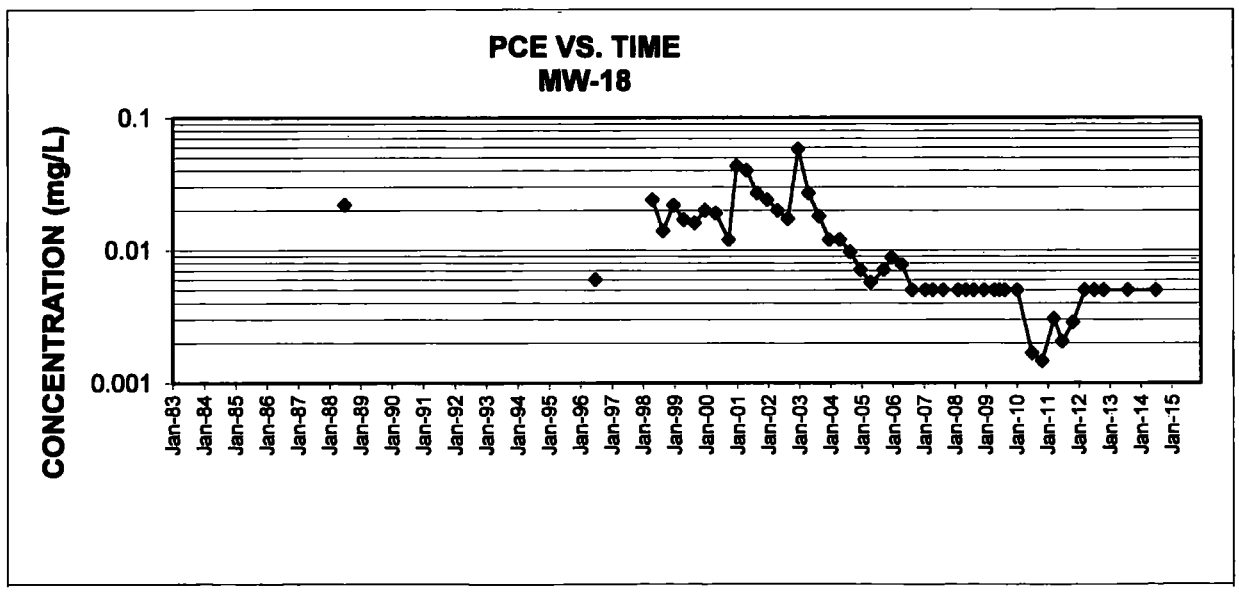
Jan-14
Jan-15


PCE VS. TIME
MW-18
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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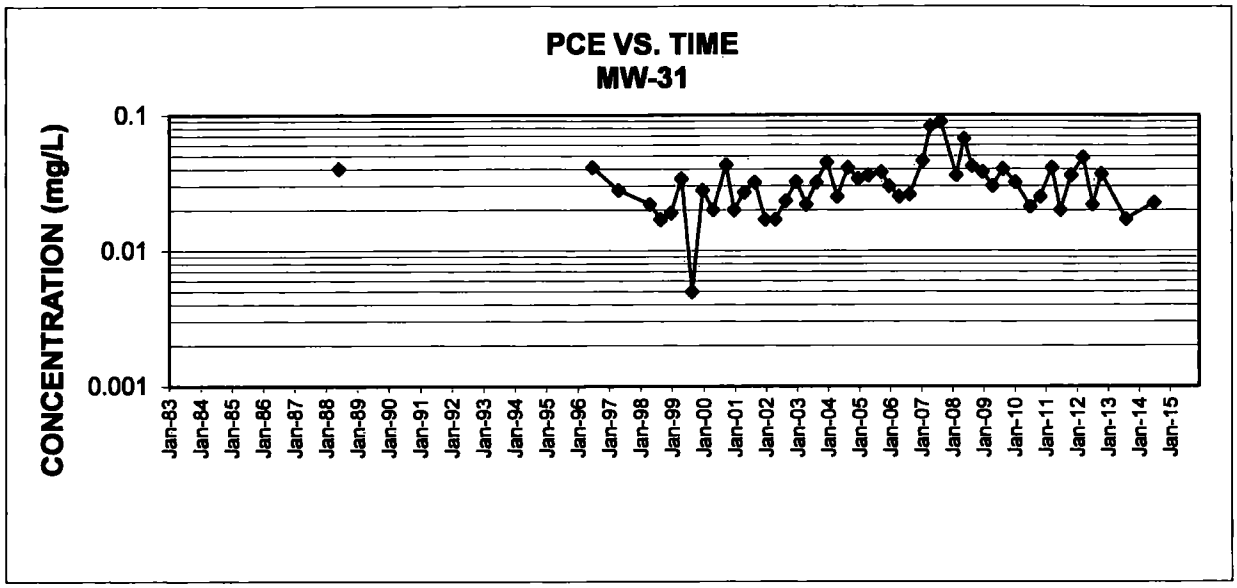
Jan-13
Jan-14
Jan-15


PCE VS. TIME
MW-31
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
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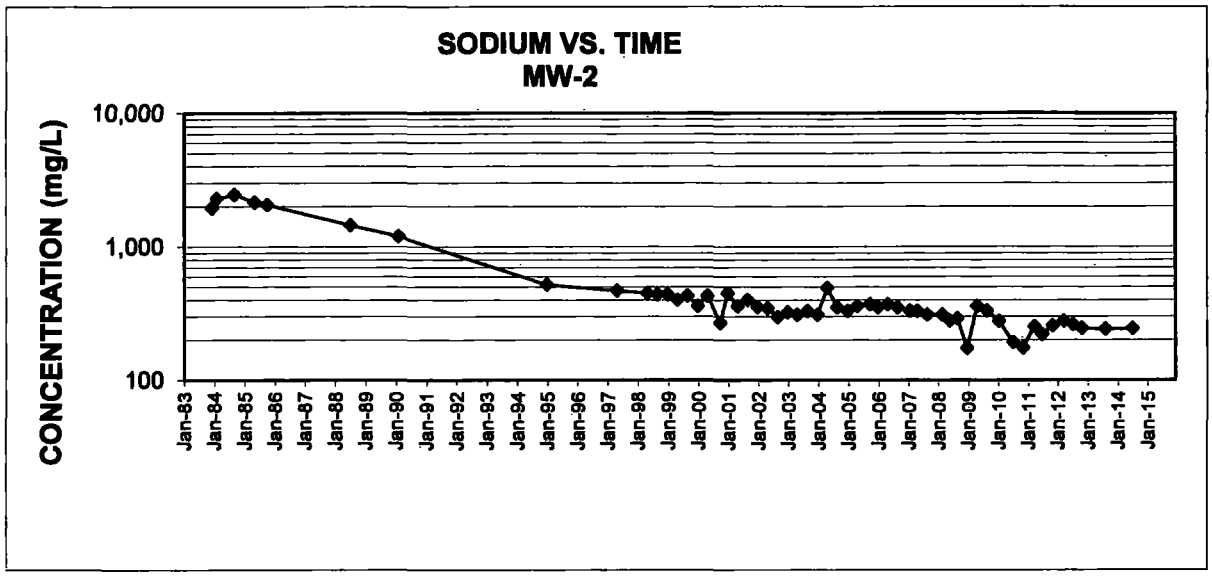
Jan-12
Jan-13
Jan-14
Jan-15

APPENDIX D-6

CONCENTRATION v. TIME GRAPHS

SODIUM


SODIUM VS. TIME
MW-2
CONCENTRATION (mg/L)
10,000
1,000
100
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
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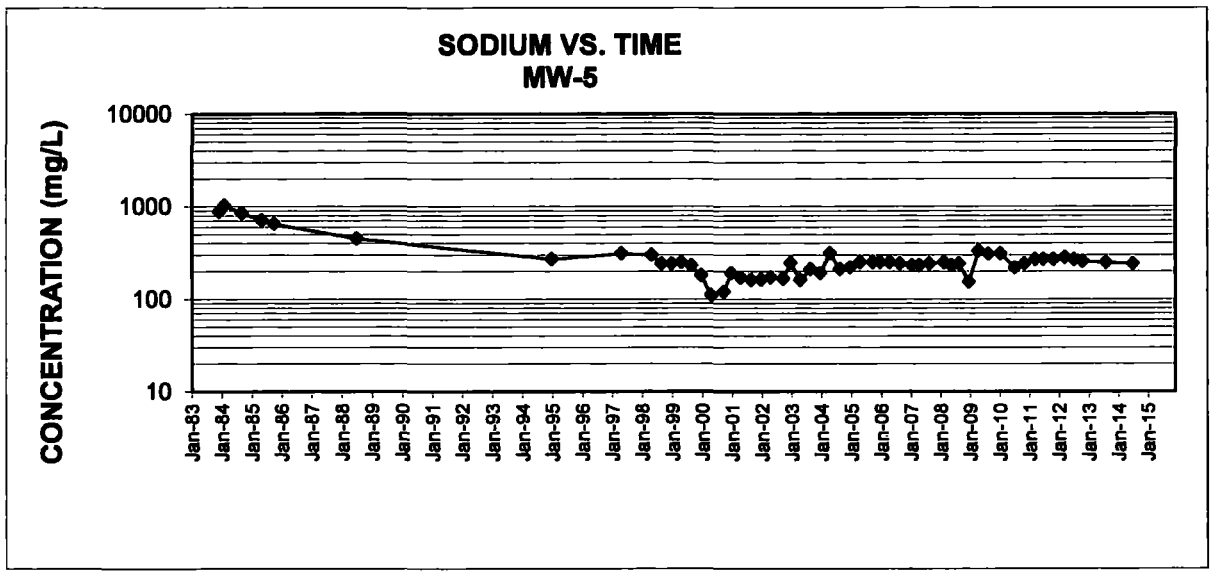
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15


SODIUM VS. TIME
MW-5
CONCENTRATION (mg/L)
10000
1000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
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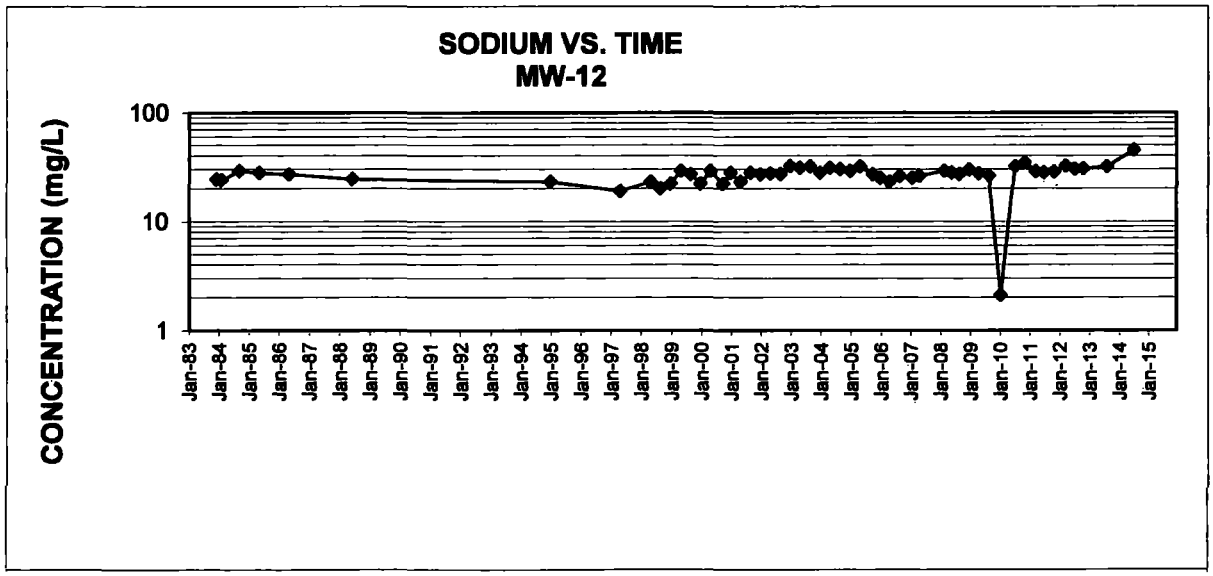
Jan-14
Jan-15


SODIUM VS. TIME
MW-12
CONCENTRATION (mg/L)
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
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Jan-97
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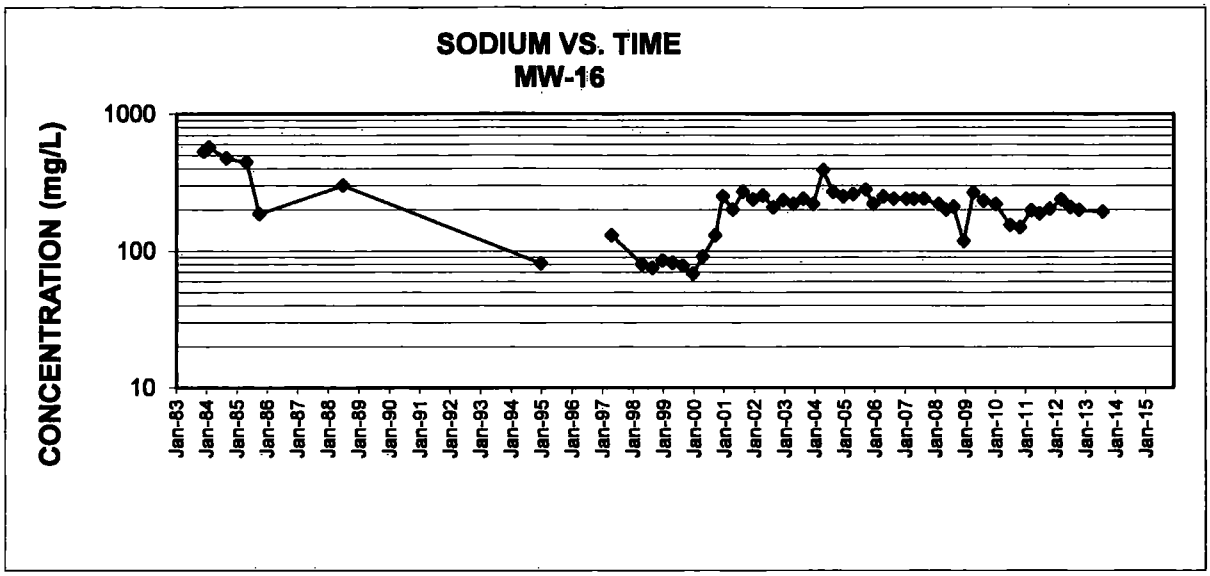
Jan-14
Jan-15


SODIUM VS. TIME
MW-16
CONCENTRATION (mg/L)
1000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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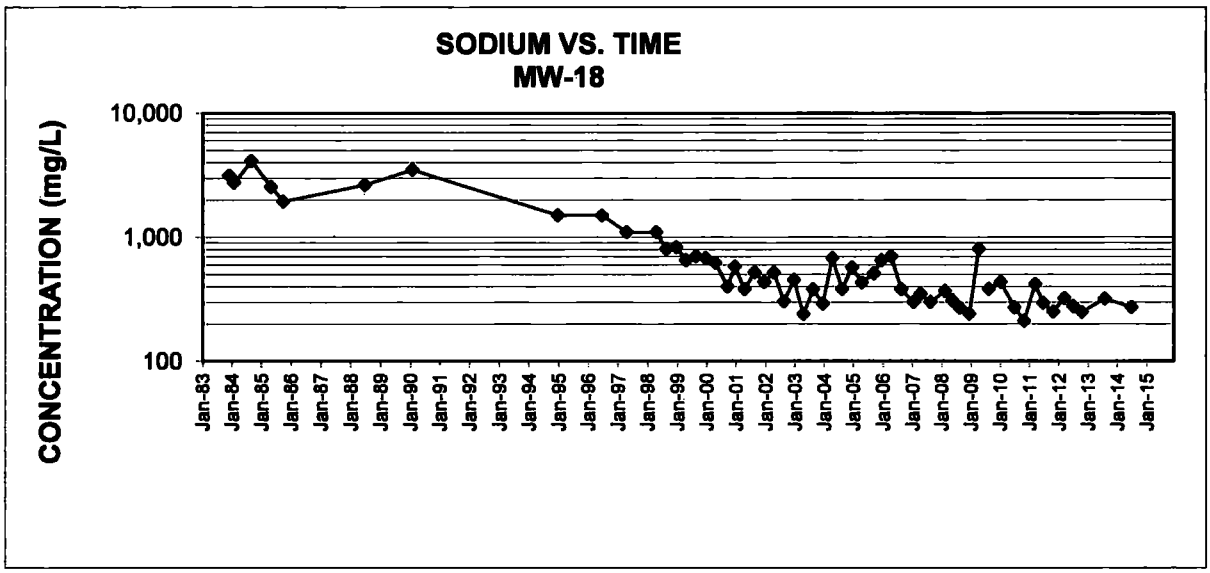
Jan-14
Jan-15


SODIUM VS. TIME
MW-18
CONCENTRATION (mg/L)
10,000
1,000
100
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
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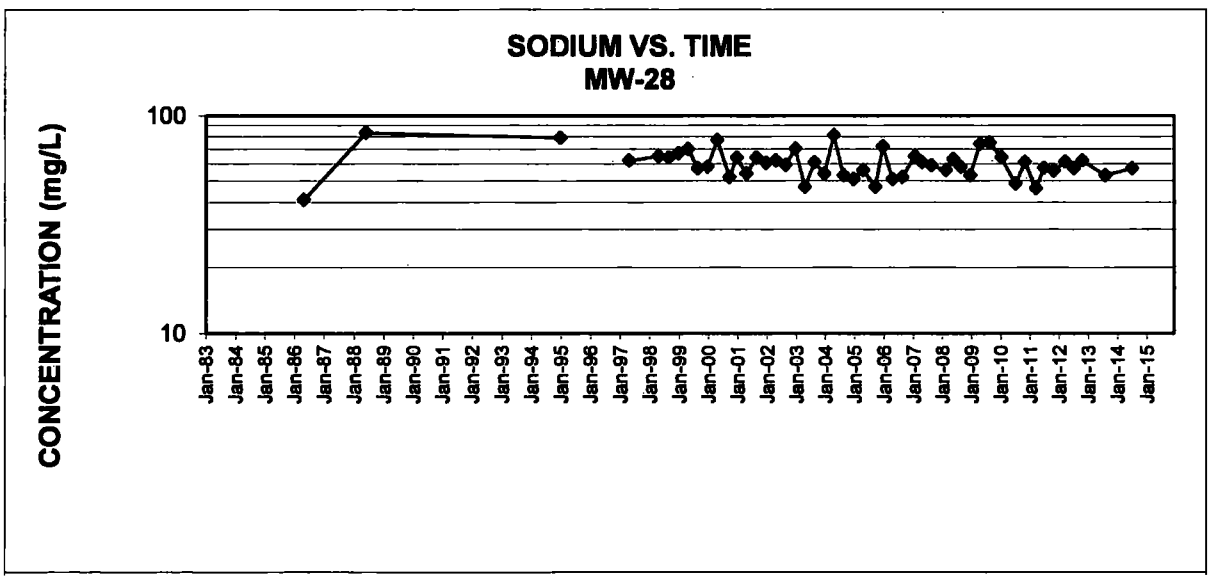
Jan-14
Jan-15


SODIUM VS. TIME
MW-28
CONCENTRATION (mg/L)
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
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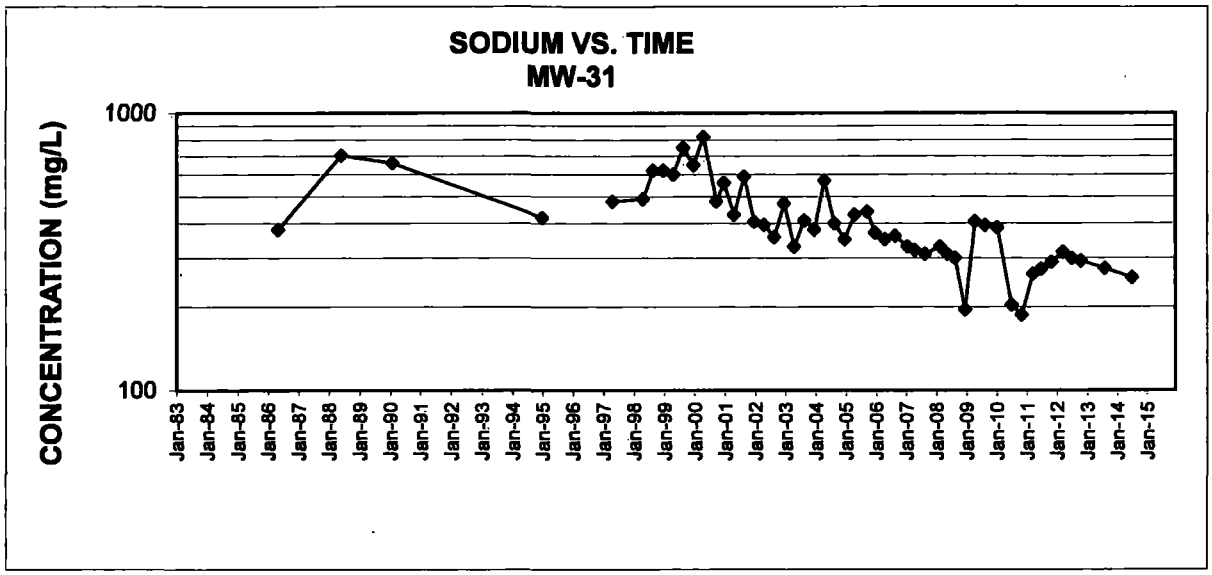
SODIUM VS. TIME
MW-31
CONCENTRATION (mg/L)
1000
100
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
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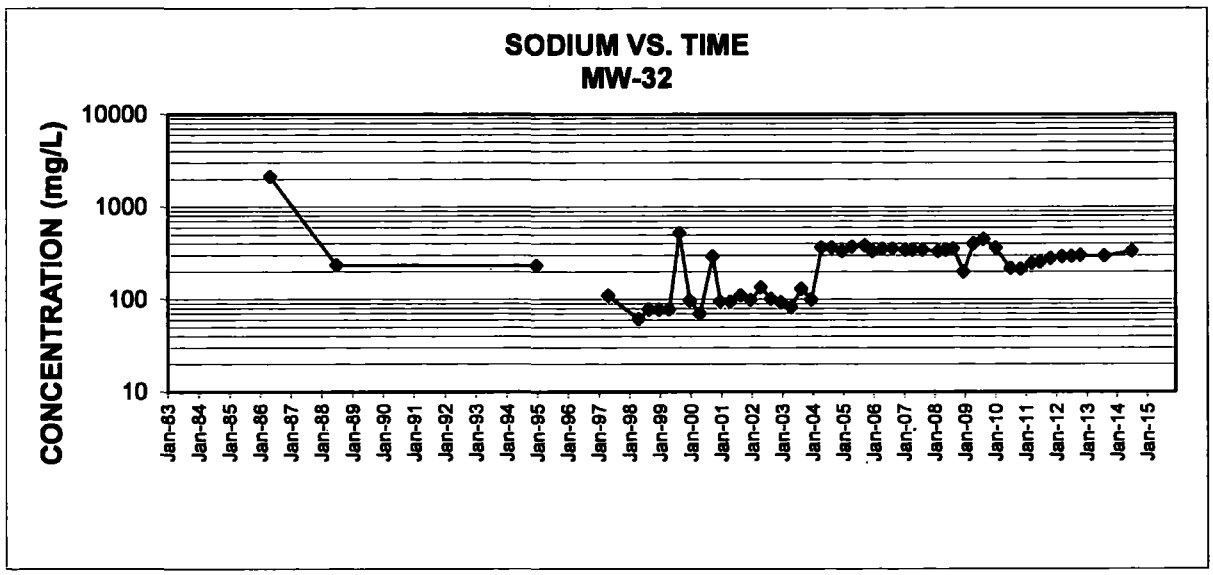
Jan-15


SODIUM VS. TIME
MW-32
CONCENTRATION (mg/L)
10000
1000
100
10
Jan-83
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Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
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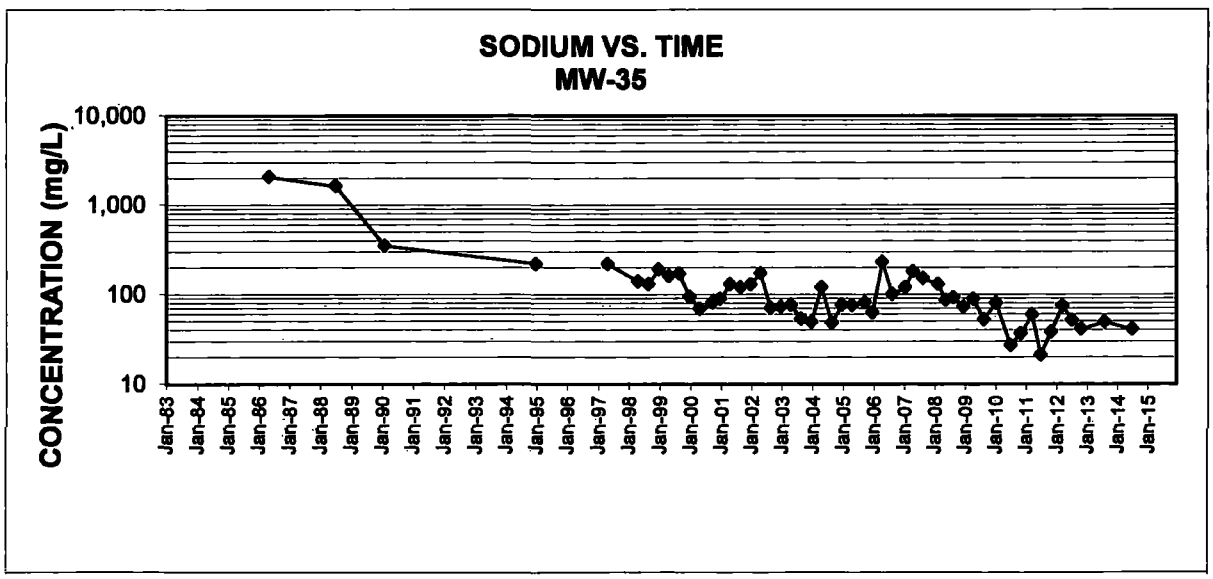
Jan-14
Jan-15


SODIUM VS. TIME
MW-35
CONCENTRATION (mg/L)
10,000
1,000
100
10
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
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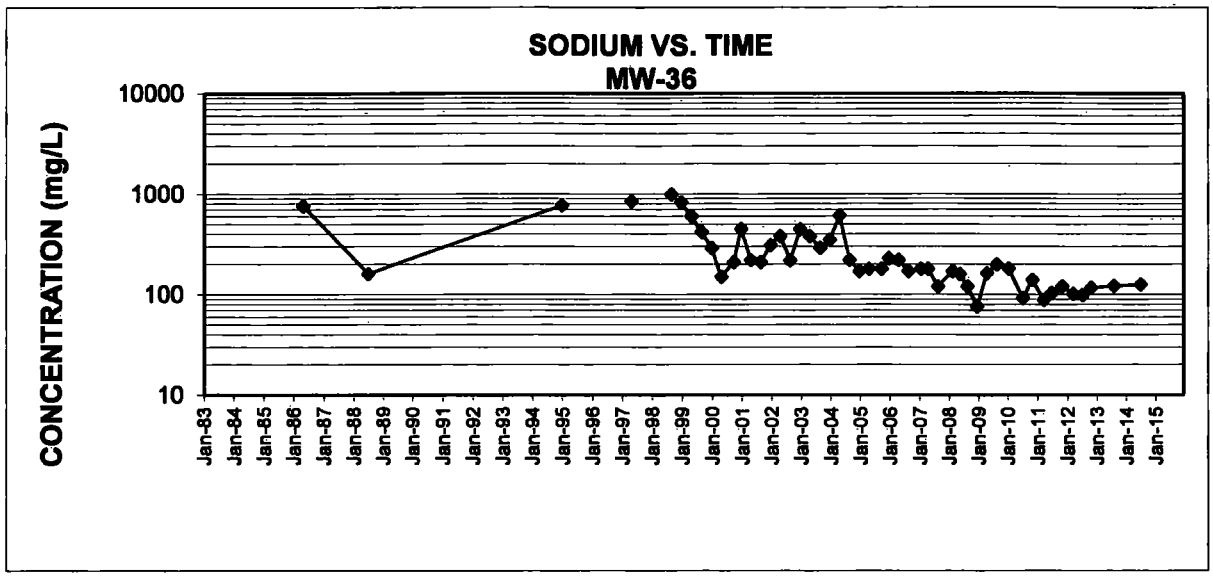
Jan-14
Jan-15


SODIUM VS. TIME
MW-36
CONCENTRATION (mg/L)
10000
1000
100
10
Jan-83
Jan-84
Jan-85
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Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
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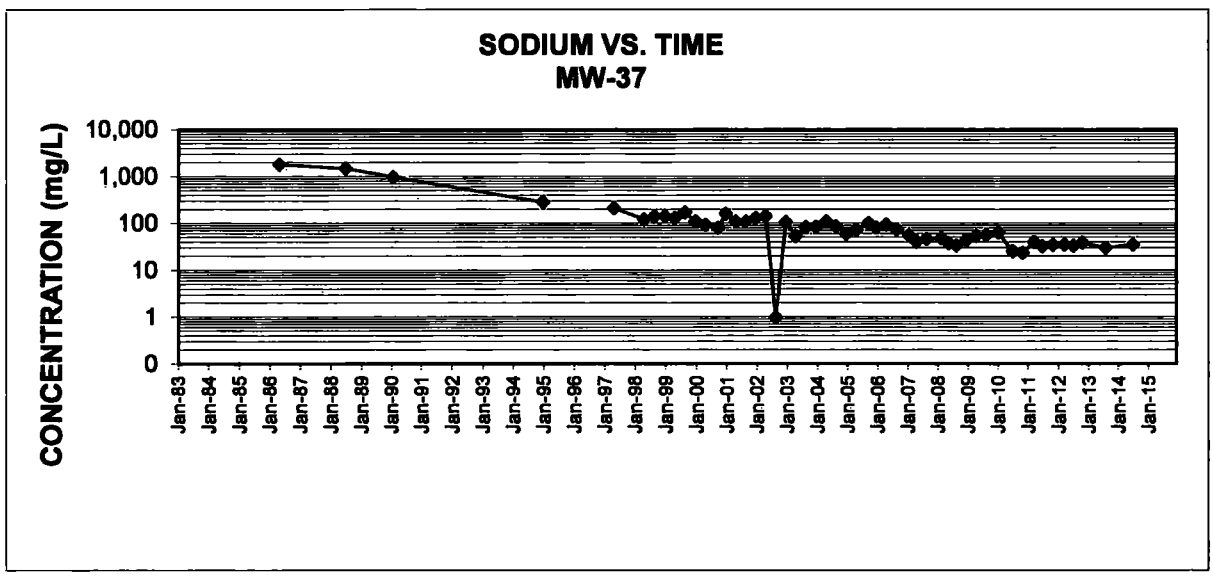
SODIUM VS. TIME
MW-37
CONCENTRATION (mg/L)
10,000
1,000
100
10
1
0
Jan-83
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Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
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APPENDIX E

CONTAMINANT MASS-IN-PLACE CALCULATIONS

APPENDIX E
ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES
COLLECTED JULY 2014

FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

SAMPLE I.D.:	MW-1	MW-2	MW-5	MW-7	MW-8	MW-10	MW-11	MW-12	MW-14	MW-15	MW-16	MW-17
Cyanide, Total	< 0.010	6.6	3.3/3.0	< 0.010	1.60	< 0.010	0.890	< 0.010	0.13	3.1	5.1	3.0
Fluoride	0.16/0.13	27.1	29.2/29.2	0.110	8.80	0.190	12.20	1.0	3.40	16	31.6	15.3

SAMPLE I.D.:	MW-18	MW-19	MW-28	MW-29S	MW-29D	MW-30	MW-31	MW-32	MW-34S	MW-34D	MW-35	MW-36
Cyanide, Total	14.6	< 0.010	< 0.010	1.8	1.2/1.3	1.6	2.9	5.4	4.7	3.7	3.7	1.1
Fluoride	73.5	0.43	0.450	24	7.5/8.5	12.0	25	54.6	21.8	21.4	3.9	19.7

SAMPLE I.D.:	MW-37	MW-39S	MW-39D	MW-40S	MW-40D	MW-42S	MW-42D
Cyanide, Total	0.13/0.14	3.1	3.2	2.5	5.1	1.8	2.6
Fluoride	1.9/1.9	131	17.8	21.4	36	20.9	27.4

NOTE: All results in mg/L.

5.9/6.2 - Primary sample and duplicate sample.

APPENDIX E (CONT.)
PLUME CONTOUR AREA CALCULATIONS
FOR TOTAL CYANIDE AND FLUORIDE
BASED ON RESULTS OF SAMPLING CONDUCTED JULY 2014

FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

TOTAL CYANIDE	CONTOUR INTERVAL (from Figure 4)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	0.2 - 1 mg/L	387,829
	1 - 5 mg/L	1,321,069
	5-10 mg/L	334,497
	10 - 20 mg/L	76,610

TOTAL FLUORIDE	CONTOUR INTERVAL (from Figure 3)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	2 - 4 mg/L	396,541
	4 - 10 mg/L	310,725
	10 - 15 mg/L	332,602
	15 - 25 mg/L	493,223
	25 - 50 mg/L	833,977
	50 mg/L	94,395

* CAD - Computer Aided Drafting

APPENDIX E (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED JULY 2014

FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

TOTAL CYANIDE

CONTOUR INTERVAL (from Figure 4)	MONITORING WELL ID	REPORTED CONCENTRATION (mg/L)	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
0.2 - 1 mg/L	MW-11	0.89	50.27	40.64
	MW-14	0.13	56.28	
	MW-37	0.13	15.38	
1 - 5 mg/L	MW-5	3.3	44.90	37.59
	MW-8	1.6	52.22	
	MW-15	3.1	25.06	
	MW-17	3.0	46.99	
	MW-29S&D	1.55*	51.48	
	MW-30	1.6	17.29	
	MW-31	2.9	31.91	
	MW-34S&D	4.2*	37.76	
	MW-35	3.7	11.90	
	MW-36	1.1	19.74	
	MW-39S&D	3.15*	46.91	
	MW-40S&D	3.8*	48.62	
	MW-42S&D	2.2*	53.90	
5 - 10 mg/L	MW-2	6.6	39.61	36.05
	MW-16	5.1	43.81	
	MW-32	5.4	24.72	
10 - 20 mg/L	MW-18	14.6	20.86	20.86

NOTE: In preparing the above-referenced isopleth map (i.e., Figure 4), the higher of the values reported for a primary and a duplicate sample, and the average of values for the shallow well and the deep well of a well cluster were used to draw contour lines.

* - Denotes average of the values for the shallow well and the deep well of a well cluster.
** - Mid-point of contour interval used in calculation.

AVERAGE AQUIFER THICKNESS CALCULATIONS WITHIN EACH PLUME CONTOUR INTERVAL BASED ON RESULTS OF SAMPLING CONDUCTED JULY 2014

FORMER ORMET CORPORATION SUPERFUND SITE HANNIBAL, OHIO

FLUORIDE

CONTOUR INTERVAL (from Figure 3)	MONITORING WELL ID	REPORTED CONCENTRATION (mg/L)	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
4 - 10 mg/L	MW-8 [MW-11] [MW-14] [MW-31] [MW-35]	7.0**	52.22 50.27 56.28 31.91 11.90	40.52
10 - 15 mg/L	MW-11 [MW-15] [MW-29D] MW-30	12.5**	50.27 25.06 51.48 17.29	36.03
15 - 25 mg/L	MW-15 MW-17 MW-29S&D MW-34S&D MW-36 MW-42S&D	16.0 15.3 16.0* 21.6* 17.5 24.2*	25.06 46.99 51.48 37.76 19.74 53.90	39.16
25 - 50 mg/L	MW-2 MW-5 MW-16 MW-31 MW-40S&D	27.1 29.2 31.6 25.0 36.0*	39.61 44.90 43.81 31.91 48.62	41.77
50mg/L	MW-18 MW-32 MW-39S&D	73.5 54.6 74.4*	20.86 24.72 46.91	30.83

NOTE: In preparing the above-referenced isopleth map (i.e., Figure 3), the higher of the values reported for a primary and a duplicate sample, and the average of values for the shallow well and the deep well of a well cluster were used to draw contour lines.

* - Denotes average of the values for the shallow well and the deep well of a well cluster.
** - Mid-point of contour interval used in calculation.

[ ] - Denotes use of a surrogate well for determination of a representative aquifer thickness.

NA - Not applicable.

APPENDIX E (CONT.)
TOTAL CYANIDE AND FLUORIDE MASS-IN-PLACE
CALCULATION WORKSHEET
BASED ON RESULTS OF SAMPLING CONDUCTED JULY 2014

FORMER ORMET CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

	Contour Interval	Contour Interval Area (in square feet) A	Average Aquifer Thickness (in feet) b	1. Aquifer Volume (in cubic feet) VA	Aquifer Porosity n	2. Volume of Ground Water (in cubic feet) Vgw	3. Volume of Ground Water (in Liters) Vgw	Average Concentration (mg/L) Cwi	4. Mass-in-Place for each interval (in mg) Mi	5. Mass-in-Place for each interval (in lbs) Mi
	(from Figure 4)									
TOTAL CYANIDE	0.2 - 1 mg/L	387,829	40.4	15,668,292	0.25	3,917,073	110,931,505	0.383	42,486,766	94
	1 - 5 mg/L	1,321,069	37.59	49,658,984	0.25	12,414,746	351,585,605	2.71	952,796,989	2,101
	5 - 10 mg/L	334,497	36.05	12,058,617	0.25	3,014,654	85,375,007	5.7	486,637,542	1,073
	10 mg/L - 20 mg/L	76,610	20.86	1,598,085	0.25	399,521	11,314,439	20.9	236,019,197	520
									Total Cyanide Mw:	3,788
	(From Figure 3)									
FLUORIDE	4 - 10 mg/L	310,725	40.52	12,590,577	0.25	3,147,644	89,141,285	7.00	623,988,996	1,376
	10 - 15 mg/L	332,602	36.03	11,983,650	0.25	2,995,913	84,844,242	12.5	1,060,553,030	2,339
	15 - 25 mg/L	493,223	39.16	19,314,613	0.25	4,828,653	136,747,458	18.4	2,520,255,647	5,557
	25 - 50 mg/L	833,977	41.77	34,835,219	0.25	8,708,805	246,633,353	29.8	7,349,673,907	16,206
	50 mg/L	94,395	30.83	2,910,198	0.25	727,549	20,604,201	67.5	1,390,783,553	3,067
									Total Fluoride Mw:	28,544

1. VA = A x b

1. VA = A x b
2. Vgw = VA x n
3. Vgw in ft3 multiplied by 28.32 L/ft3 = Vgw in Liters
4. Mi = Vgw x Cwi
5. Mi in mg divided by 1000 mg/g multiplied by 2.205x10-3 lb/g = Mi in pounds