HALEY ALDRICH

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REPORT ON
CORRECTIVE MEASURES IMPLEMENTATION

RACER SITE #10020
FORMER ENGINEERING CENTER
37350 ECORSE ROAD
ROMULUS, MICHIGAN

USEPA ID# MID000809905

by Haley & Aldrich of Michigan, Inc.
Ann Arbor, Michigan

for RACER
Detroit, Michigan

File No. 37515
December 2015

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1. Introduction

1.1 GENERAL

Haley & Aldrich, of Michigan Inc. (Haley & Aldrich) has prepared this *Corrective Measure Implementation Report (CMI Report)* on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER) of Ypsilanti, Michigan. This CMI Report summarizes investigations performed to date and the final Corrective Measure implemented at the former Romulus Engineering Center property located at 37350 Ecorse Road, Romulus, Wayne County, Michigan (the Site) (Figure 1).

The data collected to date have been evaluated to characterize the nature and extent of hazardous constituents in the environmental media at the Site. Human health and ecological risk evaluations were completed and provide a basis for determining whether the presence of hazardous constituents poses an unacceptable risk to human health. The final Corrective Measure was selected based on these evaluations.

2. Site Information

2.1 SITE DESCRIPTION AND HISTORY

The Site measures approximately 70 acres in size and is located at 37350 Ecorse Road in Romulus, Michigan. The Site is located at approximately 664 feet above mean sea level (AMSL). The property is generally a rectangular-shaped tract of land that is situated in a mixed industrial/commercial/residential area (see Figures 1 and 2). A portion of the Site is covered by the concrete slab of the former Romulus Engineering Center (measuring approximately 196,000 square feet in size) and associated paved parking lots. The remaining surface of the Site is covered by a paved access road, parking areas, and several undeveloped areas of trees and other vegetation.

The main building structure of the former Romulus Engineering Center was constructed in 1981 and primarily housed dynamometer cells for engine testing. The building was demolished to its foundation slab in 2010. During demolition, the floors of all associated pits and subsurface features (e.g., wastewater pits) were broken to prevent them from collecting precipitation, and they were filled to grade with crushed concrete material.

2.1.1 Site Geology and Hydrogeology

Site geologic conditions have been characterized to a depth of approximately 30 feet below ground surface (bgs) or 634.6 feet AMSL and are described in the Resource Conservation and *Recovery Act (RCRA) Facility Investigation (RFI) Report, Former Romulus Engineering Center, 37350 Ecorse Road, Romulus Michigan, USEPA ID #MID000809905* (Haley & Aldrich, April 2013) (RFI Report).

Shallow groundwater encountered at the Site is on average less than one foot bgs. Shallow groundwater potentiometric surface elevations were recorded in January, July, and October 2013, April and July 2014, and April and July 2015. Collectively, these readings ranged from approximately 659 to 665 feet AMSL, indicating a gradient toward the north-northeast of the Site. The groundwater elevation data summary table and shallow groundwater potentiometric surface contour figures for these groundwater monitoring events is presented in Appendix A.

2.1.2 Groundwater Use/ Water Supply

Drinking water is supplied to the Site by the City of Romulus through the Detroit Water and Sewage Department, with the ultimate source of drinking water to the Site being the Detroit River.

The State of Michigan requires licensure of all groundwater well drillers operating in the State, and Wayne County requires permits be issued for all drinking water well installations. These various overlapping requirements provide strict control over drinking water well installations in the area of the Site.

No drinking water wells are identified within one mile of the Site per Environmental Data Resources, Inc. (EDR®) Report for the Site (September 30, 2011).

2.1.3 Land Use Classification

The Site is located in a mixed industrial/commercial/residential area. It is bordered to the north and south by mostly vacant undeveloped land, to the east by General Motors Romulus Powertrain (36880 Ecorse Road), and to the west by light industrial property and residential areas beyond.

The Site is assessed as commercial land and zoned by the City of Romulus, namely as M-2, General Industrial District. According to Article 8 of the City of Romulus zoning ordinance, activities permitted in M-2 districts include manufacturing, assembly and fabrication of large-scale or specialized industrial operations likely to produce external physical effects. M-2 districts are areas designated for use where heavy industrial users have access to major roadways, utilities and other infrastructure. It is anticipated that the potential future use of the Site will remain commercial/industrial.

2.1.4 Future Site Redevelopment Plans

The Site is anticipated to remain in its current state until it is sold for future industrial use.

Based on the property use and characteristics, and the land use limitations for the Site, which limit the land uses to those defined by the Michigan Department of Environmental Quality (MDEQ) as non-residential, the Non-Residential Risk-Based Screening Levels (RBSLs) are applicable to assess potential exposure pathways.

3. Summary of Previous Investigations

3.1 HISTORICAL ACTIVITIES

Based on review of available records, historic investigations of the Site have been limited to an investigation of a diesel fuel release from an aboveground storage tank (AST) farm in 2007 and an Underground Storage Tank Site Assessment associated with in-place closure of a 10,000-gallon used oil underground storage tank (UST) in 1992. These historical investigations are described in the *Resource Conservation and Recovery Act Current Conditions Summary, Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan, USPEA ID #MID000809905* (Haley & Aldrich, December 2011) (CCS).

3.2 RECENT ACTIVITIES

Six Areas of Interest (AOIs) were investigated during implementation of the RFI, which was conducted pursuant to the *Resource Conservation and Recovery Act Facility Investigation Work Plan, Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan, USEPA ID #MID000809905* (Haley & Aldrich, September 2012; approved by the MDEQ 15 November 2012) (RFI Work Plan). The RFI procedures, methods, and the resulting data are documented in the RFI Report (Haley & Aldrich, April 2013).

The RFI was conducted from approximately mid-December 2012 through February 2013 to characterize the nature and extent of any release(s) of hazardous waste and/or hazardous constituents at the Site which may pose an unacceptable risk to human health and the environment. Analytical results for the soil and groundwater samples collected at the Site were compared with screening criteria that are developed by the MDEQ to facilitate implementation of Part 201 of Michigan's Natural Resources and Environmental Protection Act, Michigan Public Act 451 of 1994, as amended (Part 201 Criteria).[1] The RFI data and screening criteria are presented in RFI Report and Appendix B of this CMI Report.

The significance of potential exposures to Site-related concentrations of constituents in potential exposure media was evaluated based on current and reasonably expected future land use at and around the Site. Potential exposure media included soil and groundwater. There is no exposure to surface water and/or sediment, since there are no surface water bodies on the property (only limited ephemeral ponds) and no significant impact to off-site surface water bodies. The only potential pathways of concern involving these screening criteria include the potable use of groundwater at or in the vicinity of the Site (i.e., on-site and off-site routine workers, maintenance workers, and construction workers, as well as local residents and Site trespassers). Currently there is no evidence of exposure, as these pathways are incomplete due to the following reasons:

- No current use of groundwater at the Site;
- Drinking water is supplied to the Site and the surrounding area by the City of Romulus through the Detroit Water and Sewage Department, with the ultimate source of drinking water to the Site being the Detroit River;

[1] Updated by MDEQ on September 28, 2012.

- No water wells present within one mile radius of the Site;
- Wayne County requires permits be issued for all drinking water well installations; and
- State of Michigan requires licensure of all groundwater well drillers operating in the State.

Constituents detected at the Site as part of the RFI included primarily select metals at various locations and limited detections of polycyclic aromatic hydrocarbons (PAHs) and/or volatile organic compounds at only a few locations. Of the Part 201 Criteria, only the following criteria were exceeded when compared to the RFI analytical data for the Site:

- Part 201 Nonresidential Drinking Water Protection Criteria (soil);
- Part 201 Nonresidential Drinking Water Criteria (groundwater);
- Part 201 Groundwater to Surface Water Interface Protection (GSIP) Criteria (soil); and
- Part 201 Groundwater to Surface Water Interface (GSI) Criteria (groundwater).

One soil sample exceeded the Nonresidential Drinking Water Protection Criteria of 4.6 mg/kg for arsenic. The concentration of arsenic did not exceed the Part 201 State Default Background Level of 5.8 mg/kg. No other soil data exceeded this screening criterion.

The Nonresidential Drinking Water Criteria of 0.010 mg/L for arsenic was exceeded in groundwater at two locations. The concentrations of arsenic detected in Site groundwater are believed to be present due to natural conditions (i.e., types of soil deposits), and are not believed to be attributed to Site operations because arsenic is not known to have been used at the Site, nor is it likely to have been a component of Site-related activities. Additionally, these exceedances of Nonresidential Drinking Water Criterion for arsenic are within the collective range of concentrations typical of well water of Wayne County (greater than 0.010 mg/L), as described in MDEQ public outreach information.[2]

Exceedances of Part 201 GSIP Criteria for chromium, selenium, and naphthalene were detected in soil samples SB-01-04, SB-01-05, and SB-01-08; however, these constituents were not detected above reporting limits in associated groundwater samples.

Exceedances of GSI Criteria for copper and selenium were detected in samples collected from two temporary wells; TW-01-107 and TW-03-116. These results prompted additional monitoring, as discussed in Section 3.2.1.

3.2.1 CA725, CA750 and Supplemental RFI Activities

In electronic mail correspondence dated July 18, 2013 and a letter dated July 22, 2013, the MDEQ stated that it generally agreed with the findings of the RFI Report, the CA725 (Current Human Exposures Under Control Environmental Indicator (EI) RCRIS Code CA725) determination that human exposures are under control, and the CA750 (RCRA Corrective Action Environmental Indicator (EI) RCRAInfo Code CA750 Migration of Contaminated Groundwater Use Under Control) determination that groundwater is under control. However, the Agency requested revisions to the CA725 to address arsenic concentrations that fall within regional background levels. Additionally, the MDEQ requested collection of at least three additional rounds of groundwater static water levels to monitor seasonal effects through the spring,

[2] http://www.michigan.gov/documents/deq/deq-wd-gws-wcu-arsenicwellwater_270592_7.pdf.

summer and fall months on shallow groundwater gradients (the original data was collected in winter). This data would also be used to support the conclusion of the CA750. A revised CA725 was submitted, which was executed by the MDEQ on August 19, 2013.

The three additional rounds of groundwater elevation measurement were performed in July 2013, October 2013, and April 2014. Additionally, a subsequent round of groundwater elevation measurements was collected in July 2014 to confirm conditions at the Site. The groundwater elevation data was provided to the MDEQ following each field event. The data demonstrated that the groundwater gradients remained generally consistent throughout the seasons, with groundwater flow to the north-northeast of the site.

As reported in the RFI Report, analytical results for groundwater samples collected from TW-01-107 and TW-03-116 in January/February 2013 identified low level detections of copper and selenium above GSI Criteria; however, sitewide groundwater analytical results for copper and selenium showed that the down-gradient extents for these constituents were defined below criteria. To confirm groundwater conditions at the Site, groundwater samples were collected from wells TW-01-107 and TW-03-116 and downgradient wells TW-01-101, TW-01-104, TW- 01-105, and TW-02-109 on September 2-3, 2014, and the samples analyzed for total and dissolved copper and selenium using laboratory method E 200.8. Sample collection and data evaluation were consistent with the Field Sampling Plan and QAPP for the Site (Haley & Aldrich, September 24, 2012, approved by MDEQ in correspondence to RACER dated November 15, 2012). Static groundwater elevation measurements were collected at each of the 15 temporary wells located at the Site commensurate with the groundwater sampling.

The analytical results for the September 2014 sampling event were provided to the MDEQ on September 9, 2014. The results demonstrated that all four downgradient wells and TW-01-107 were below all screening criteria, including GSI Criteria, for copper and selenium. Total and dissolved copper observed at well TW-03-116 were non-detect or below screening criteria. Low levels of total and dissolved selenium detected at well TW-03-116 exceeded the GSI Criteria; however, this location is separated from the nearest point of exposure by distance and several wells in which selenium did not exceed criteria. The groundwater elevation data demonstrated gradients which are generally toward the north-northeast of the Site. Based on the RFI data and the subsequent collected groundwater data, the MDEQ approved the CA750 on September 18, 2014.

In electronic mail correspondence dated November 3, 2014, RACER agreed to the MDEQ's request for two additional rounds of groundwater sampling to demonstrate that no constituents were migrating off-site and to provide data to account for possible seasonal variation (groundwater sampling was previously performed in January 2013 [winter] and September 2014 [fall]).

Groundwater sampling was completed on April 14-15, 2015 (spring) and July 14-15, 2015 (summer). These field events included measurement of groundwater static water elevations from each of the 15 temporary wells located at the Site and collection of groundwater samples from six temporary wells: TW-01-107 and TW-03-116, and down-gradient temporary wells TW-01-101, TW-01-104, TW-01-105, and TW-02-109. The groundwater samples were analyzed for total and dissolved copper and total and dissolved selenium using laboratory method E 200.8. The validated data was screened against Michigan Part 201 Generic Cleanup Criteria. The MDEQ collected split samples from TW-01-101 and TW-01-104 during the July 2015 field event.

The summary of the data collected during the supplemental groundwater monitoring events was provided to MDEQ following each event. The data demonstrates the following:

- Copper and selenium have been detected in exceedance of their respective GSI Criteria in two temporary wells, TW- 01-107 and TW-03-116; however, sitewide groundwater analytical results for copper and selenium show that the down-gradient extents were defined below criteria;
- Groundwater flow at the Site is consistently to the north-northeast; and
- Groundwater contamination has not migrated off-site.

The summary of the data is presented in Table B-1 and the criteria against which detections were screened are presented in Table B-2 of Appendix B. The summary of the groundwater elevation data collected and the corresponding shallow groundwater potentiometric contours are presented in Appendix A. MDEQ has accepted the data summary submittals as a supplement to the RFI Report and in lieu of submittal of a revised RFI report.

4. Corrective Measures

Electronic mail correspondence received from the MDEQ on September 9, 2015 indicated that because various remediation options are not being evaluated for the Site, with completion of the RCRA Facility Assessment (e.g., CCS) and RFI phases of the Corrective Action process complete, and given the intent to record a Declaration of Restrictive Covenant on the deed for the Site, a Corrective Measures Study for the Site was considered complete.

4.1 WELL ABANDONMENT

Because the investigation activities for the Site were determined to be complete (MDEQ electronic mail correspondence, September 3, 2015), a plan for abandonment of the 15 temporary groundwater monitoring wells located at the Site was submitted to the MDEQ (*Well Abandonment Plan, RACER Romulus Site #10020*, [Haley & Aldrich, October 9, 2015]). The Well Abandonment Plan was approved by the MDEQ in email correspondence on October 12, 2015, and implementation of the Plan occurred November 3-4, 2015.

As stated in the Well Abandonment Plan, in situations where the entire well assembly could not be removed due to breakage or other compromise, the well casing was cut and removed at least two feet below grade and abandoned in place by backfilling the well with hydrated granular bentonite. Eight wells were abandoned in place due to breakage and the casing cut and removed to at least two feet bgs. Additionally, two wells were abandoned in place due to the presence of ephemeral ponded water in the well area. These wells were abandoned in place by backfilling with hydrated granular bentonite. The ground surface was restored to pre-work conditions. Documentation of the well abandonment is presented in Appendix D.

In electronic mail correspondence received October 12, 2015, the MDEQ informed RACER that the Site's Well Abandonment Plan coupled with recoding of the approved draft Declaration of Restrictive Covenant represented a Corrective Measures Implementation Work Plan for the Site.

4.2 SITEWIDE INSTITUTIONAL CONTROLS

Corrective Measures have been implemented at the Site in the form of sitewide institutional controls to address the following objectives involving potential future exposures:

- Prohibit future on-site potable use of groundwater; and
- Prohibit future on-site exposure via residential pathways.

These institutional controls have been established through deed restrictions in the form of the Amended and Restated Declaration of Restrictive Covenant, attached in Appendix C, which was recorded with the Wayne County Register of Deeds on October 28, 2015. The Restrictive Covenant runs with the property, associated with the Site, and is binding on the property owner; future owners; and their successors and assigns, lessees, easement holders, and any authorized agents, employees, or persons acting under their direction and control. Specifically, controls under the Restrictive Covenant include restrictions that maintain continued non-residential use of the Site, and prohibit any future potable use of groundwater. These restrictions run with the property in perpetuity, unless modified or rescinded by written approval

of MDEQ. The area subject to the sitewide deed restrictions is illustrated as the full perimeter boundary of the Site on Figure 3.

5. Conclusions

The results of the RFI and supplemental monitoring activities demonstrate that the very limited groundwater contamination identified in a couple of the Site monitoring wells is not migrating off-site. MDEQ has approved the implementation of Corrective Measures in the form of sitewide institutional controls via an Amended and Restated Declaration of Restrictive Covenant (Appendix C) as sufficient to protect human health and the environment, and effectively ensure that the human health risk screening assumptions for future on-site land and groundwater use remain valid.

With the recording of the Restrictive Covenant and abandonment of all monitoring wells, all work has been completed as necessary and Corrective Action is complete. Accordingly, RACER hereby requests MDEQ approval of Corrective Action Complete with Controls.

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

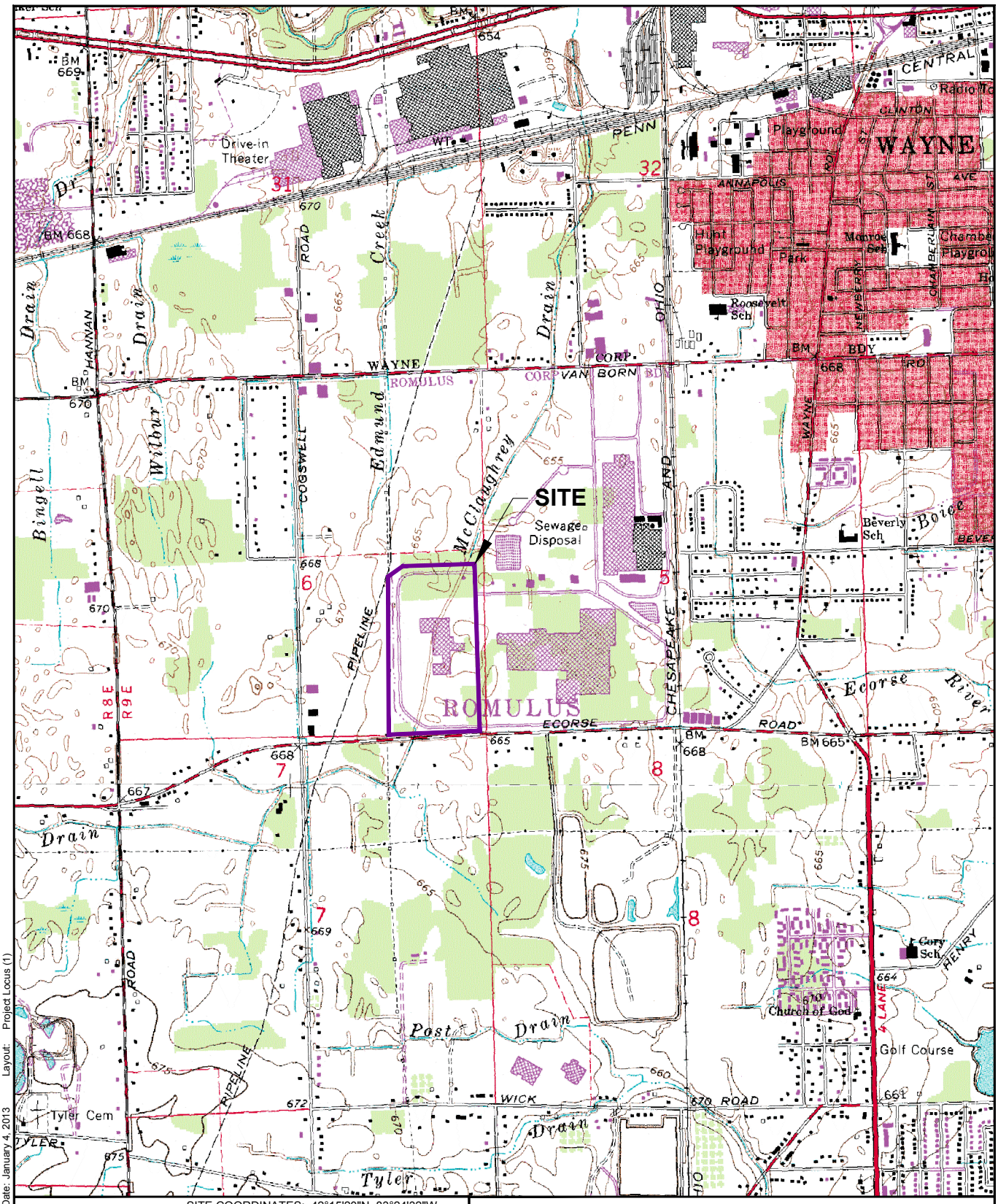
Name: _____

Title: _____

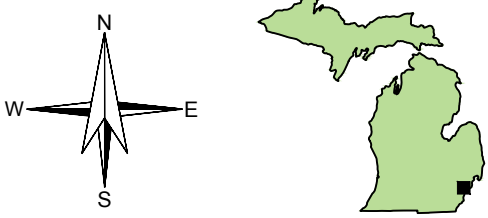
References

1. ARCADIS-US, Inc., *Remediation Cost Estimate Summary*, 27 October 2009, Revised May 2010.
2. Encore Environmental Consortium LLC, *Phase II Environmental Site Assessment GMPT – Romulus Engineering Center AST Fuel Distribution Area, 3750 Ecorse Road, Romulus, MI 48174*, 31 October 2007.
3. Environmental Data Recourses, Inc., *Radius Map Report With GeoCheck®, Inquiry Number 3176434.2s, CPC Romulus Engineering Center, 37350 Ecorse Road, Romulus, MI 48174*, 30 September 2011.
4. Haley & Aldrich of Michigan, Inc., *Documentation of Environmental Indicator Determination, RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725) − Current Human Exposures Under Control*, 19 April 2013.
5. Haley & Aldrich of Michigan, Inc., *Documentation of Environmental Indicator Determination, RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750) − Migration of Contaminated Groundwater Under Control*, 19 April 2013 (Revised 31 July 2013).
6. Haley & Aldrich of Michigan, Inc., *Resource Conservation and Recovery Act Current Conditions Summary for Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan*, 30 December 2011.
7. Haley & Aldrich of Michigan, Inc., *Resource Conservation and Recovery Act Facility Investigation Quality Assurance Project Plan for Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan*, 24 September 2012.
8. Haley & Aldrich of Michigan, Inc., *Resource Conservation and Recovery Act Facility Investigation Field Sampling Plan for Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan*, 24 September 2012.
9. Haley & Aldrich of Michigan, Inc., *Resource Conservation and Recovery Act Facility Investigation Work Plan for Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan*, 24 September 2012.
10. Haley & Aldrich of Michigan, Inc., *Resource Conservation and Recovery Act Facility Investigation Report for Former GM Romulus Engineering Center, 37350 Ecorse Road, Romulus, Michigan*, 19 April 2013.
11. Haley & Aldrich of Michigan, Inc., *Revised Documentation of Environmental Indicator Determination, RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725) − Current Human Exposures Under Control*, 19 April 2013.
12. Michigan Department of Environmental Quality, *Arsenic in Well Water*, http: // www.michigan.gov / documents / deq / deq-wd-gws-wcu-arsenicwellwater_270592_7.pdf.

FIGURES



SITE COORDINATES: 42°15'20"N 83°24'32"W



U.S.G.S. QUADRANGLE: BELLEVILLE, MICHIGAN

HALEY ALDRICH

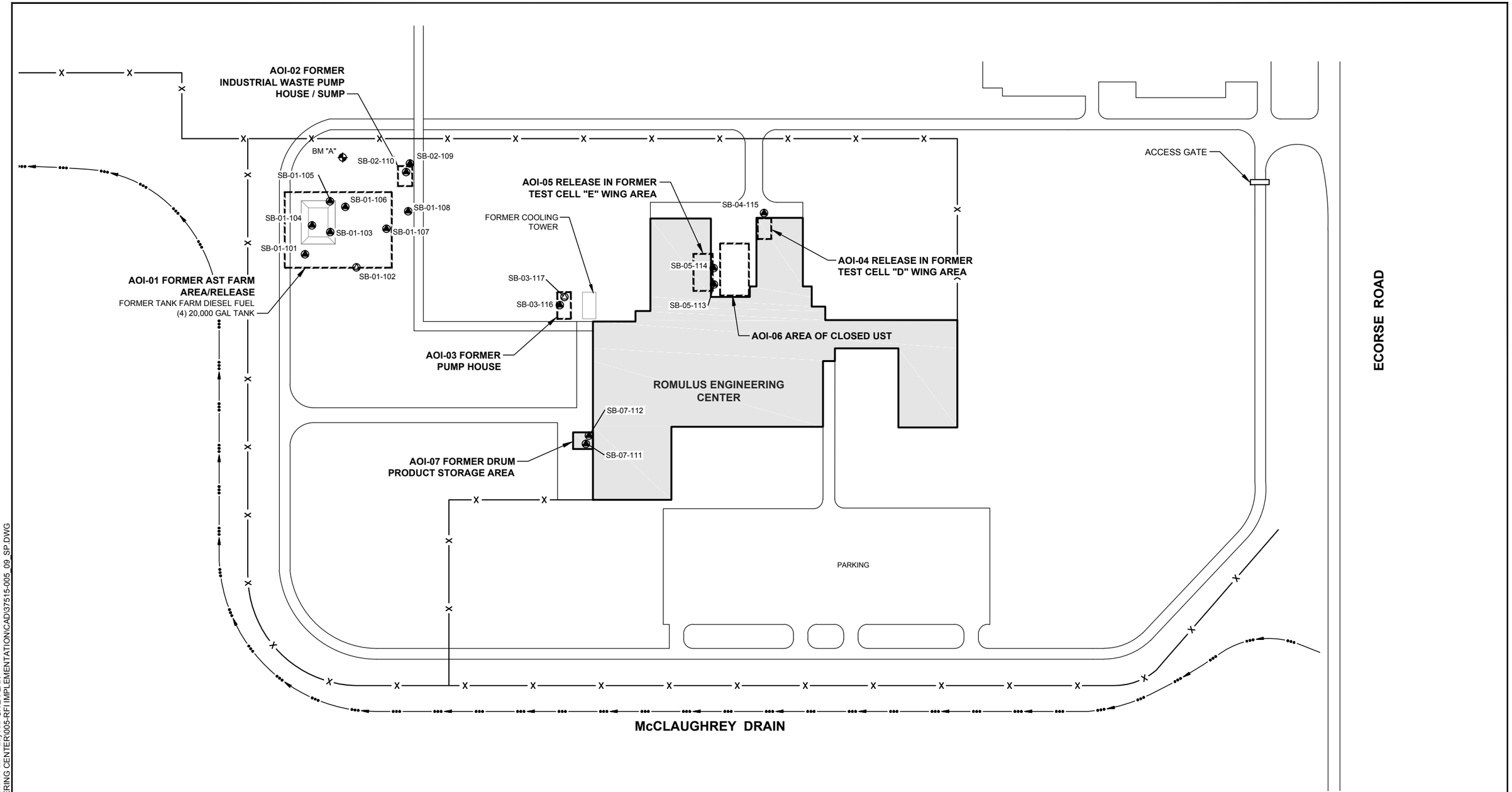
FORMER ROMULOUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULOUS, MICHIGAN

PROJECT LOCUS

SCALE: 1:24000
JANUARY 2013

FIGURE 1

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_01.dwg Layout: Project Locus (1)
Operator Name: LUCIDO, SAM Plot Date: January 4, 2013



LIBBY, PAT Printed: 10/9/2015 11:17 AM Layout: SITE PLAN
\\DTRCOMMON\37515-ROMULUS ENGINEERING CENTER\005-RFI\IMPLEMENTATION\CAD\37515-005_09_SP.DWG

LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- MONITORING WELL
- SOIL BORING
- BENCHMARK

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
2. THE SITE IS COMPLETELY DEMOLISHED.
3. BENCHMARK "A" ELEVATION = 664.49 (NAVD88) A TOP RAILROAD SPIKE IN NW FACE OF 22 INCH OAK. LOCATED 200'± SOUTH AND 40'± WEST OF THE NE FENCE CORNER AT 37350 ECORSE ROAD.

N E S W

0 200 400

APPROXIMATE SCALE IN FEET

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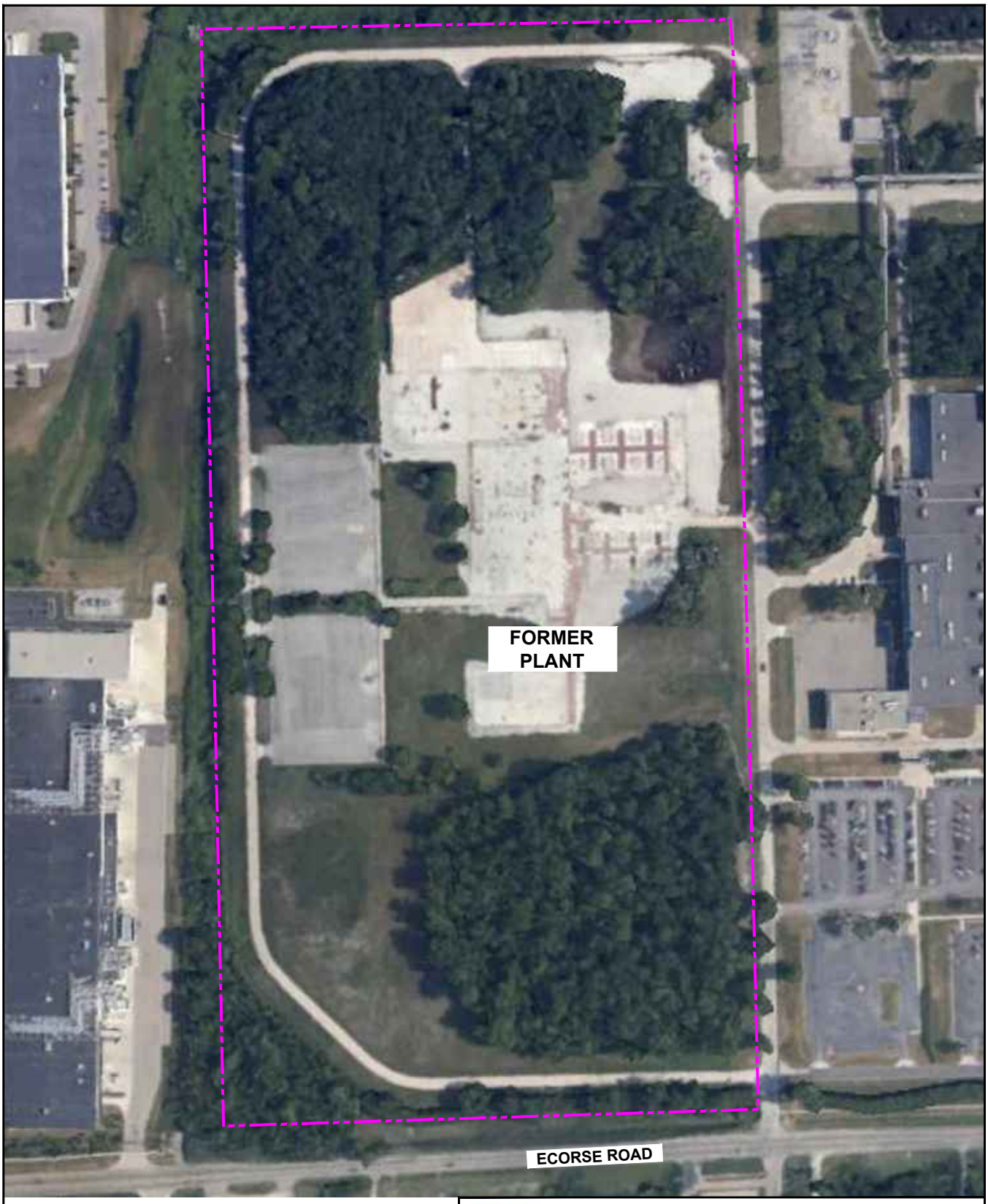
FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SITE PLAN

SCALE: AS SHOWN
OCTOBER 2015

FIGURE 2



LEGEND

APPROXIMATE EXTENT OF PROPOSED DEED RESTRICTION AREA - LIMITS TO BE DEFINED BY A BOUNDARY SURVEY

NOTES

1. AERIAL PHOTOGRAPH TAKEN FROM GOOGLE EARTH, 2013 IMAGERY.
2. COORDINATES 42°15'20" N, 83°24'32" W

N
W E
S

0 150 300
SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

PROPOSED DEED RESTRICTION AREA

SCALE: AS SHOWN
□ANUARY 2014

FIGURE 3

\\DTR\COMMON\37515-ROMULUS ENGINEERING CENTER\014\CAD\37515-014-0004.DWG

APPENDIX A

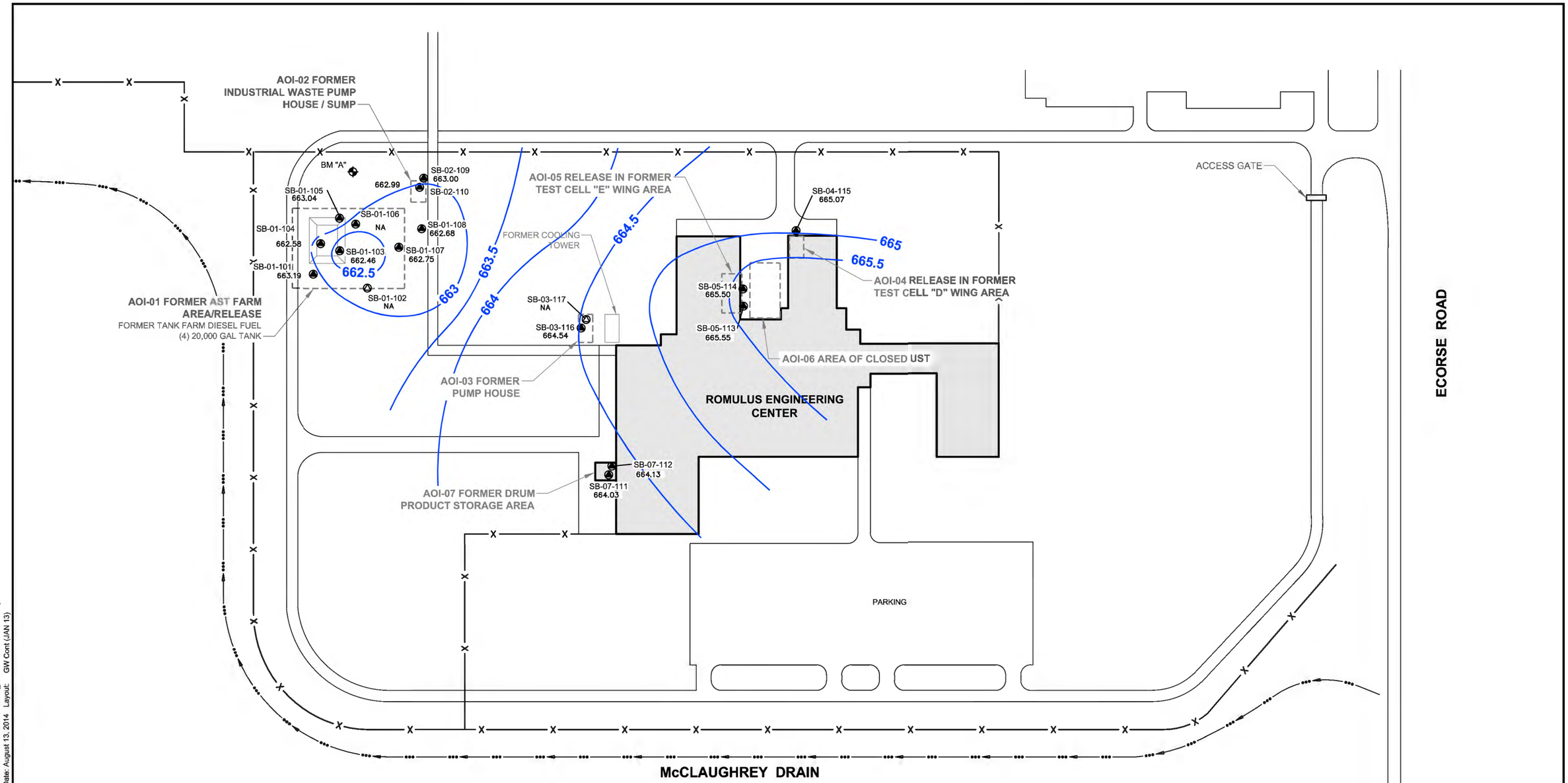
Shallow Groundwater Potentiometric Surface Contours

TABLE III (Updated July 16, 2015)
TEMPORARY MONITORING WELL INVENTORY AND COMPLETION SUMMARY
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MICHIGAN

Well ID	AOI Location	Date Installed	Approximate Location		Ground Elevation (ft. AMSL)	Top of Riser Elevation (ft. AMSL)	Well Diameter (in.)	Depth of Well from ground surface (ft.)	Screened Interval (ft BGS)	Screen Elevation (ft. AMSL)
			Northing	Easting						
01-101	AOI-01	12/17/2012	277830.45	13382927.68	664.61	666.46	1.5	8	3-8	661.61 - 665.61
01-103	AOI-01	12/18/2012	277779.47	13382976.34	663.98	665.58	1.5	10	5-10	658.98 - 653.98
01-104	AOI-01	12/17/2012	277817.94	13382989.27	665.05	666.01	1.5	14	9-14	656.05 - 651.05
01-105	AOI-01	12/18/2012	277782.11	13383041.15	665.16	665.71	1.5	10	5-10	660.16 - 655.16
01-106	AOI-01	12/18/2012	277749.46	13383030.55	661.09	664.12	1.5	13	3-13	658.09 - 648.09
01-107	AOI-01	12/20/2012	277661.69	13382987.52	662.91	665.77	1.5	7	2-7	660.91 - 655.91
01-108	AOI-01	12/20/2012	277617.38	13383025.68	662.01	664.94	1.5	7	2-7	660.01 - 655.01
02-109	AOI-02	12/18/2012	277616.85	13383125.95	665.20	666.95	1.5	13	3-13	662.20 - 652.20
02-110	AOI-02	12/18/2012	277624.32	13383107.85	664.81	666.44	1.5	9	4-9	660.81 - 655.81
07-111	AOI-07	12/18/2012	277227.83	13382549.99	664.82	665.68	1.5	9	4-9	660.82 - 655.82
07-112	AOI-07	12/18/2012	277222.09	13382567.78	664.56	665.91	1.5	8.5	3.5-8.5	661.06 - 656.06
05-113	AOI-05	12/19/2012	276970.49	13382893.70	665.50	667.36	1.5	8	3-8	662.50 - 657.50
05-114	AOI-05	12/19/2012	276972.49	13382927.88	665.53	668.56	1.5	7	2-7	663.53 - 658.53
04-115	AOI-04	12/19/2012	276870.59	13383047.21	665.41	666.57	1.5	9	4-9	661.41 - 656.41
03-116	AOI-03	12/19/2012	277292.61	13382839.32	665.46	668.15	1.5	10	5-10	660.46 - 655.46

Date of GW Level Monitoring	1/30/2013			7/25/2013			10/3/2013			4/15/2014			7/17/2014			9/2/2014			4/14/2015			7/14/2015		
Well ID	Measured Depth to Bottom from TOR (ft.)	Depth to Water (ft. below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR (ft.)	Depth to Water (ft. below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR (ft.)	Depth to Water (ft. below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR (ft.)	Depth to Water (ft. below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR	Depth to Water (ft below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR	Depth to Water (ft below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR	Depth to Water (ft below TOR)	GW Elevation (ft. AMSL)	Measured Depth to Bottom from TOR	Depth to Water (ft below TOR)	GW Elevation (ft. AMSL)
01-101	10.03	3.27	663.19	NT	4.55	661.91	10.05	6.75	659.71	10.05	3.08	663.38	10.05	6.21	660.25	10.05	6.09	660.37	10.05	3.10	663.36	10.04	4.86	661.60
01-103	11.55	3.12	662.46	NT	2.20	663.38	11.60	3.23	662.35	11.60	1.93	663.65	11.60	2.63	662.95	11.60	2.54	663.04	11.60	2.10	663.48	11.50	1.89	663.69
01-104	15.03	3.43	662.58	NT	2.90	663.11	15.08	4.02	661.99	15.05	2.55	663.46	15.05	3.46	662.55	15.05	3.17	662.84	15.05	2.60	663.41	15.05	2.61	663.40
01-105	10.30	2.67	663.04	NT	2.40	663.31	10.05	2.72	662.99	10.04	2.34	663.37	10.04	2.61	663.10	10.04	2.43	663.28	10.04	2.30	663.41	10.05	2.40	663.31
01-106	NT	NT	NT	NT	1.41	662.71	16.65	0.95	663.17	16.60	0.68	663.44	16.60	0.83	663.29	16.60	0.75	663.37	16.60	0.65	663.47	16.60	0.70	663.42
01-107	10.03	3.02	662.75	NT	2.40	663.37	10.05	2.62	663.15	10.04	2.32	663.45	10.04	2.5	663.27	10.04	2.42	663.35	10.04	2.25	663.52	10.03	2.37	663.40
01-108	10.30	2.26	662.68	NT	1.55	663.39	10.03	1.76	663.18	10.00	1.48	663.46	10.00	1.66	663.28	10.00	1.58	663.36	10.00	1.36	663.58	9.98	1.53	663.41
02-109	15.03	3.95	663.00	NT	4.02	662.93	15.05	4.65	662.30	15.05	3.85	663.10	15.05	4.46	662.49	15.05	4.10	662.85	15.05	3.85	663.10	15.05	3.96	662.99
02-110	10.02	3.45	662.99	NT	3.18	663.26	10.05	3.48	662.96	10.03	3.15	663.29	10.03	3.39	663.05	10.03	3.20	663.24	10.03	3.14	663.30	10.03	3.17	663.27
07-111	10.03	1.65	664.03	NT	2.10	663.58	10.05	2.73	662.95	10.05	1.81	663.87	10.05	2.31	663.37	10.05	2.00	663.68	10.05	1.96	663.72	10.02	1.95	663.73
07-112	10.00	1.78	664.13	NT	2.26	663.65	10.07	2.91	663.00	10.05	1.95	663.96	10.05	2.48	663.43	10.05	2.14	663.77	10.05	2.11	663.80	10.05	2.09	663.82
05-113	NT	1.81	665.55	NT	2.30	665.06	10.05	2.91	664.45	10.03	2.03	665.33	10.03	2.53	664.83	10.03	2.06	665.30	10.03	2.44	664.92	10.03	2.30	665.06
05-114	10.02	3.06	665.50	NT	3.56	665.00	10.06	4.15	664.41	10.05	3.01	665.55	10.05	3.75	664.81	10.05	3.40	665.16	10.05	3.70	664.86	10.05	3.57	664.99
04-115	10.30	1.50	665.07	NT	2.50	664.07	10.07	3.94	662.63	10.05	1.95	664.62	10.05	3.21	663.36	10.05	2.25	664.32	10.05	2.40	664.17	10.05	2.41	664.16
03-116	12.55	3.61	664.54	NT	4.22	663.93	12.60	4.98	663.17	12.60	4.13	664.02	12.60	4.55	663.60	12.60	4.14	664.01	12.60	4.20	663.95	12.60	4.21	663.94

Notes:
AMSL = Above Mean Sea Level
AOI = Area of Interest
BGS = Below Ground Surface
ft. = Feet
GW = Groundwater
in. = Inches
NT = Not Taken
TOR = Top of Riser



LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 665 — GROUNDWATER CONTOUR LINE
- 665.07 GROUNDWATER ELEVATION

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
2. THE SITE IS COMPLETELY DEMOLISHED.
3. BENCHMARK "A" ELEVATION = 664.49 (NAVD88) A TOP RAILROAD SPIKE IN NW FACE OF 22 INCH OAK. LOCATED 200'± SOUTH AND 40'± WEST OF THE NE FENCE CORNER AT 37350 ECORSE ROAD.

N E S W

0 200 400

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

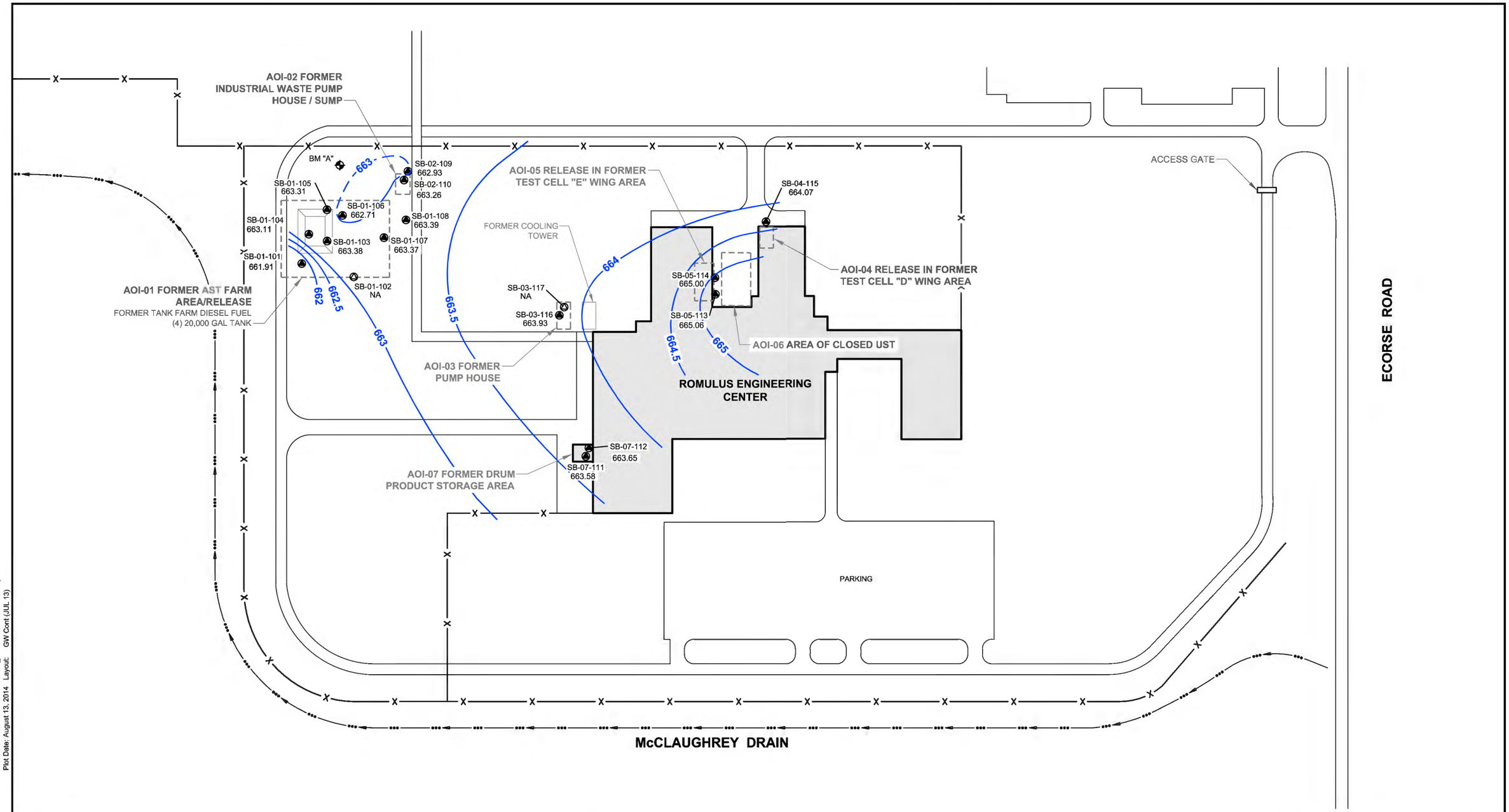
FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS JANUARY 30, 2013

SCALE: AS SHOWN
AUGUST 2014

FIGURE 1

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: August 13, 2014 Layout: GW Cont (JAN 13)



LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 665 — GROUNDWATER CONTOUR LINE
- 665.07 GROUNDWATER ELEVATION

NOTES

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2. THE SITE IS COMPLETELY DEMOLISHED.
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N E S W

0 200 400

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS JULY 25, 2013

SCALE: AS SHOWN
AUGUST 2014

FIGURE 2

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: August 13, 2014 Layout: GW Cont (JUL 13)

AOI-02 FORMER INDUSTRIAL WASTE PUMP HOUSE / SUMP

BM "A"

662.30
SB-02-109

SB-02-110
662.96

SB-01-105
662.99

SB-01-106
663.17

SB-01-108
663.18

SB-01-104
661.99

SB-01-103
662.35

SB-01-107
663.15

SB-01-101
659.71

SB-01-102

660

660.5

661

661.5

662

662.5

663

AOI-05 RELEASE IN FORMER TEST CELL "E" WING AREA

AOI-01 FORMER AST FARM AREA/RELEASE
FORMER TANK FARM DIESEL FUEL
(4) 20,000 GAL TANK

FORMER COOLING TOWER

SB-03-117

SB-03-116
663.17

AOI-03 FORMER PUMP HOUSE

663

SB-04-115
662.63

AOI-04 RELEASE IN FORMER TEST CELL "D" WING AREA

SB-05-114
664.41

SB-05-113
664.45

664

AOI-06 AREA OF CLOSED UST

663.5

ROMULUS ENGINEERING CENTER

SB-07-112
663.00

SB-07-111
662.95

AOI-07 FORMER DRUM PRODUCT STORAGE AREA

PARKING

ACCESS GATE

ECORSE ROAD

McCLAUGHREY DRAIN

LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 662.5 — GROUNDWATER CONTOUR LINE
- 662.95 — GROUNDWATER ELEVATION

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
2. THE SITE IS COMPLETELY DEMOLISHED.
3. BENCHMARK "A" ELEVATION = 664.49 (NAVD88) A TOP RAILROAD SPIKE IN NW FACE OF 22 INCH OAK. LOCATED 200'± SOUTH AND 40'± WEST OF THE NE FENCE CORNER AT 37350 ECORSE ROAD.

N E S W

0 200 400
APPROXIMATE SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS OCTOBER 3, 2013

SCALE: AS SHOWN
AUGUST 2014

FIGURE 3

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: August 13, 2014 Layout: GW Cont (OCT 13)

AOI-02 FORMER INDUSTRIAL WASTE PUMP HOUSE / SUMP

BM "A"

SB-02-109 663.10

SB-02-110 663.29

SB-01-105

663.37

SB-01-106

663.44

SB-01-104 663.46

SB-01-108 663.46

SB-01-107 663.45

SB-01-103

SB-01-101 663.38

SB-01-102

AOI-01 FORMER AST FARM AREA/RELEASE

FORMER TANK FARM DIESEL FUEL (4) 20,000 GAL TANK

663

663.5

664

664.5

AOI-05 RELEASE IN FORMER TEST CELL "E" WING AREA

SB-04-115 664.62

665

665.5

AOI-04 RELEASE IN FORMER TEST CELL "D" WING AREA

FORMER COOLING TOWER

SB-03-117

SB-03-116 664.02

SB-05-114 665.55

SB-05-113 665.33

AOI-06 AREA OF CLOSED UST

AOI-03 FORMER PUMP HOUSE

ROMULUS ENGINEERING CENTER

SB-07-112 663.96

SB-07-111 663.87

AOI-07 FORMER DRUM PRODUCT STORAGE AREA

PARKING

ACCESS GATE

ECORSE ROAD

McCLAUGHREY DRAIN

LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 664 GROUNDWATER CONTOUR LINE
- 663.93 GROUNDWATER ELEVATION

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
2. THE SITE IS COMPLETELY DEMOLISHED.
3. BENCHMARK "A" ELEVATION = 664.49 (NAVD88) A TOP RAILROAD SPIKE IN NW FACE OF 22 INCH OAK. LOCATED 200'± SOUTH AND 40'± WEST OF THE NE FENCE CORNER AT 37350 ECORSE ROAD.

N E S W

0 200 400

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

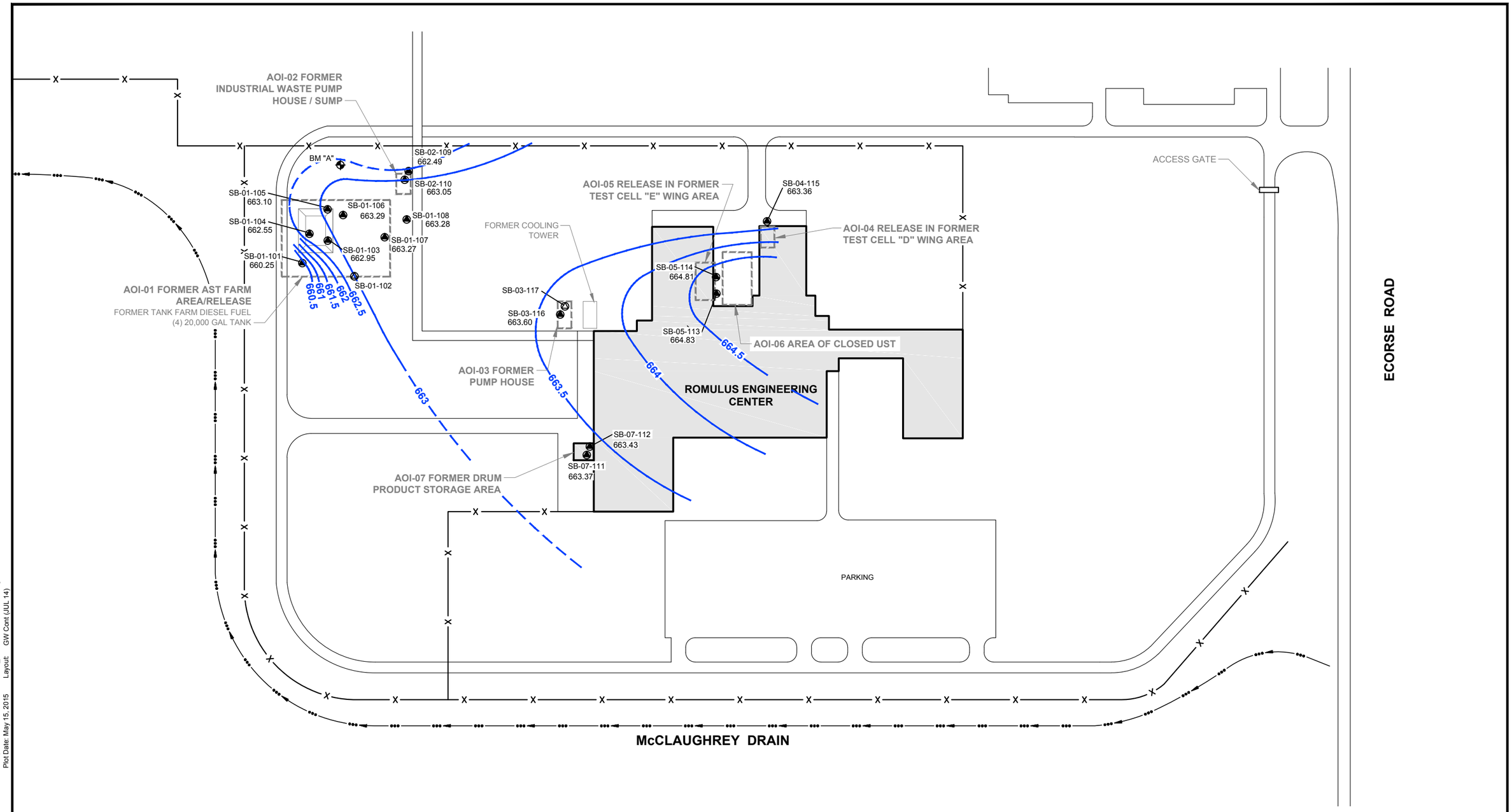
FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS APRIL 15, 2014

SCALE: AS SHOWN
AUGUST 2014

FIGURE 3

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: May 15, 2015 Layout: GW Cont (APR 14)



LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 664 — GROUNDWATER CONTOUR LINE
- 663.93 — GROUNDWATER ELEVATION

NOTES

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N E S W

0 200 400

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

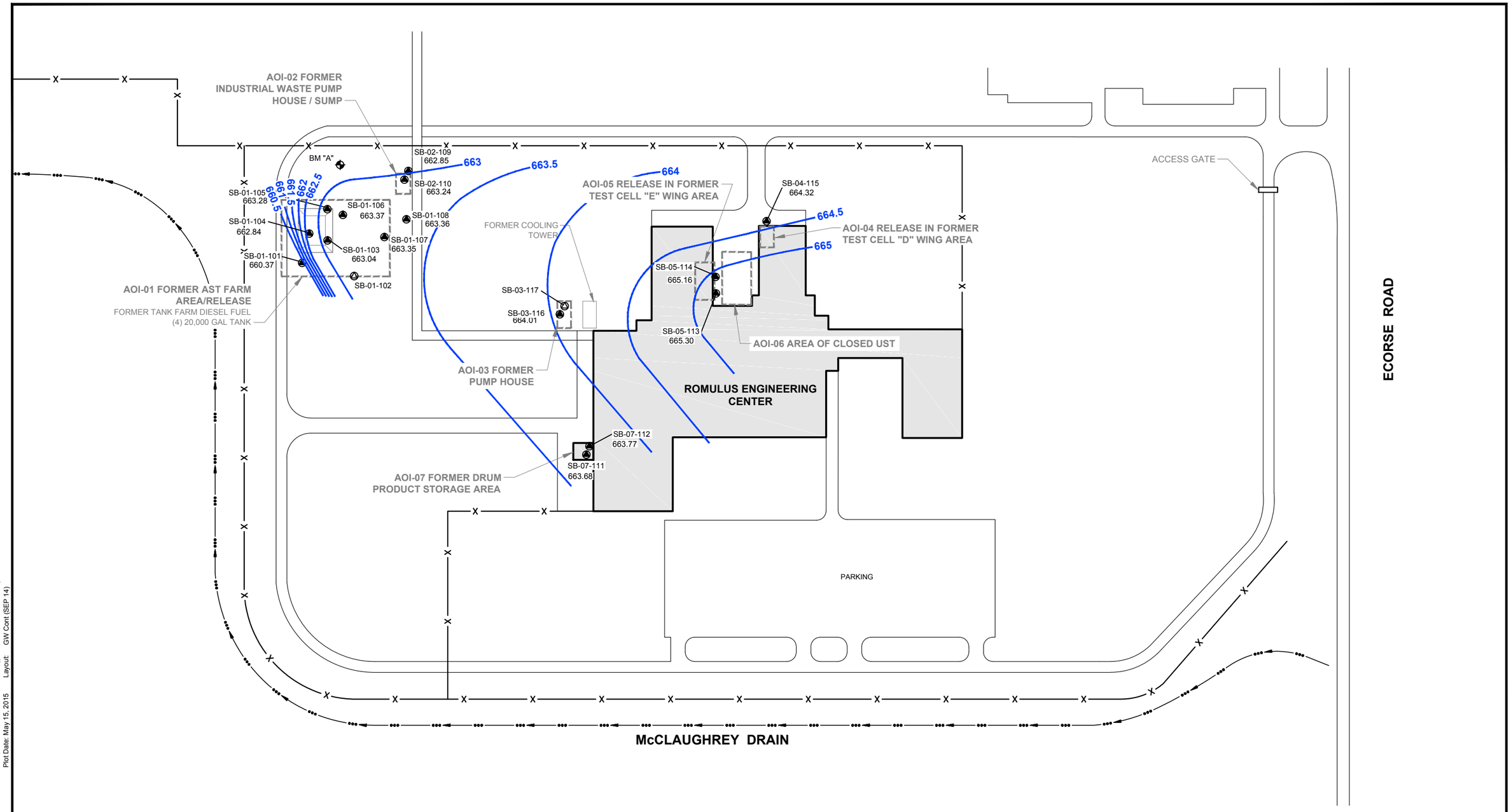
FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS JULY 17, 2014

SCALE: AS SHOWN
AUGUST 2014

FIGURE 2

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: May 15, 2015 Layout: GW Cont (JUL 14)



LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 664 — GROUNDWATER CONTOUR LINE
- 663.93 — GROUNDWATER ELEVATION

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
2. THE SITE IS COMPLETELY DEMOLISHED.
3. BENCHMARK "A" ELEVATION = 664.49 (NAVD88) A TOP RAILROAD SPIKE IN NW FACE OF 22 INCH OAK. LOCATED 200'± SOUTH AND 40'± WEST OF THE NE FENCE CORNER AT 37350 ECORSE ROAD.

N E S W

0 200 400

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECORSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS SEPTEMBER 2, 2014

SCALE: AS SHOWN
SEPTEMBER 2014

FIGURE 1

Drawing Name: G:\37515-Romulus Engineering Center\005-RFI Implementation\CAD\37515-005_08 GW CNTRS 2014.dwg
Operator Name: ROWLAND, QUA
Plot Date: May 15, 2015 Layout: GW Cont (SEP 14)

AOI-02 FORMER INDUSTRIAL WASTE PUMP HOUSE / SUMP

BM "A"

SB-02-109 663.10

SB-02-110 663.30

SB-01-105 663.41

SB-01-106 663.47

SB-01-108 663.58

SB-01-104 663.41

SB-01-107 663.52

SB-01-103 663.48

SB-01-101 663.36

SB-01-102

663.5

AOI-05 RELEASE IN FORMER TEST CELL "E" WING AREA

SB-04-115 664.17

664.0

AOI-04 RELEASE IN FORMER TEST CELL "D" WING AREA

664.5

FORMER COOLING TOWER

SB-05-114 664.86

SB-03-117

SB-03-116 663.95

SB-05-113 664.92

AOI-06 AREA OF CLOSED UST

AOI-01 FORMER AST FARM AREA/RELEASE

FORMER TANK FARM DIESEL FUEL

(4) 20,000 GAL TANK

AOI-03 FORMER PUMP HOUSE

ROMULUS ENGINEERING CENTER

SB-07-112 663.80

SB-07-111 663.72

AOI-07 FORMER DRUM PRODUCT STORAGE AREA

PARKING

ACCESS GATE

ECORSE ROAD

McCLAUGHREY DRAIN

LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 664 — GROUNDWATER CONTOUR LINE
- 663.93 — GROUNDWATER ELEVATION

NOTES

1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY GM POWERTRAIN.
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N

0 200 400

SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECOURSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS APRIL 14, 2015

SCALE: AS SHOWN
APRIL 2015

FIGURE 1

ROWLAND, QUA Printed: 6/1/2015 3:00 PM Layout: GW CONT (APR 15)
G:\37515-ROMULUS ENGINEERING CENTER\005-RFI IMPLEMENTATION\CAD\37515-005_08 GW CNTRS 2014.DWG

AOI-02 FORMER INDUSTRIAL WASTE PUMP HOUSE / SUMP

BM "A"

SB-02-109 662.99

SB-02-110 663.27

663.0

663.0

SB-01-105 663.31

SB-01-106 663.42

SB-01-104 663.40

SB-01-108 663.41

SB-01-107 663.40

SB-01-103 663.69

SB-01-101 661.60

SB-01-102

663.5

AOI-05 RELEASE IN FORMER TEST CELL "E" WING AREA

SB-04-115 664.16

664.0

AOI-04 RELEASE IN FORMER TEST CELL "D" WING AREA

664.5

FORMER COOLING TOWER

SB-05-114 664.99

665.0

SB-03-117

SB-03-116 663.94

SB-05-113 665.06

665.0

AOI-06 AREA OF CLOSED UST

AOI-01 FORMER AST FARM AREA/RELEASE

FORMER TANK FARM DIESEL FUEL

(4) 20,000 GAL TANK

AOI-03 FORMER PUMP HOUSE

ROMULUS ENGINEERING CENTER

664.5

SB-07-112 663.82

SB-07-111 663.73

664.0

AOI-07 FORMER DRUM PRODUCT STORAGE AREA

PARKING

ACCESS GATE

ECORSE ROAD

McCLAUGHREY DRAIN

LEGEND

- FENCE LINE
- McCLAUGHREY DRAIN
- TEMPORARY MONITORING WELL
- SOIL BORING
- BENCHMARK
- 664 — GROUNDWATER CONTOUR LINE
- 663.93 GROUNDWATER ELEVATION

NOTES

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N

0 200 400

SCALE IN FEET

HALEY ALDRICH

FORMER ROMULUS ENGINEERING CENTER
RACER SITE ID 1002
37350 ECOURSE ROAD
ROMULUS, MICHIGAN

SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS JULY 14, 2015

SCALE: AS SHOWN
JULY 2015

FIGURE 1

ROWLAND, QUA Printed: 7/17/2015 2:52 PM Layout: GW CONT (JUL 15)
G:\37515-ROMULUS ENGINEERING CENTER\005-RFI IMPLEMENTATION\CAD\37515-005_08 GW CNTRS 2014.DWG

APPENDIX B

Analytical Data Tables

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)
Location Name		HA-1	HA-1	HA-2	HA-2	HA-3	HA-3	HA-4	HA-4	HA-5	HA-5	HA-6	HA-6
Sample Name		HA-1-081607-0	HA-1-081607-1.5	HA-2-081607-0	HA-2-081607-1.5	HA-3-081607-0	HA-3-081607-1.5	HA-4-081607-0	HA-4-081607-1.5	HA-5-081607-0	HA-5-081607-1.5	HA-6-081607-0	HA-6-081607-1.5
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 2.5 (ft)	1.5 - 2.5 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Inorganic Compounds (mg/kg)													
Arsenic	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Barium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Copper	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Lead	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	SW7471A	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Silver	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Other (%)													
Total Solids	SM2540B	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (mg/kg)													
Aroclor-1016 (PCB-1016)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (mg/kg)													
1-Methylnaphthalene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
2-Methylnaphthalene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
Acenaphthene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
Acenaphthylene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
Anthracene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	**0.053**	0.0075 U	0.025 U	0.0073 U	**0.01**	0.0083 U
Benzo(a)anthracene	SW8270C	**0.04**	0.0081 U	0.024 U	0.0078 U	**0.047**	0.0077 U	**0.11**	0.0075 U	**0.065**	0.0073 U	**0.04**	0.0083 U
Benzo(a)pyrene	SW8270C	**0.05**	0.0081 U	**0.027**	0.0078 U	**0.053**	0.0077 U	**0.1**	0.0075 U	**0.075**	0.0073 U	**0.048**	0.0083 U
Benzo(b)fluoranthene	SW8270C	**0.088**	0.0081 U	**0.044**	0.0078 U	**0.085**	0.0077 U	**0.14**	0.0075 U	**0.13**	0.0073 U	**0.085**	0.0083 U
Benzo(g,h,i)perylene	SW8270C	**0.04**	0.0081 U	0.024 U	0.0078 U	**0.044**	0.0077 U	**0.072**	0.0075 U	**0.072**	0.0073 U	**0.038**	0.0083 U
Benzo(k)fluoranthene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	**0.039**	0.0077 U	**0.061**	0.0075 U	**0.046**	0.0073 U	**0.03**	0.0083 U
Chrysene	SW8270C	**0.061**	0.0081 U	**0.025**	0.0078 U	**0.065**	0.0077 U	**0.11**	0.0075 U	**0.097**	0.0073 U	**0.056**	0.0083 U
Dibenz(a,h)anthracene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	**0.011**	0.0083 U
Fluoranthene	SW8270C	**0.095**	0.0081 U	**0.048**	0.0078 U	**0.11**	0.0077 U	**0.27**	0.0075 U	**0.17**	0.0073 U	**0.11**	0.0083 U
Fluorene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	**0.025**	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
Indeno(1,2,3-cd)pyrene	SW8270C	**0.036**	0.0081 U	0.024 U	0.0078 U	**0.04**	0.0077 U	**0.067**	0.0075 U	**0.055**	0.0073 U	**0.037**	0.0083 U
Naphthalene	SW8270C	0.025 U	0.0081 U	0.024 U	0.0078 U	0.024 U	0.0077 U	0.024 U	0.0075 U	0.025 U	0.0073 U	0.0078 U	0.0083 U
Phenanthrene	SW8270C	**0.038**	0.0081 U	0.024 U	0.0078 U	**0.048**	0.0077 U	**0.19**	0.0075 U	**0.084**	0.0073 U	**0.042**	0.0083 U
Pyrene	SW8270C	**0.083**	0.0081 U	**0.036**	0.0078 U	**0.088**	0.0077 U	**0.21**	0.0075 U	**0.13**	0.0073 U	**0.086**	0.0083 U
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range Organics	SW8015B	**240**	**30**	**140**	12 U	**140**	**21**	**190**	**18**	**290**	**31**	**89**	**22**
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	SW8260B	0.43 U	0.25 U	0.38 U	0.23 U	0.47 U	0.25 U	0.4 U	0.26 U	0.55 U	0.24 U	0.32 U	0.28 U

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)
Location Name		HA-1	HA-1	HA-2	HA-2	HA-3	HA-3	HA-4	HA-4	HA-5	HA-5	HA-6	HA-6
Sample Name		HA-1-081607-0	HA-1-081607-1.5	HA-2-081607-0	HA-2-081607-1.5	HA-3-081607-0	HA-3-081607-1.5	HA-4-081607-0	HA-4-081607-1.5	HA-5-081607-0	HA-5-081607-1.5	HA-6-081607-0	HA-6-081607-1.5
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 2.5 (ft)	1.5 - 2.5 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Volatile Organic Compounds (mg/kg) (con't)													
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	SW8260B	0.43 U	0.25 U	0.38 U	0.23 U	0.47 U	0.25 U	0.4 U	0.26 U	0.55 U	0.24 U	0.32 U	0.28 U
1,3-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	SW8260B	0.086 U	0.049 U	0.076 U	0.046 U	0.094 U	0.051 U	0.08 U	0.052 U	0.069 U	0.047 U	0.065 U	0.056 U
Bromodichloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	SW8260B	0.086 U	0.049 U	0.076 U	0.046 U	0.094 U	0.051 U	0.08 U	0.052 U	0.11 U	0.047 U	0.065 U	0.056 U
Isopropylbenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
m&p-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Tert Butyl Ether	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	SW8260B	0.17 U	0.099 U	0.15 U	0.091 U	0.19 U	0.1 U	0.16 U	0.1 U	0.22 U	0.095 U	0.13 U	0.11 U
trans-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (total)	SW8260B	0.26 U	0.15 U	0.23 U	0.14 U	0.28 U	0.15 U	0.24 U	0.16 U	0.33 U	0.14 U	0.19 U	0.17 U

Notes and Abbreviations:

1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)
Location Name		HA-7	HA-7	HA-8	HA-8	HA-9	HA-9	HA-10	HA-11	HA-11	HA-12	HA-12	HA-13
Sample Name		HA-7-081607-0	HA-7-081607-1.5	HA-8-081607-0	HA-8-081607-1.5	HA-9-081607-0	HA-9-081607-1.5	HA-10-081607-1.5	HA-11-081607-0	HA-11-081607-1.5	HA-12-081607-0	HA-12-081607-1.5	HA-13-081607-0
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Inorganic Compounds (mg/kg)													
Arsenic	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Barium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Copper	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Lead	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	SW7471A	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Silver	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	SW6020	-	-	-	-	-	-	-	-	-	-	-	-
Other (%)													
Total Solids	SM2540B	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (mg/kg)													
Aroclor-1016 (PCB-1016)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	SW8082	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatile Organic Compounds (mg/kg)													
1-Methylnaphthalene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	**0.011**	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	0.0082 U
2-Methylnaphthalene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	**0.01**	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	**0.011**
Acenaphthene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	0.009 U	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	0.0082 U
Acenaphthylene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	0.009 U	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	0.0082 U
Anthracene	SW8270C	**0.009**	0.0077 U	0.0091 U	0.0079 U	**0.018**	0.0075 U	**0.015**	**0.012**	0.0073 U	**0.015**	0.0078 U	**0.009**
Benzo(a)anthracene	SW8270C	**0.039**	0.0077 U	**0.028**	0.0079 U	**0.05**	**0.013**	**0.034**	**0.056**	0.0073 U	**0.052**	0.0078 U	**0.036**
Benzo(a)pyrene	SW8270C	**0.046**	0.0077 U	**0.034**	0.0079 U	**0.057**	**0.012**	**0.041**	**0.053**	0.0073 U	**0.063**	0.0078 U	**0.048**
Benzo(b)fluoranthene	SW8270C	**0.078**	0.0077 U	**0.059**	0.0079 U	**0.094**	**0.014**	**0.051**	**0.094**	0.0073 U	**0.092**	0.0078 U	**0.079**
Benzo(g,h,i)perylene	SW8270C	**0.036**	0.0077 U	**0.03**	0.0079 U	**0.044**	0.0075 U	**0.033**	**0.05**	0.0073 U	**0.051**	0.0078 U	**0.043**
Benzo(k)fluoranthene	SW8270C	**0.026**	0.0077 U	**0.021**	0.0079 U	**0.034**	**0.008**	**0.022**	**0.036**	0.0073 U	**0.021**	0.0078 U	**0.031**
Chrysene	SW8270C	**0.052**	0.0077 U	**0.04**	0.0079 U	**0.075**	**0.016**	**0.049**	**0.078**	0.0073 U	**0.072**	0.0078 U	**0.064**
Dibenz(a,h)anthracene	SW8270C	**0.01**	0.0077 U	**0.018**	0.0079 U	0.009 U	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	0.0082 U
Fluoranthene	SW8270C	**0.095**	0.0077 U	**0.072**	0.0079 U	**0.11**	**0.028**	**0.095**	**0.099**	0.0073 U	**0.12**	0.0078 U	**0.086**
Fluorene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	0.009 U	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	0.0082 U
Indeno(1,2,3-cd)pyrene	SW8270C	**0.033**	0.0077 U	**0.03**	0.0079 U	**0.036**	0.0075 U	**0.024**	**0.046**	0.0073 U	**0.041**	0.0078 U	**0.032**
Naphthalene	SW8270C	0.0081 U	0.0077 U	0.0091 U	0.0079 U	**0.01**	0.0075 U	0.0075 U	0.0078 U	0.0073 U	0.0088 U	0.0078 U	**0.011**
Phenanthrene	SW8270C	**0.038**	0.0077 U	**0.029**	0.0079 U	**0.056**	**0.019**	**0.07**	**0.047**	0.0073 U	**0.051**	0.0078 U	**0.036**
Pyrene	SW8270C	**0.073**	0.0077 U	**0.06**	0.0079 U	**0.085**	**0.023**	**0.088**	**0.087**	0.0073 U	**0.1**	0.0078 U	**0.072**
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range Organics	SW8015B	**110**	**32**	**120**	**23**	**300**	**20**	**120**	**130**	**16**	**120**	**21**	**170**
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	SW8260B	0.33 U	0.23 U	0.39 U	0.22 U	0.44 U	0.24 U	-	0.27 U	0.24 U	0.31 U	0.26 U	0.29 U

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)
Location Name		HA-7	HA-7	HA-8	HA-8	HA-9	HA-9	HA-10	HA-11	HA-11	HA-12	HA-12	HA-13
Sample Name		HA-7-081607-0	HA-7-081607-1.5	HA-8-081607-0	HA-8-081607-1.5	HA-9-081607-0	HA-9-081607-1.5	HA-10-081607-1.5	HA-11-081607-0	HA-11-081607-1.5	HA-12-081607-0	HA-12-081607-1.5	HA-13-081607-0
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	0 - 0.25 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Volatile Organic Compounds (mg/kg) (con't)													
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	SW8260B	0.33 U	0.23 U	0.39 U	0.22 U	0.44 U	0.24 U	-	0.27 U	0.24 U	0.31 U	0.26 U	0.29 U
1,3-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl Ethyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	SW8260B	0.065 U	0.047 U	0.078 U	0.045 U	0.089 U	0.048 U	-	0.055 U	0.049 U	0.061 U	0.052 U	0.058 U
Bromodichloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl Bromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl Chloride)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	SW8260B	0.065 U	0.047 U	0.078 U	0.045 U	0.089 U	0.048 U	-	0.055 U	0.049 U	0.061 U	0.052 U	0.058 U
Isopropylbenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
m&p-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Tert Butyl Ether	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	SW8260B	0.13 U	0.094 U	0.16 U	0.089 U	0.18 U	0.096 U	-	0.11 U	0.098 U	0.12 U	0.1 U	0.12 U
trans-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (total)	SW8260B	0.2 U	0.14 U	0.23 U	0.13 U	0.27 U	0.14 U	-	0.16 U	0.15 U	0.18 U	0.15 U	0.18 U

Notes and Abbreviations:
1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01
Location Name		HA-13	HA-14	HA-14	HA-15	HA-16	HA-17	HA-18	SB-1	SB-2	SB-3	SB-4	SB-01-101
Sample Name		HA-13-081607-1.5	HA-14-081607-0	HA-14-081607-1.5	HA-15-081607-1.5	HA-16-081607-1.5	HA-17-081607-1.5	HA-18-081607-1.5	SB-1-081607-3	SB-2-081607-3	SB-3-081607-3	SB-4-081607-1	01(12-17-2012)(3.5
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	12/17/2012
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	3 - 5 (ft)	3 - 5 (ft)	3 - 5 (ft)	1 - 3 (ft)	3.5 - 4 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Inorganic Compounds (mg/kg)													
Arsenic	SW6020	-	-	-	-	-	-	-	-	-	-	-	**5.69**
Barium	SW6020	-	-	-	-	-	-	-	-	-	-	-	**35.4**
Cadmium	SW6020	-	-	-	-	-	-	-	-	-	-	-	**0.31**
Chromium	SW6020	-	-	-	-	-	-	-	-	-	-	-	**2.7**
Copper	SW6020	-	-	-	-	-	-	-	-	-	-	-	**18.9**
Lead	SW6020	-	-	-	-	-	-	-	-	-	-	-	**7.78**
Mercury	SW7471A	-	-	-	-	-	-	-	-	-	-	-	0.05 U
Selenium	SW6020	-	-	-	-	-	-	-	-	-	-	-	0.4 U
Silver	SW6020	-	-	-	-	-	-	-	-	-	-	-	0.1 U
Zinc	SW6020	-	-	-	-	-	-	-	-	-	-	-	**30**
Other (%)													
Total Solids	SM2540B	-	-	-	-	-	-	-	-	-	-	-	**89**
PCBs (mg/kg)													
Aroclor-1016 (PCB-1016)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1221 (PCB-1221)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1232 (PCB-1232)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1242 (PCB-1242)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1248 (PCB-1248)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1254 (PCB-1254)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Aroclor-1260 (PCB-1260)	SW8082	-	-	-	-	-	-	-	-	-	-	-	0.33 U
Semi-Volatile Organic Compounds (mg/kg)													
1-Methylnaphthalene	SW8270C	0.0073 U	0.0081 U	0.0077 U	**0.01**	0.0085 U	**0.0083**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
2-Methylnaphthalene	SW8270C	0.0073 U	0.0081 U	0.0077 U	**0.0085**	0.0085 U	**0.0084**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Acenaphthene	SW8270C	0.0073 U	0.0081 U	0.0077 U	**0.017**	0.0085 U	**0.013**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Acenaphthylene	SW8270C	0.0073 U	0.0081 U	0.0077 U	**0.019**	**0.015**	0.0075 U	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Anthracene	SW8270C	0.0073 U	**0.011**	0.0077 U	**0.048**	**0.017**	**0.06**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Benzo(a)anthracene	SW8270C	0.0073 U	**0.049**	0.0077 U	**0.19**	**0.079**	**0.16**	0.0073 U	0.0077 U	**0.027**	0.0082 U	0.0084 U	0.3 U
Benzo(a)pyrene	SW8270C	0.0073 U	**0.061**	0.0077 U	**0.18**	**0.1**	**0.14**	0.0073 U	0.0077 U	**0.023**	0.0082 U	0.0084 U	0.3 U
Benzo(b)fluoranthene	SW8270C	0.0073 U	**0.096**	0.0077 U	**0.24**	**0.15**	**0.14**	0.0073 U	0.0077 U	**0.041**	0.0082 U	0.0084 U	0.3 U
Benzo(g,h,i)perylene	SW8270C	0.0073 U	**0.047**	0.0077 U	**0.12**	**0.08**	**0.076**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Benzo(k)fluoranthene	SW8270C	0.0073 U	**0.047**	0.0077 U	**0.12**	**0.066**	**0.088**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Chrysene	SW8270C	0.0073 U	**0.076**	0.0077 U	**0.22**	**0.11**	**0.14**	0.0073 U	0.0077 U	**0.028**	0.0082 U	0.0084 U	0.3 U
Dibenz(a,h)anthracene	SW8270C	0.0073 U	0.0081 U	0.0077 U	**0.03**	0.0085 U	**0.018**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Fluoranthene	SW8270C	0.0073 U	**0.12**	0.0077 U	**0.44**	**0.13**	**0.32**	0.0073 U	0.0077 U	**0.05**	0.0082 U	**0.012**	0.3 U
Fluorene	SW8270C	0.0073 U	**0.01**	0.0077 U	**0.031**	0.0085 U	**0.033**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Indeno(1,2,3-cd)pyrene	SW8270C	0.0073 U	**0.04**	0.0077 U	**0.1**	**0.067**	**0.064**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Naphthalene	SW8270C	0.0073 U	0.0081 U	0.0077 U	0.0074 U	0.0085 U	**0.0081**	0.0073 U	0.0077 U	0.022 U	0.0082 U	0.0084 U	0.3 U
Phenanthrene	SW8270C	0.0073 U	**0.049**	0.0077 U	**0.22**	**0.037**	**0.21**	0.0073 U	0.0077 U	**0.025**	0.0082 U	**0.0088**	0.3 U
Pyrene	SW8270C	0.0073 U	**0.093**	0.0077 U	**0.36**	**0.12**	**0.25**	0.0073 U	0.0077 U	**0.054**	0.0082 U	**0.0095**	0.3 U
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range Organics	SW8015B	**30**	**140**	12 U	**67**	**67**	**33**	**21**	**34**	**87**	**40**	**34**	-
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,1,2,2-Tetrachloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,1,2-Trichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,1-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,1-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,2,4-Trichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.1 U
1,2,4-Trimethylbenzene	SW8260B	0.23 U	0.32 U	0.21 U	0.22 U	-	-	-	0.22 U	0.37 U	0.24 U	0.23 U	-

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01 (Legacy)	AOI-01
Location Name		HA-13	HA-14	HA-14	HA-15	HA-16	HA-17	HA-18	SB-1	SB-2	SB-3	SB-4	SB-01-101
Sample Name		HA-13-081607-1.5	HA-14-081607-0	HA-14-081607-1.5	HA-15-081607-1.5	HA-16-081607-1.5	HA-17-081607-1.5	HA-18-081607-1.5	SB-1-081607-3	SB-2-081607-3	SB-3-081607-3	SB-4-081607-1	01(12-17-2012)(3.5
Sample Date		8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	8/16/2007	12/17/2012
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	1.5 - 2.5 (ft)	0 - 0.25 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	1.5 - 2.5 (ft)	3 - 5 (ft)	3 - 5 (ft)	3 - 5 (ft)	1 - 3 (ft)	3.5 - 4 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Volatile Organic Compounds (mg/kg) (con't)													
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,2-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,2-Dichloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,2-Dichloropropane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,3,5-Trimethylbenzene	SW8260B	0.23 U	0.32 U	0.21 U	0.22 U	-	-	-	0.22 U	0.37 U	0.24 U	0.23 U	-
1,3-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
1,4-Dichlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
2-Butanone (Methyl Ethyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.94 U
2-Hexanone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	3 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	3 U
Acetone	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.94 U
Benzene	SW8260B	0.047 U	0.064 U	0.042 U	0.045 U	-	-	-	0.043 U	0.075 U	0.049 U	0.047 U	0.06 U
Bromodichloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Bromoform	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Bromomethane (Methyl Bromide)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
Carbon disulfide	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
Carbon tetrachloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Chlorobenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Chloroethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
Chloroform (Trichloromethane)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Chloromethane (Methyl Chloride)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
cis-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
cis-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Dibromochloromethane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Dichlorodifluoromethane (CFC-12)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Ethylbenzene	SW8260B	0.047 U	0.064 U	0.042 U	0.045 U	-	-	-	0.043 U	0.075 U	0.049 U	0.047 U	0.06 U
Isopropylbenzene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
m&p-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.1 U
Methyl acetate	SW8260B	-	-	-	-	-	-	-	-	-	-	-	3 U
Methyl cyclohexane	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Methyl Tert Butyl Ether	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
Methylene chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.3 U
o-Xylene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Styrene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Tetrachloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Toluene	SW8260B	0.093 U	0.13 U	0.084 U	0.089 U	-	-	-	0.087 U	0.15 U	0.098 U	0.093 U	0.06 U
trans-1,2-Dichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
trans-1,3-Dichloropropene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Trichloroethene	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.06 U
Trichlorofluoromethane (CFC-11)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.1 U
Trifluorotrichloroethane (Freon 113)	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.1 U
Vinyl chloride	SW8260B	-	-	-	-	-	-	-	-	-	-	-	0.1 U
Xylene (total)	SW8260B	0.14 U	0.19 U	0.13 U	0.13 U	-	-	-	0.13 U	0.22 U	0.15 U	0.14 U	-

Notes and Abbreviations:

1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-02	AOI-02	AOI-02
Location Name		SB-01-102	SB-01-103	SB-01-104	SB-01-105	SB-01-105	SB-01-107	SB-01-108	SB-02-109	SB-02-110	SB-02-110
Sample Name		02(12-20-2012)(3.5	03(12-17-2012)(3.5	04(12-17-2012)(3.0	05(12-18-2012)(3.0-	5(12-18-2012)(6.25	07(12-18-2012)(2.0	08(12-18-2012)(0.0	09(12-18-2012)(1.5	UP-01(12-18-2012	10(12-18-2012)(2.0-2.5)
Sample Date		12/20/2012	12/17/2012	12/17/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Field Duplicate	Normal
Sample Depth (bgs)	Analytical	3.5 - 4 (ft)	3.5 - 4 (ft)	3 - 3.5 (ft)	3 - 3.25 (ft)	6.25 - 7 (ft)	2 - 2.5 (ft)	0 - 1.5 (ft)	1.5 - 2 (ft)	2 - 2.5 (ft)	2 - 2.5 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Inorganic Compounds (mg/kg)											
Arsenic	SW6020	**0.57**	**1.86**	**1.64**	**1.98**	**3.11**	**0.21**	**2.31**	**0.43**	**2.41 J**	**1.3 J**
Barium	SW6020	**5.31**	**27.1**	**20**	**34.2**	**56.6**	**5.98**	**46.2**	**3.41**	**24.3**	**18.6**
Cadmium	SW6020	0.2 U	**0.22**	0.2 U	**0.28**	**2.18**	0.2 U	**0.48**	0.2 U	**0.32**	**0.26**
Chromium	SW6020	**0.78**	**1.46**	**6.59**	**1.96**	**10**	**0.71**	**3.58**	**0.74**	**2.7**	**2.76**
Copper	SW6020	**3.01**	**7.21**	**8.32**	**18.2**	**39.9**	**0.77**	**13.6**	**3.35**	**10.6**	**7.73**
Lead	SW6020	**2.27**	**4.77**	**19.1**	**7.26**	**11**	**1.19**	**13.3**	**1.9**	**6.77**	**5.57**
Mercury	SW7471A	0.05 U	0.05 U	0.05 U	0.05 U	**0.079**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Selenium	SW6020	0.4 U	0.4 U	0.4 U	0.4 U	**2.93**	0.4 U	**0.61**	0.4 U	0.4 U	0.4 U
Silver	SW6020	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Zinc	SW6020	**4.45**	**17.3**	**19.1**	**24.3**	**42.5**	**2.13**	**21.2**	**6.73**	**18.8**	**15**
Other (%)											
Total Solids	SM2540B	**97**	**88**	**87**	**86**	**64**	**84**	**81**	**91**	**84**	**89**
PCBs (mg/kg)											
Aroclor-1016 (PCB-1016)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1221 (PCB-1221)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1232 (PCB-1232)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1242 (PCB-1242)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1248 (PCB-1248)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1254 (PCB-1254)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Aroclor-1260 (PCB-1260)	SW8082	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Semi-Volatile Organic Compounds (mg/kg)											
1-Methylnaphthalene	SW8270C	0.3 U	0.3 U	**0.8**	0.3 U	**3.6**	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methylnaphthalene	SW8270C	0.3 U	0.3 U	**1.5**	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Acenaphthene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Acenaphthylene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Anthracene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo(a)anthracene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo(a)pyrene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo(b)fluoranthene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo(g,h,i)perylene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo(k)fluoranthene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chrysene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dibenz(a,h)anthracene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Fluoranthene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Fluorene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	**1**	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Indeno(1,2,3-cd)pyrene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Naphthalene	SW8270C	0.3 U	0.3 U	**0.8**	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Phenanthrene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pyrene	SW8270C	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range Organics	SW8015B	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,1,2,2-Tetrachloroethane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,1,2-Trichloroethane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,1-Dichloroethane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,1-Dichloroethene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,2,4-Trichlorobenzene	SW8260B	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2,4-Trimethylbenzene	SW8260B	-	-	-	-	-	-	-	-	-	-

APPENDIX B-1
SUMMARY OF SOIL ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

Report Order		AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-02	AOI-02	AOI-02
Location Name		SB-01-102	SB-01-103	SB-01-104	SB-01-105	SB-01-105	SB-01-107	SB-01-108	SB-02-109	SB-02-110	SB-02-110
Sample Name		02(12-20-2012)(3.5	03(12-17-2012)(3.5	04(12-17-2012)(3.0	05(12-18-2012)(3.0-3	05(12-18-2012)(6.25	07(12-18-2012)(2.0	08(12-18-2012)(0.0	09(12-18-2012)(1.5	UP-01(12-18-2012	10(12-18-2012)(2.0-2.5)
Sample Date		12/20/2012	12/17/2012	12/17/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Field Duplicate	Normal
Sample Depth (bgs)	Analytical	3.5 - 4 (ft)	3.5 - 4 (ft)	3 - 3.5 (ft)	3 - 3.25 (ft)	6.25 - 7 (ft)	2 - 2.5 (ft)	0 - 1.5 (ft)	1.5 - 2 (ft)	2 - 2.5 (ft)	2 - 2.5 (ft)
Sample Matrix	Method	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Volatile Organic Compounds (mg/kg) (con't)											
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,2-Dichlorobenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,2-Dichloroethane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,2-Dichloropropane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,3,5-Trimethylbenzene	SW8260B	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
1,4-Dichlorobenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
2-Butanone (Methyl Ethyl Ketone)	SW8260B	0.79 UJ	0.97 U	0.98 U	1 U	1.6 U	1 U	1.1 U	0.91 U	1 UJ	0.92 UJ
2-Hexanone	SW8260B	3 U	3 U	3 UJ	3 U	5 UJ	3 U	4 U	3 UJ	3 U	3 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	3 U	3 U	3 U	3 U	5 U	3 U	4 U	3 U	3 U	3 U
Acetone	SW8260B	0.79 UJ	0.97 U	0.98 UJ	1 U	1.6 UJ	1 U	1.1 U	0.91 UJ	1 UJ	0.92 UJ
Benzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Bromodichloromethane	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
Bromoform	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
Bromomethane (Methyl Bromide)	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
Carbon disulfide	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Chlorobenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Chloroethane	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
Chloroform (Trichloromethane)	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Chloromethane (Methyl Chloride)	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
cis-1,2-Dichloroethene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
cis-1,3-Dichloropropene	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
Cyclohexane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Dibromochloromethane	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
Dichlorodifluoromethane (CFC-12)	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Ethylbenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Isopropylbenzene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
m&p-Xylene	SW8260B	0.1 U	0.1 U	**0.2**	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl acetate	SW8260B	3 U	3 U	3 U	3 U	5 U	3 U	4 U	3 U	3 U	3 U
Methyl cyclohexane	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Methyl Tert Butyl Ether	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
Methylene chloride	SW8260B	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
o-Xylene	SW8260B	0.05 U	0.06 U	**0.23**	0.07 U	0.1 U	0.07 U	0.07 U	**0.13**	0.07 U	0.06 U
Styrene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Tetrachloroethene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Toluene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
trans-1,2-Dichloroethene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
trans-1,3-Dichloropropene	SW8260B	0.05 UJ	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 UJ	0.06 UJ
Trichloroethene	SW8260B	0.05 U	0.06 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.06 U	0.07 U	0.06 U
Trichlorofluoromethane (CFC-11)	SW8260B	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Trifluorotrichloroethane (Freon 113)	SW8260B	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vinyl chloride	SW8260B	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Xylene (total)	SW8260B	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations:

1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX B-2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

AOI		AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-02	AOI-02
Location Name		TW-01-101	TW-01-104	TW-01-105	TW-01-106	TW-01-107	TW-01-108	TW-02-109	TW-02-110
Sample Name		TW101(01-30-2013)(1150)	TW104(01-30-2013)(1120)	TW105(01-30-2013)(1335)	TW106(01-31-2013)(1415)	TW107(02-01-2013)(1115)	TW108(02-01-2013)(1230)	TW109(01-31-2013)(1220)	TW110(01-31-2013)(1355)
Sample Date		1/30/2013	1/30/2013	1/30/2013	1/31/2013	2/1/2013	2/1/2013	1/31/2013	1/31/2013
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	3 - 8 (ft)	9 - 14 (ft)	5 -10 (ft)	3 -13 (ft)	2 - 7 (ft)	2 - 7 (ft)	3 -13 (ft)	4 - 9 (ft)
Sample Matrix	Method	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Inorganic Compounds (mg/L)									
Arsenic, Dissolved	E200.8	0.002 U	0.002 U	**0.003**	**0.003**	**0.004 J**	**0.002**	0.002 U	**0.002 J**
Arsenic, Total	E200.8	0.002 U	0.002 U	**0.01**	**0.01**	**0.003 J**	**0.004**	0.002 U	**0.01 J**
Barium, Dissolved	E200.8	**0.048**	**0.087**	**0.092**	**0.216**	**0.074**	**0.051**	**0.084**	**0.21**
Barium, Total	E200.8	**0.056**	**0.099**	**0.121**	**0.276**	**0.075**	**0.054**	**0.106**	**0.377**
Cadmium, Dissolved	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chromium, Dissolved	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium, Total	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Copper, Dissolved	E200.8	0.004 U	0.004 U	0.004 U	0.004 U	**0.017 J**	**0.004**	**0.004 J**	0.004 U
Copper, Total	E200.8	0.004 U	0.004 U	0.004 U	0.004 U	**0.017 J**	**0.004**	**0.005 J**	0.004 U
Lead, Dissolved	E200.8	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead, Total	E200.8	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Mercury, Dissolved	E245.1	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury, Total	E245.1	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Selenium, Dissolved	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	**0.011 J**	0.005 U	0.005 U	0.005 U
Selenium, Total	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	**0.014 J**	0.005 U	0.005 U	0.005 U
Silver, Dissolved	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Silver, Total	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Zinc, Dissolved	E200.8	**0.038**	**0.016**	**0.051**	**0.029**	**0.037 J**	**0.029**	**0.016 J**	**0.024 J**
Zinc, Total	E200.8	**0.006**	0.005 U	0.005 U	0.005 U	**0.018 J**	**0.007**	0.005 U	0.005 U
Semi-Volatile Organic Compounds (mg/L)									
1-Methylnaphthalene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2-Methylnaphthalene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ
Acenaphthene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Acenaphthylene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Anthracene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzo(a)anthracene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Benzo(a)pyrene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Benzo(b)fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Benzo(g,h,i)perylene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Benzo(k)fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Chrysene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Dibenz(a,h)anthracene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U
Fluorene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Indeno(1,2,3-cd)pyrene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Naphthalene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Phenanthrene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Pyrene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Volatile Organic Compounds (mg/L)									
1,1,1-Trichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

APPENDIX B-2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

AOI		AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-01	AOI-02	AOI-02
Location Name		TW-01-101	TW-01-104	TW-01-105	TW-01-106	TW-01-107	TW-01-108	TW-02-109	TW-02-110
Sample Name		TW101(01-30-2013)(1150)	TW104(01-30-2013)(1120)	TW105(01-30-2013)(1335)	TW106(01-31-2013)(1415)	TW107(02-01-2013)(1115)	TW108(02-01-2013)(1230)	TW109(01-31-2013)(1220)	TW110(01-31-2013)(1355)
Sample Date		1/30/2013	1/30/2013	1/30/2013	1/31/2013	2/1/2013	2/1/2013	1/31/2013	1/31/2013
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample Depth (bgs)	Analytical	3 - 8 (ft)	9 - 14 (ft)	5 -10 (ft)	3 -13 (ft)	2 - 7 (ft)	2 - 7 (ft)	3 -13 (ft)	4 - 9 (ft)
Sample Matrix	Method	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Volatile Organic Compounds (mg/L) (con't)									
1,4-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	SW8260B	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2-Hexanone	SW8260B	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	SW8260B	0.02 U	0.02 U	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ
Benzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	SW8260B	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 UJ	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon disulfide	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylene	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methyl acetate	SW8260B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	SW8260B	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Methylene chloride	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (Freon 113)	SW8260B	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vinyl chloride	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Notes and Abbreviations:

1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX B-2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

AOI		AOI-03	AOI-04	AOI-05	AOI-05	AOI-07	AOI-07	AOI-07
Location Name		TW-03-116	TW-04-115	TW-05-114	TW-05-114	TW-07-111	TW-07-111	TW-07-112
Sample Name		TW116(02-01-2013)(1405)	TW115(01-31-2013)(1720)	TW114(01-31-2013)(1635)	DUP-02(01-31-2013)	TW111(01-30-2013)(1440)	DUP-01(01-30-2013)	TW112(01-30-2013)(1455)
Sample Date		2/1/2013	1/31/2013	1/31/2013	1/31/2013	1/30/2013	1/30/2013	1/30/2013
Sample Type		Normal	Normal	Normal	Field Duplicate	Normal	Field Duplicate	Normal
Sample Depth (bgs)	Analytical	5 -10 (ft)	4 - 9 (ft)	2 -7 (ft)	2 -7 (ft)	4 - 9 (ft)	4 - 9 (ft)	3.5 - 8.5 (ft)
Sample Matrix	Method	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Inorganic Compounds (mg/L)								
Arsenic, Dissolved	E200.8	**0.005 J**	**0.003**	**0.003 J**	**0.003 J**	**0.01**	**0.011**	0.002 U
Arsenic, Total	E200.8	**0.004 J**	**0.003**	**0.004 J**	**0.004 J**	**0.011**	**0.011**	**0.013**
Barium, Dissolved	E200.8	**0.032**	**0.076**	**0.051**	**0.062**	**0.048**	**0.049**	**0.1**
Barium, Total	E200.8	**0.034**	**0.08**	**0.089**	**0.094**	**0.06**	**0.046**	**0.123**
Cadmium, Dissolved	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chromium, Dissolved	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium, Total	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Copper, Dissolved	E200.8	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Copper, Total	E200.8	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Lead, Dissolved	E200.8	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead, Total	E200.8	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Mercury, Dissolved	E245.1	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury, Total	E245.1	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Selenium, Dissolved	E200.8	**0.013 J**	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Selenium, Total	E200.8	**0.013 J**	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver, Dissolved	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Silver, Total	E200.8	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Zinc, Dissolved	E200.8	**0.023 J**	**0.037**	**0.012 J**	**0.03 J**	**0.065**	**0.064**	**0.033**
Zinc, Total	E200.8	0.005 U	0.005 U	0.005 U	0.005 U	**0.006**	0.005 U	0.005 U
Semi-Volatile Organic Compounds (mg/L)								
1-Methylnaphthalene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2-Methylnaphthalene	SW8270C	0.005 UJ	0.005 U	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.005 U
Acenaphthene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Acenaphthylene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Anthracene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzo(a)anthracene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzo(a)pyrene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzo(b)fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzo(g,h,i)perylene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzo(k)fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chrysene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibenz(a,h)anthracene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Fluoranthene	SW8270C	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Fluorene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Indeno(1,2,3-cd)pyrene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Naphthalene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Phenanthrene	SW8270C	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Pyrene	SW8270C	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Volatile Organic Compounds (mg/L)								
1,1,1-Trichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

APPENDIX B-2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
RACER FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MI

AOI		AOI-03	AOI-04	AOI-05	AOI-05	AOI-07	AOI-07	AOI-07
Location Name		TW-03-116	TW-04-115	TW-05-114	TW-05-114	TW-07-111	TW-07-111	TW-07-112
Sample Name		TW116(02-01-2013)(1405)	TW115(01-31-2013)(1720)	TW114(01-31-2013)(1635)	DUP-02(01-31-2013)	TW111(01-30-2013)(1440)	DUP-01(01-30-2013)	TW112(01-30-2013)(1455)
Sample Date		2/1/2013	1/31/2013	1/31/2013	1/31/2013	1/30/2013	1/30/2013	1/30/2013
Sample Type		Normal	Normal	Normal	Field Duplicate	Normal	Field Duplicate	Normal
Sample Depth (bgs)	Analytical	5 -10 (ft)	4 - 9 (ft)	2 -7 (ft)	2 -7 (ft)	4 - 9 (ft)	4 - 9 (ft)	3.5 - 8.5 (ft)
Sample Matrix	Method	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Volatile Organic Compounds (mg/L) (con't)								
1,4-Dichlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	SW8260B	0.02 U	0.02 U	0.14 U	0.16 U	0.02 U	0.02 U	0.02 U
2-Hexanone	SW8260B	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	SW8260B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	SW8260B	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 U
Benzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	SW8260B	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon disulfide	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	SW8260B	0.001 U	0.001 U	**0.002**	**0.002**	0.001 U	0.001 U	0.001 U
Ethylbenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylene	SW8260B	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methyl acetate	SW8260B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	SW8260B	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Methylene chloride	SW8260B	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	SW8260B	**0.006**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (Freon 113)	SW8260B	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vinyl chloride	SW8260B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Notes and Abbreviations:

1. U - Not detected, result below shown reporting limit.
   UJ - Not detected, reporting limit estimated
   J - Estimated result
2. Result in **bold** were detected.

APPENDIX C

Declaration of Restrictive Covenant

2015413889 L: 52557 P: 1028 NOT
10/30/2015 08:01:08 AM Total Pages: 13
Bernard J. Youngblood, Register of Deeds - Wayne County, MI
ELECTRONICALLY RECORDED

**AMENDED AND RESTATED
DECLARATION OF RESTRICTIVE COVENANT**

MDEQ Reference Number: RC-OWMRP-111-15-005
Facility MID Number: MID 000 809 905
MDEQ Approval Date: October 12, 2015

This Amended and Restated Declaration of Restrictive Covenant (Amended Restrictive Covenant) is made to protect public health, safety, or welfare or the environment pursuant to the provisions of Part 111, Hazardous Waste Management, Michigan Compiled Laws ("MCL") 324.11101, *et seq.* ("Part 111") and the applicable Sections of Part 201, Environmental Remediation, MCL 324.20101, *et seq.* ("Part 201") of the Natural Resources and Environmental Protection Act ("NREPA"), 1994 PA 451, as amended, MCL324.101, *et seq.*, and the administrative rules promulgated pursuant to those Parts, MAC R 299.9001 et seq. and MAC R 299.5101 et seq., and the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976 ("RCRA"), as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. §§ 6901 *et seq.*

This Amended Restrictive Covenant is made on October 28 2015, by RACER Properties LLC, the address of which is 500 Woodward Avenue, Suite 2650, Detroit, MI 48226, the Grantor and an entity wholly owned by the Revitalizing Auto Communities Environmental Response Trust ("Trust") and the current fee title holder of the Property, such Property legally described in Exhibit 1 and depicted in Exhibit 2, the location of which is located at 37350 Ecorse Road in the City of Romulus, County of Wayne, State of Michigan ("Property" or "Site"), for the benefit of the Grantee, State of Michigan, Department of Environment Quality ("MDEQ"), whose address is 525 West Allegan Street, P.O. Box 30473, Lansing, MI 48909-7973.

The recording of this Amended Restrictive Covenant amends and restates in its entirety the Declaration of Restrictive Covenant recorded with the Wayne County Register of Deeds on November 24, 2014, having document number 2014454672, and recorded at Liber 51882, Page 1137 (the 2014 Restrictive Covenant"). To the extent this Amended Restrictive Covenant conflicts with the 2014 Restrictive Covenant, the terms of this Amended Restrictive Covenant shall govern and control.

This Amended Restrictive Covenant has been made to prohibit or restrict activities that could result in unacceptable exposure to environmental contamination present at the Property. Recording of this Amended Restrictive Covenant is designed to restrict exposures to groundwater on the Property, and require any future work, or other activities on the Property by or for the Owner, to be conducted in conformance with; i) applicable MDEQ soil relocation requirements

N15-760960 PAC (-ATC)

including but not limited to MCL 324.20120c and any related administrative rules and MDEQ guidance; and ii) applicable due care obligations under MCL 324.20107a and associated administrative rules and guidance, as well as the Hazardous Waste Operations and Emergency Response Standard (HAZWOPER), 29 C.F.R. Part 1910.

The land and resource use restrictions contained in this Amended Restrictive Covenant are based upon information available to, and the corrective action approved by, the MDEQ at the time this document was recorded. Failure of the corrective measures to achieve and maintain the cleanup criteria, exposure controls, and requirements specified in the approved corrective action; future changes in the environmental condition of the Property or changes in the cleanup criteria developed under Part 111 of NREPA; the discovery of environmental conditions at the Property that were not known at the time this document was recorded; or use of the Property in a manner inconsistent with the restrictions described herein – each may result in this Amended Restrictive Covenant not being protective of public health, safety, or welfare, or the environment. Additional restrictions may become necessary. Information pertaining to the environmental conditions at the Property and the corrective action undertaken at the Property is on file with the MDEQ, Office of Waste Management and Radiological Protection.

Based on the results of site investigations, the Property contains hazardous substances in excess of the concentrations developed as the unrestricted residential criteria under Section 20120a(1)(a) or (17) of NREPA. MDEQ recommends that prospective purchasers or users of the Property undertake appropriate due diligence prior to acquiring or using this Property, and undertake appropriate actions to comply with the requirements of Section 20107a of NREPA.

Definitions

"Grantee" will mean MDEQ, its respective successor entities, and those persons or entities acting on its behalf.

"Grantor" will mean RACER Properties LLC, an entity wholly-owned by the Trust, the title holder of the Property at the time this Amended Restrictive Covenant was executed, or any future title holder of the Property or some relevant sub-portion of the Property.

"MDEQ" means the Michigan Department of Environmental Quality, its successor entities, and those persons or entities acting on its behalf.

"NREPA" will mean the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.101 *et seq.*

"Owner" means at any given time the then current fee title holder(s) and the holder(s) of a life estate of the Property or any portion thereof, including the fee title holder's lessees and those persons or entities authorized to act on its behalf.

"Part 111" will mean Part 111, Hazardous Waste Management, of the NREPA in effect at the time of the recording of this Amended Restrictive Covenant.

"Part 201" will mean Part 201, Environmental Remediation, of the NREPA.

"Property" will mean the property the legal description of which is set forth in Exhibit 1, and as depicted in Exhibit 2, Survey of Property.

"Settlement Agreement" shall mean the Environmental Response Trust Consent Decree and Settlement Agreement entered by the U.S. Bankruptcy Court for the Southern District of New York on March 29, 2011, in the case of *In re Motors Liquidation Company*, etc. et al., Debtors, Case No. 09-50026 (REG), among the Debtors, the United States of America, certain states including the State of Michigan, the Saint Regis Mohawk Tribe, and EPLET, LLC, (not individually but solely in its representative capacity as Administrative Trustee of the Trust).

"Site" will have the same meaning as "Property."

"USEPA" will mean the United States Environmental Protection Agency, its successor entities, and those persons or entities acting on its behalf.

All other terms used in this document which are defined in Part 3, Definitions, of NREPA, Part 111, Part 201, or the Part 111 and Part 201 Administrative Rules, will have the same meaning in this document as in those statutes and rules as on the date this Amended Restrictive Covenant is made.

Summary of Corrective Measures

Previous corrective measures at the Site included cleanup and investigation associated with a diesel fuel release at the former above ground storage tank farm and investigation associated with the in-place closure of a former underground storage tank.

RCRA corrective cction activities related to the Site began in 2011 with the preparation of a Current Conditions Summary. Six Areas of Interest (AOIs) were identified at the Property as warranting investigation. These areas have the potential presence of hazardous waste and/or hazardous constituents due to possible past release(s) to the environment. RCRA Facility Investigation (RFI) activities followed in 2012 through 2013.

The RFI groundwater sampling activities documented exceedances of the drinking water environmental protection standards established under the administrative rules promulgated pursuant to Part 111 of NREPA, for arsenic at two monitoring wells located interior to the Site (arsenic was detected at essentially regional background levels and therefore determined to not be a concern), and copper and selenium have been detected in exceedance of their respective groundwater-surface water interface (GSI) criteria, identified in Exhibit 3. The McClaughrey Drain,

a county drain, wraps around the Property from the southwest corner and exits near the northeast side, is the primary focus of evaluation of the GSI at the Property.

Several rounds of groundwater monitoring have demonstrated that groundwater flow is consistently to the north-northeast and that copper and selenium concentrations in groundwater down-gradient of the well containing concentrations above the GSI criteria are below criteria. Groundwater contamination has not migrated to the drain or off-site, and sufficient data has been collected to demonstrate that concentrations are stable and no constituents are migrating into the McClaughrey Drain. MDEQ has approved the RCRA Corrective Action Environmental Indicator Migration of Contaminated Groundwater Under Control (CA750).

NOW THEREFORE,

Declaration of Land Use or Resource Use Restrictions

Grantor as current fee title holder of the Property, hereby declares and covenants that the Property, will be subject to those restrictions on use described below, and intends that said restrictions and covenants will run with the land, and may be enforced in perpetuity against the Owner by the following entities: (1) Grantor, if it is no longer Owner; and (2) MDEQ.

1. Land Use Prohibitions. The Owner will prohibit all uses of the Property that are not compatible or consistent with the exposure assumptions for the nonresidential cleanup criteria under MCL 324.20120a(1)(b) and generally described in the Description of Allowable Uses, attached hereto as Exhibit 4.

   Nonresidential environmental protection standards are established under the administrative rules under Part 111 of NREPA found at MAC 299.9629.

2. Activities Prohibited. Owner will prohibit activities on the Property that may result in exposures above the nonresidential cleanup criteria. These prohibited activities include:

   a. *No drinking water wells* may be installed or used on the Property.

   b. *No groundwater extraction wells* may be installed or used on the Property, except for wells and devices that are part of an MDEQ or USEPA approved response activity, and for short-term dewatering for construction purposes, provided the dewatering, including management and disposal of the groundwater, is conducted in accordance with all applicable environmental laws and does not cause or result in a new release, exacerbation of any pre-existing environmental condition, or any other violation of environmental laws. Except groundwater may be used for non-potable purposes if approved by MDEQ or EPA in writing.

c. *The Owner will not remove, disturb or damage any monitoring wells* on the Property without MDEQ or USEPA approval

d. *No contaminated soils may be relo*cated on the Property except as provided for under Part 201, Section 20120c, MCL 324.20120c.

e. *Owner will not "treat", "store", "dispose", or release any Hazardous Substances*, on, at, or below the Property, in a manner that would require a permit under RCRA, 42 U.S.C. §§ 6901 *et seq.* or equivalent State Law, except pursuant to a plan or permit approved in writing by MDEQ or USEPA.

f. *If Owner elects to remove any slabs, pavement or other impervious surface* on the Property, Owner will be responsible for any and all obligations under environmental laws arising from any such removal, alteration or disturbance, whether or not caused by, arising from or related to, an environmental condition.

g. *The Owner will not build or occupy any building on the Property* without first completing one of the following: Option 1) Evaluate and determine, in accordance with applicable environmental laws, rules, or regulations that no unacceptable vapor intrusion risks to human health exist in any existing or newly constructed site buildings; or Option 2) Install, operate and maintain a vapor barrier and/or mitigation system designed to eliminate the potential for subsurface vapor phase hazardous substances to migrate into any building at concentrations greater than applicable criteria. This prohibition does not apply to short-term occupancy of a building for purposes of construction, renovation, repair, or other short-term activities as long as adequate health and safety precautions are employed during these activities, and they are performed in compliance with Section 20107a of NREPA.

   If Option 2 above is selected, the Owner will install and thereafter maintain a vapor barrier and/or install and thereafter operate and maintain a vapor intrusion mitigation system in accordance with applicable standards and criteria, for the purpose of mitigating the potential intrusion of soil vapor below any human-occupied building constructed on the property after the date of this Amended Restrictive Covenant until it is determined that a vapor barrier or mitigation system is no longer necessary in accordance with Option 1, above.

h. *The Owner will manage contaminated soils, media and/or debris and all other soils* located on the Property whether encountered on the surface or during below grade work in accordance with the requirements of Part 111 and RCRA Subtitle C, the administrative rules promulgated pursuant to Part 111 and RCRA, and all other relevant state and federal laws, including but not limited to MCL 324.20120c. This provision regarding contaminated soil/media/debris management also applies in

the event that the Owner elects to remove any slabs, pavement, or other impervious surface on the Property.

3. Compliance with this Amended Restrictive Covenant and Applicable Due Care Obligations. The Owner shall at all times comply with the conditions and restrictions of this Amended Restrictive Covenant and the applicable due care obligations under Section 20107a of NREPA and CERCLA, 42 U.S.C. § 9601, et seq. Owner agrees to maintain records of its applicable due care activities and shall supply copies of any records documenting such compliance upon request from Grantor or any Agency.

4. Access. The Owner will grant to the Trust and MDEQ the right to enter the Property at reasonable times for the purpose of determining and monitoring compliance with this Amended Restrictive Covenant, including the right to take samples, inspect the operation of corrective measures, and inspect any records relating thereto, and to perform any actions necessary to maintain compliance with Parts 111 and 201, applicable federal laws and regulations.

5. Transfer of Interest. The Owner will provide notice at the addresses provided in this document to MDEQ of the Owner's intent to transfer any interest in the Property, or any portion thereof, at least fourteen (14) business days prior to consummating the conveyance. A conveyance of title, easement, or other interest in the Property will not be consummated by Owner without adequate and complete provision for compliance with the terms and conditions of this Amended Restrictive Covenant and the applicable provisions of Section 20116 of the NREPA. Grantor will include in any instrument conveying any interest in any portion of the Property, including, but not limited to, deeds, leases, and mortgages, a notice which is in substantially the following form:

NOTICE: THE INTEREST CONVEYED HEREBY IS SUBJECT TO A DECLARATION OF RESTRICTIVE COVENANT DATED _____ [*month, day, year*], AND RECORDED WITH THE WAYNE COUNTY REGISTER OF DEEDS, LIBER _____, PAGE _____.

A copy of this Amended Restrictive Covenant shall be provided to all future owners, heirs, successors, lessees, easement holders, assigns, and transferees by the person transferring the interest.

6. Notices. Any notice, demand, request, consent, approval, or communication that is required to be made or obtained under this Amended Restrictive Covenant will be made in writing; include a statement that the notice is being made pursuant to the requirements of this Amended Restrictive Covenant; include the MDEQ Reference Number RC-OWMRP-111-15-005, the Facility MID Number MID000809905; and will be served either personally, or sent via first class mail, postage prepaid, as follows:

For MDEQ:

Chief, Hazardous Waste Section
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, MI 48909-7741

For RACER Trust:

Michigan Cleanup Manager
RACER Trust
500 Woodward, Suite 2650
Detroit, MI. 48226

7. Term. This Amended Restrictive Covenant will run with the Property, and will be binding on Owner, and all current and future successors, lessees, easement holders, their assigns, and their authorized agents, employees, or persons acting under their direction and control.

8. Enforcement. Grantor and/or the Trust is entitled to enforce the restrictions and covenants of this Amended Restrictive Covenant by specific performance or other legal action in a court of competent jurisdiction against subsequent Owners of all or part of the Property. Grantor, on behalf of itself, and its successors in title, intends and agrees that MDEQ is entitled to enforce the restrictions and covenants in this Amended Restrictive Covenant by specific performance or other legal action in a court of competent jurisdiction against Grantor, as Owner, and thereafter against subsequent Owners of all or part of the Property. All remedies available hereunder will be in addition to any and all other remedies at law or equity.

9. Modification/ Release/Rescission. Grantor or Owner may request in writing to MDEQ at the addresses provided in herein, modifications to, or release or rescission of, this Amended Restrictive Covenant. This Amended Restrictive Covenant may be modified, released or rescinded only with the written approval of MDEQ. Any approved modification to, or release or rescission of, this Amended Restrictive Covenant will be filed with the appropriate Registrar of Deeds by the Grantor or Owner and a certified copy will be returned to MDEQ at the addresses provided herein.

10. Severability. If any provision of this Amended Restrictive Covenant is held to be invalid by a court of competent jurisdiction, the invalidity of such provision will not affect the validity of any other provisions of this Amended Restrictive Covenant and all other provisions will continue to remain in full force and effect.

11. Limitation on Liability. The Trust's, RACER Properties LLC's and the Administrative Trustee's liability under this Amended Restrictive Covenant is limited by the terms and conditions of the Settlement Agreement, which are incorporated herein by reference.

12. Authority to Execute Amended Restrictive Covenant. The undersigned person executing this Amended Restrictive Covenant represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Amended Restrictive Covenant.

13. Miscellaneous.

a) Controlling Law. The interpretation and performance of this Amended Restrictive Covenant will be governed by the laws of the United States as to the obligations referred to in the Settlement Agreement and the laws and regulations of the State of Michigan for all other purposes hereunder (without reference to choice of laws principles thereof). The right to enforce the conditions and restrictions in this Amended Restrictive Covenant are in addition to other rights and remedies that may be available, including, but not limited to, administrative and judicial remedies under CERCLA or Part 111 of the NREPA.

b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Amended Restrictive Covenant will be liberally construed to affect the purpose of this Amended Restrictive Covenant, and the policy and purpose of RCRA and the land use restrictions and prospective use limitations required by Part 201. If any provision of this Amended Restrictive Covenant is found to be ambiguous, an interpretation consistent with the purpose of this Amended Restrictive Covenant that would render the provision valid will be favored over any interpretation that would render it invalid.

c) Entire Agreement. This Amended Restrictive Covenant and its attachments and appendices supersedes all prior discussions, negotiations, understandings, or agreements relating to the matters addressed herein, all of which are merged herein.

[signature page follows]

IN WITNESS WHEREOF, RACER Properties LLC has caused this Amended Restrictive Covenant, MDEQ Reference Number RC-OWMRP-111-15-005, to be executed on this 28th day of October, 2015.

RACER PROPERTIES LLC

By: Revitalizing Auto Communities Environmental Response Trust, Sole Member of RACER Properties LLC

By: EPLET, LLC, acting solely in its representative capacity as Administrative Trustee of Revitalizing Auto Communities Environmental Response Trust

By: _____
ELLIOTT P. LAWS, not individually, but acting solely in his representative capacity as Managing Member of EPLET, LLC

* * * * * * * *

~~DISTRICT~~/STATE OF Michigan ~~CITY~~/COUNTY OF Wayne

The foregoing instrument was acknowledged before me this 28th day of October, 2015, by ELLIOTT P. LAWS, not individually, but acting solely in his capacity as Managing Member of EPLET, LLC, a Delaware limited liability company, acting solely in its representative capacity as Administrative Trustee of Revitalizing Auto Communities Environmental Response Trust, a New York trust, acting solely in its capacity as Sole Member of RACER Properties LLC, a Delaware limited liability company, on behalf of the company.

_____
Notary Public Signature

Name of Notary Public Tracie L. Nichols
Notary Public, ~~District~~/State of Michigan
~~City~~/County of Wayne
My Commission Expires: 3/19/17
Acting in the County of Wayne

This document is exempt from state and county transfer taxes pursuant MCL 207.505(a) and MCL 207.526(a).

Prepared by/Return to:
Dawda, Mann, Mulcahy & Sadler, PLC
39533 Woodward Avenue, Suite 200
Bloomfield Hills, Michigan 48304
Attn: Edward C. Dawda

Ref # 10020

EXHIBIT 1

LEGAL DESCRIPTION OF PROPERTY

(Per First American Title Insurance Company, Commitment No. NCS-650541-MICH, Dated: January 02, 2014.)

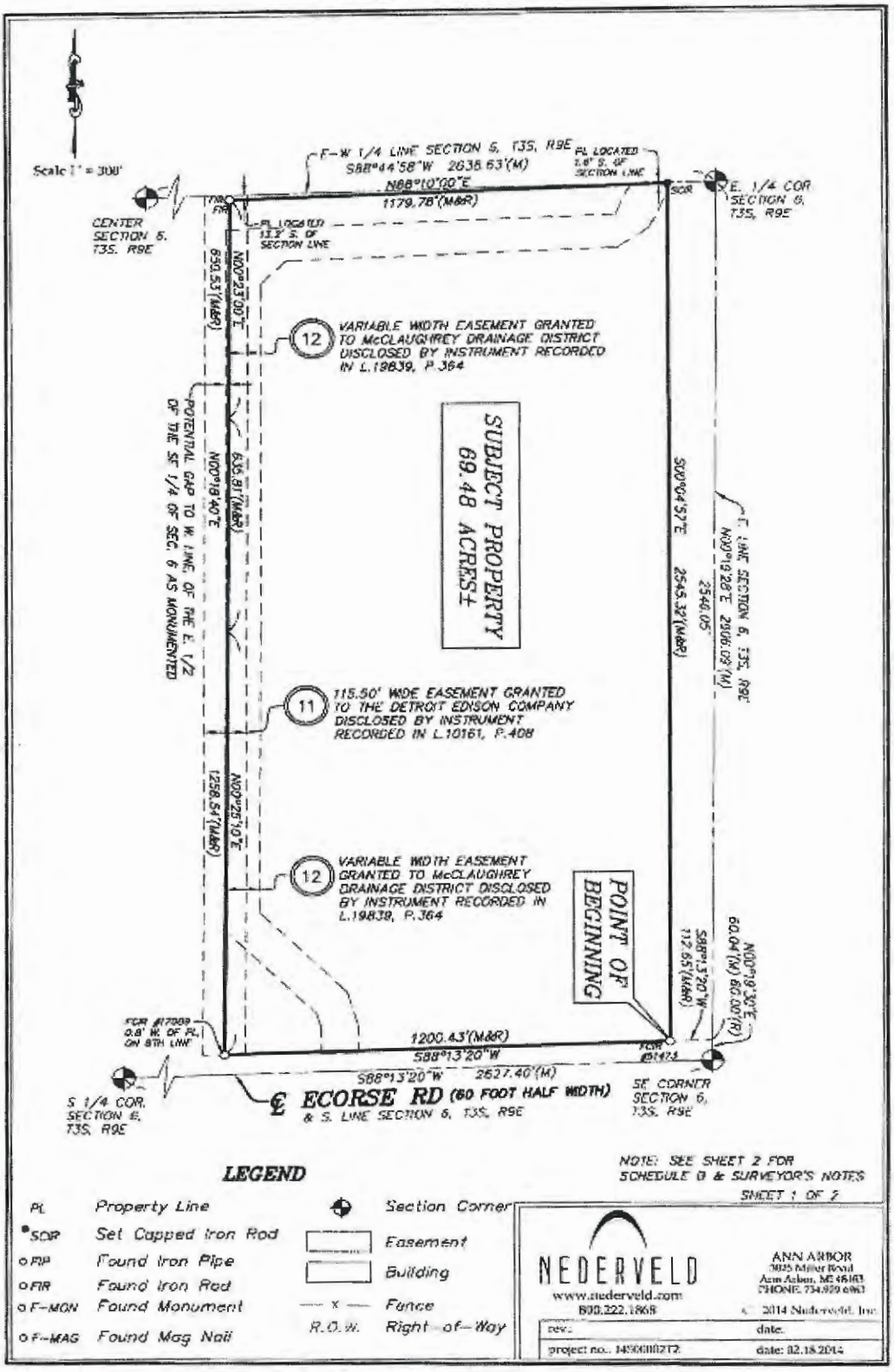
Real property in the City of Romulus, County of Wayne, State of Michigan, described as follows:

Part of the Southeast Quarter of Section 6, Town 3 South, Range 9 East, City of Romulus, Wayne County, Michigan; described as commencing at the Southeast corner of said section; Thence North 00 degrees 19 minutes 30 seconds East 60.00 feet; Thence South 88 degrees 13 minutes 20 seconds West 112.65 feet to the point of beginning; Thence South 88 degrees 13 minutes 20 seconds West 1200.43 feet; Thence North 00 degrees 25 minutes 10 seconds East 1258.54 feet; Thence North 00 degrees 18 minutes 40 seconds East 635.81 feet; Thence North 00 degrees 23 minutes 00 seconds East 650.53 feet; Thence North 88 degrees 10 minutes 00 seconds East 1179.78 feet; Thence South 00 degrees 04 minutes 57 seconds East 2545.32 feet to the point of beginning.

Tax Parcel No. 80-24-99-0005-703

Commonly known as 37350 Ecorse Road, Romulus, Michigan

EXHIBIT 2
SURVEY OF PROPERTY



Ref # 10020

EXHIBIT 3

LIST OF CONTAMINANTS ABOVE CRITERIA IN GROUNDWATER

Applicable Environmental Criteria

Contaminant	Chemical Abstract Service Number	Parts per Billion (ppb)
Copper	7440-50-8	GSI - 9.0 ppb
Selenium	7782-49-2	GSI - 5.0 pp

EXHIBIT 4

DESCRIPTION OF ALLOWABLE USES

Nonresidential Land Use: This land use is characterized by any use which is not residential in nature and is primarily characterized by industrial and commercial uses. Industrial uses typically involve manufacturing operations engaged in processing and manufacturing of materials or products. Other examples of industrial uses are utility companies, industrial research and development, and petroleum bulk storage. Commercial uses include any business or income-producing use such as commercial warehouses, lumber yards, retail gas stations, auto dealerships and service stations, as well as office buildings, banks, and medical/dental offices (not including hospitals). Commercial uses also include retail businesses whose principal activity is the sale of food or merchandise within an enclosed building and personal service establishments which perform services indoors such as health clubs, barber/beauty salons, photographic studios, etc.

Any residential use is specifically prohibited from the non-residential land use category. This would include the primary use of the Property for human habitation and includes structures such as single family dwellings, multiple family structures, mobile homes, condominiums, and apartment buildings. Residential use is also characterized by any use which is intended to house, educate, or provide care for children, the elderly, the infirm, or other sensitive populations, and therefore could include day care centers, educational facilities, hospitals, elder care facilities, and nursing homes. The use of any accessory building or portion of an existing building as a dwelling unit permitted for a proprietor or storekeeper and their families, located in the same building as their place of occupation, or for a watchman or caretaker is also prohibited. Any authority that allows for residential use of the Property as a legal non-conforming use is also restricted per the prohibitions contained in this restrictive covenant

APPENDIX D

Well Abandonment Logs

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-101

PROJECT	Racer Rowlins	H&A FILE NO.	37515-018
LOCATION	37350 Eccle Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. McG.
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-01-101
Well Diameter	1.5"
Decommissioning Technique	Plugged in-place
Depth to Groundwater	6.19'
Total Depth of Well	10.25'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Bentonite		
Manufacturer	—	Envirophug		
Quantity	—	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

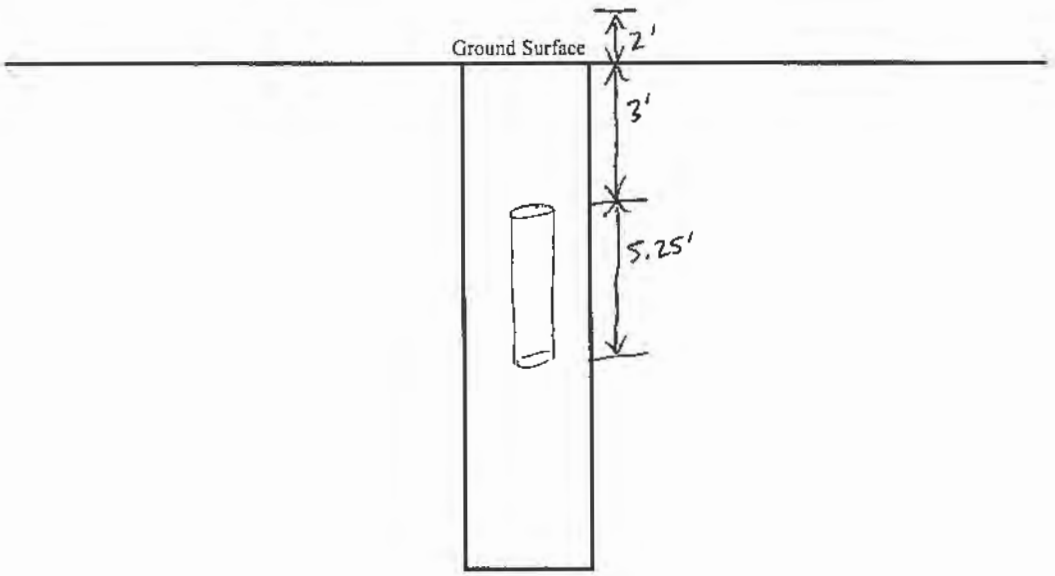
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines) The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed 5' of pvc riser

Form # 2013

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-103

PROJECT	Racer Romulus	H&A FILE NO.	37515-01B
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mebi
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-01-103
Well Diameter	1.5"
Decommissioning Technique	pulled in-place
Depth to Groundwater	4.10
Total Depth of Well	11.67

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Enviroplug No. 8		
Quantity	—	4 lbs	2.0	2.0

*1 Bag = 94 Lbs.

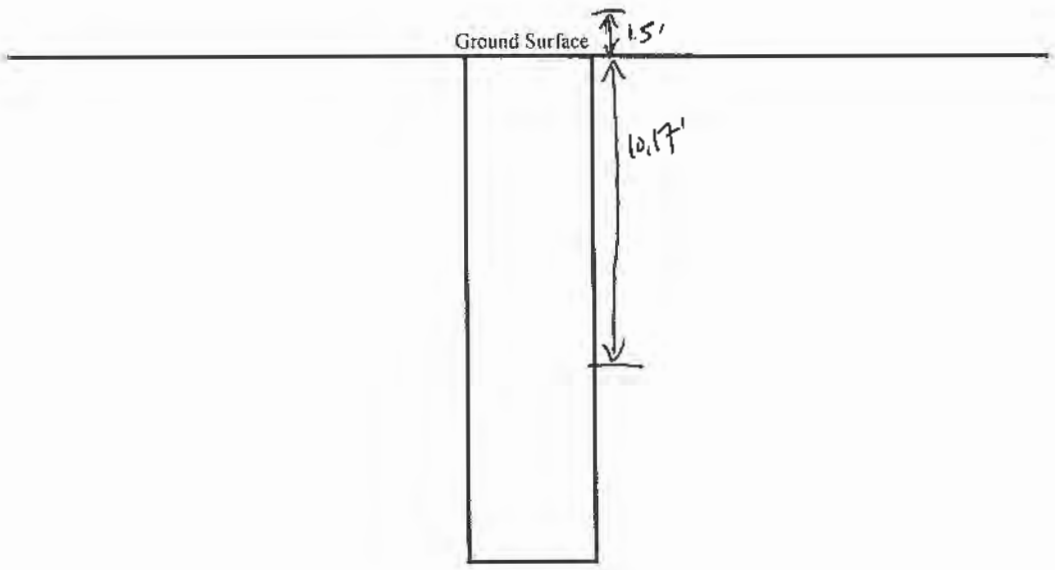
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Entire length of casing removed.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-104

PROJECT	Racer Romulus	H&A FILE NO.	37515-01B
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mesi
CONTRACTOR	MSG	REMOVAL DATE	11/7/15

Well Designation	SB-01-104
Well Diameter	1.5"
Decommissioning Technique	plugged in place
Depth to Groundwater	4.57'
Total Depth of Well	15.25'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Benseal		
Quantity	—	4 lbs	2.0	2.0

*1 Bag = 94 Lbs.

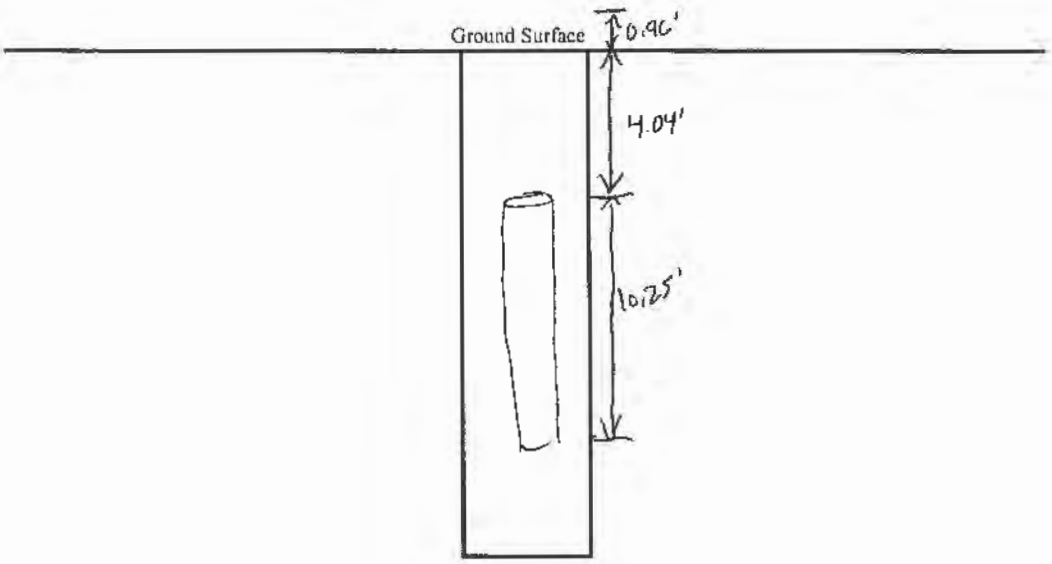
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed first 5' of riser, then plugged

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. ~~SB-02-110~~ SB-01-105

PROJECT	Racer ~~Trust~~ Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mesi
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	~~SB-02-110~~ SB-01-105
Well Diameter	1.5"
Decommissioning Technique	Drilled in-place
Depth to Groundwater	~~3.81'~~ 3.15'
Total Depth of Well	~~10.25'~~ 10.25'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bonseal		
Quantity	—	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

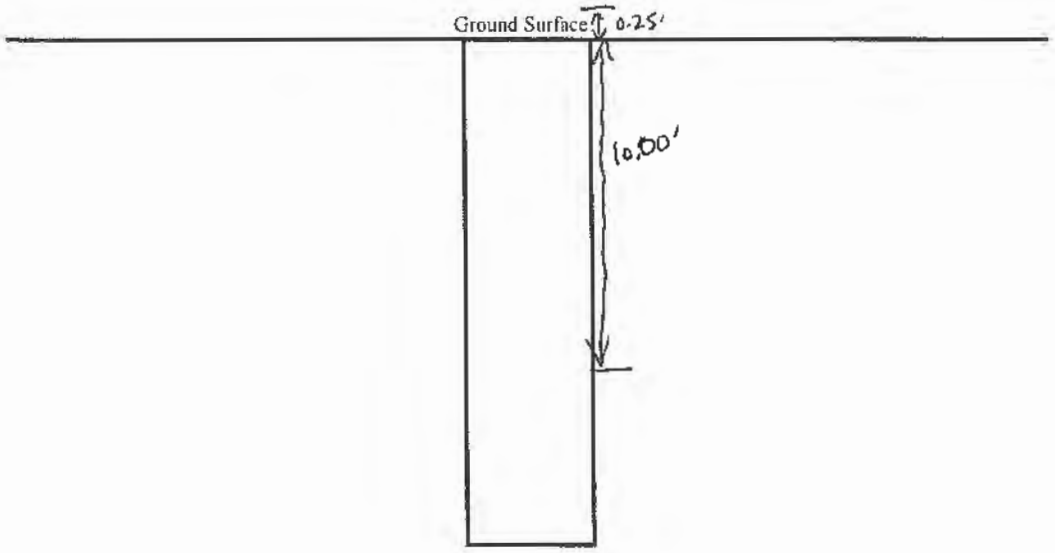
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Entire length of casing removed.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-106

PROJECT	Ryder Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Ryder Trust	FIELD REP.	S. Mej.
CONTRACTOR	MSE	REMOVAL DATE	11/3/15

Well Designation	SB-01-106
Well Diameter	1.5"
Decommissioning Technique	plugged in-place
Depth to Groundwater	1.57 ft
Total Depth of Well	16.83 ft

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bensead		
Quantity	—	2 lbs	0.0	0.0

*1 Bag = 94 Lbs.

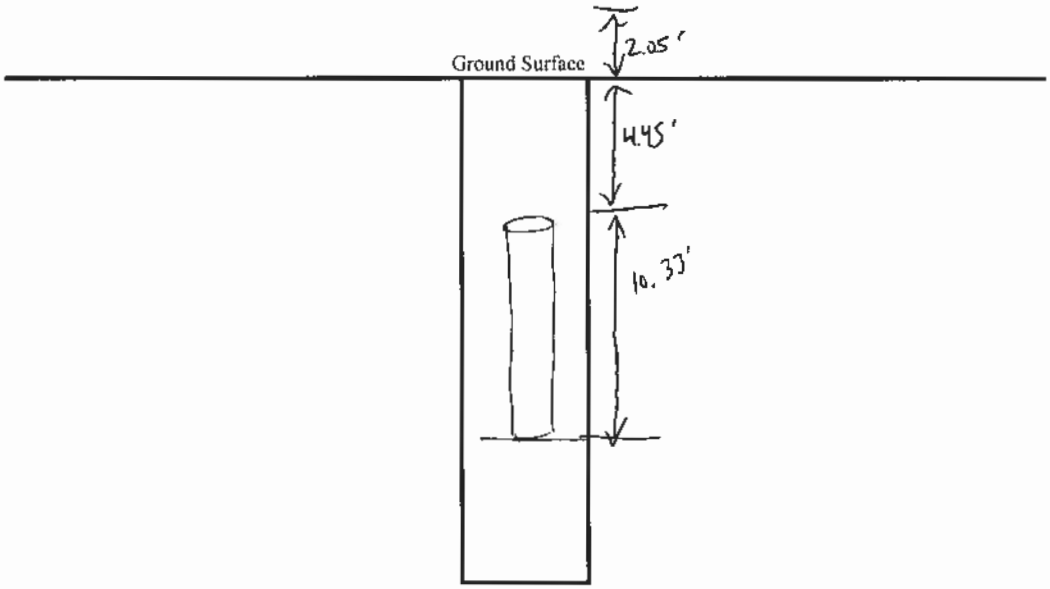
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed 6.5' of riser, left remaining riser pipe.

Note: ponding water present at well location.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-107

PROJECT	Baker Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Baker Trust	FIELD REP.	S. Mesi
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-01-107
Well Diameter	1.5"
Decommissioning Technique	~~bailed~~ pulled in-place
Depth to Groundwater	3.12'
Total Depth of Well	10.24'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bensea1		
Quantity	—	3 lbs	1.5	1.5

*1 Bag = 94 Lbs.

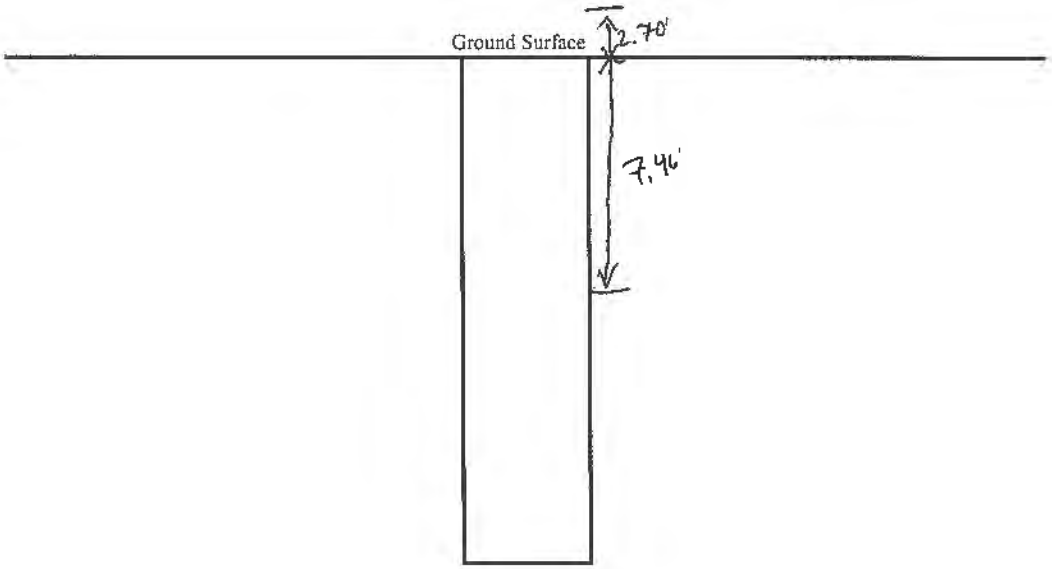
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Entire length of casing removed + plugged

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-01-108

PROJECT	Racer Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mesi
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-01-108
Well Diameter	1.5"
Decommissioning Technique	plugged in-place
Depth to Groundwater	2.37'
Total Depth of Well	10.17'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bensal		
Quantity	—	2lbs	0.0	0.0

*1 Bag = 94 Lbs.

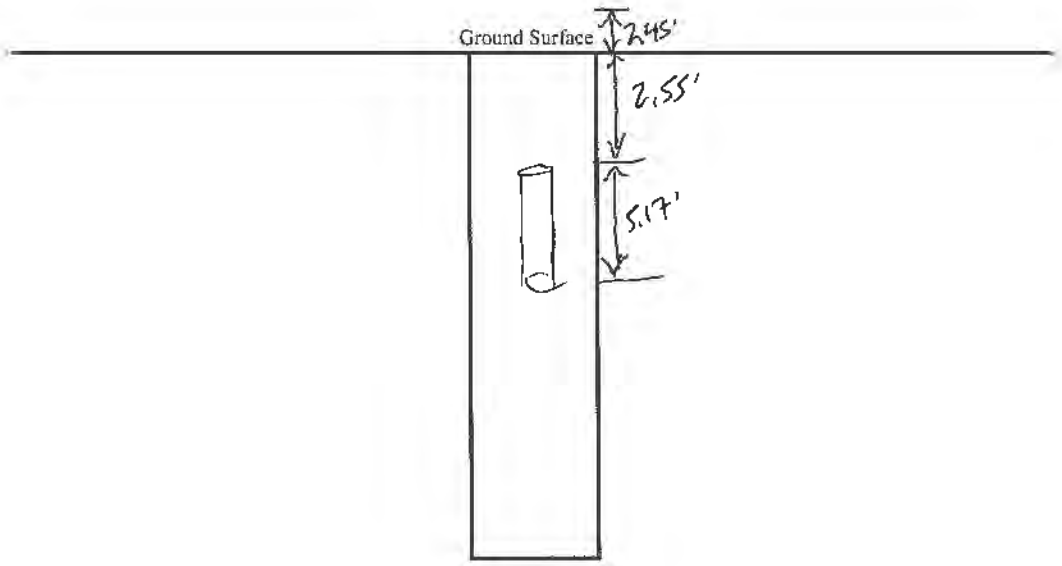
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed first 5' of riser. no riser 2.55' bgs. Note ponding water present at well location.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-02-109

PROJECT	Racer Ramp NW	H&A FILE NO.	37515-018
LOCATION	37350 Eccose Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Musi
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-02-109
Well Diameter	1.5"
Decommissioning Technique	Pulled in-place
Depth to Groundwater	4.57
Total Depth of Well	~~10.2~~ 15.25

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bensea1		
Quantity	—	4 lbs	1.5	1.5

*1 Bag = 94 Lbs.

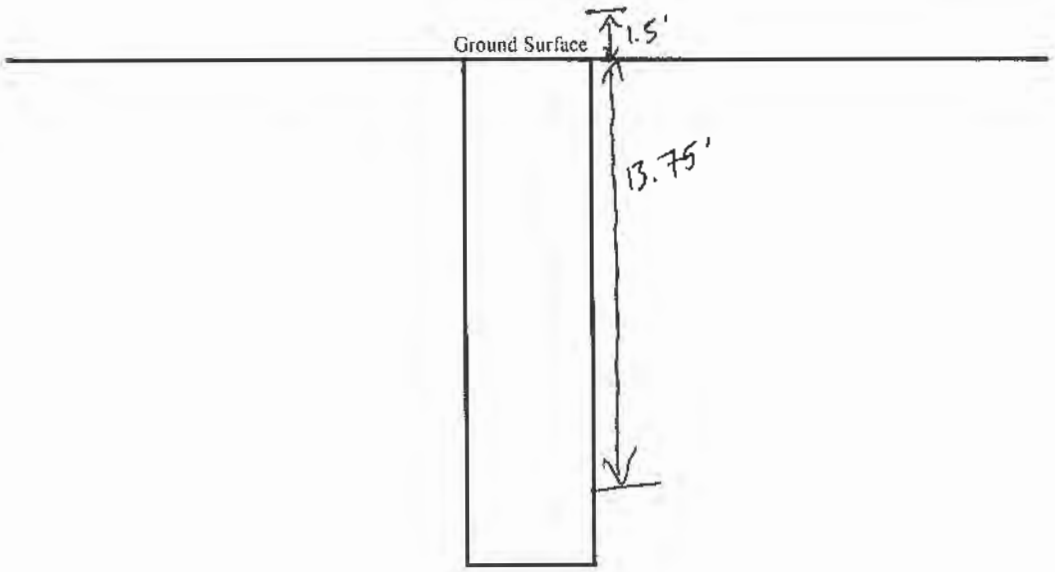
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed Entire length of casing

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-02-110

PROJECT	Racer Remedy	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Meg.
CONTRACTOR	MSG	REMOVAL DATE	11/3/15

Well Designation	SB-02-110
Well Diameter	1.5"
Decommissioning Technique	pulled in-place
Depth to Groundwater	3.81'
Total Depth of Well	10.25'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	Unknown	Halliburton Baroseal		
Quantity	2.0 lbs	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

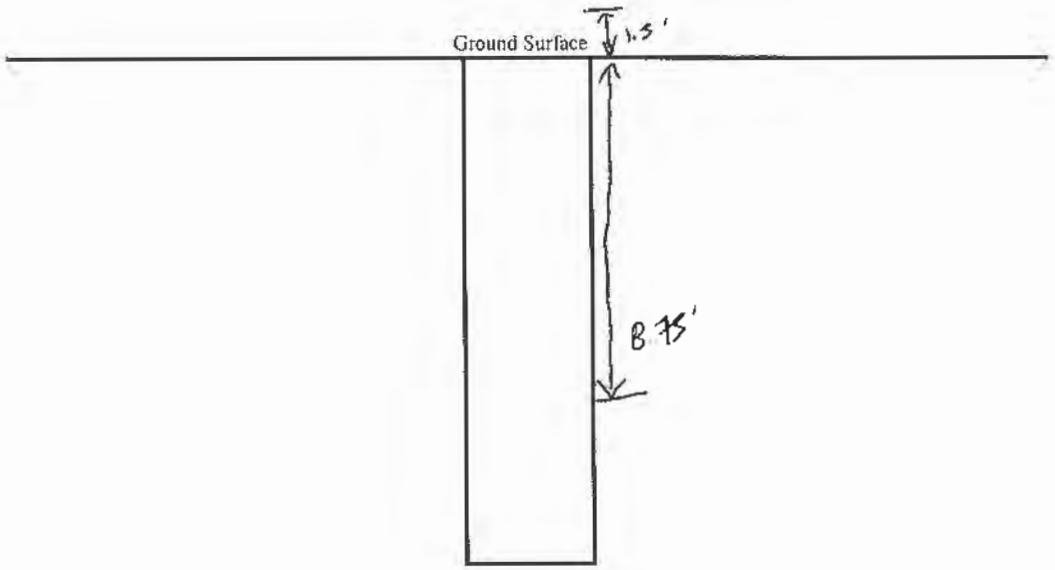
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Removed Entire length of casing

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-03-116

PROJECT	Racer Borrow	H&A FILE NO.	37515-013
LOCATION	37350 ~~Romoland~~ Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mesi
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-03-116
Well Diameter	1.5
Decommissioning Technique	plugged in-place
Depth to Groundwater	4.91
Total Depth of Well	12.60

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	—	Sodium Bentonite		
Manufacturer	—	Halliburton Bensea1		
Quantity	—	3lbs	2.0	2.0

Explanation of Well Decommissioning Techniques:

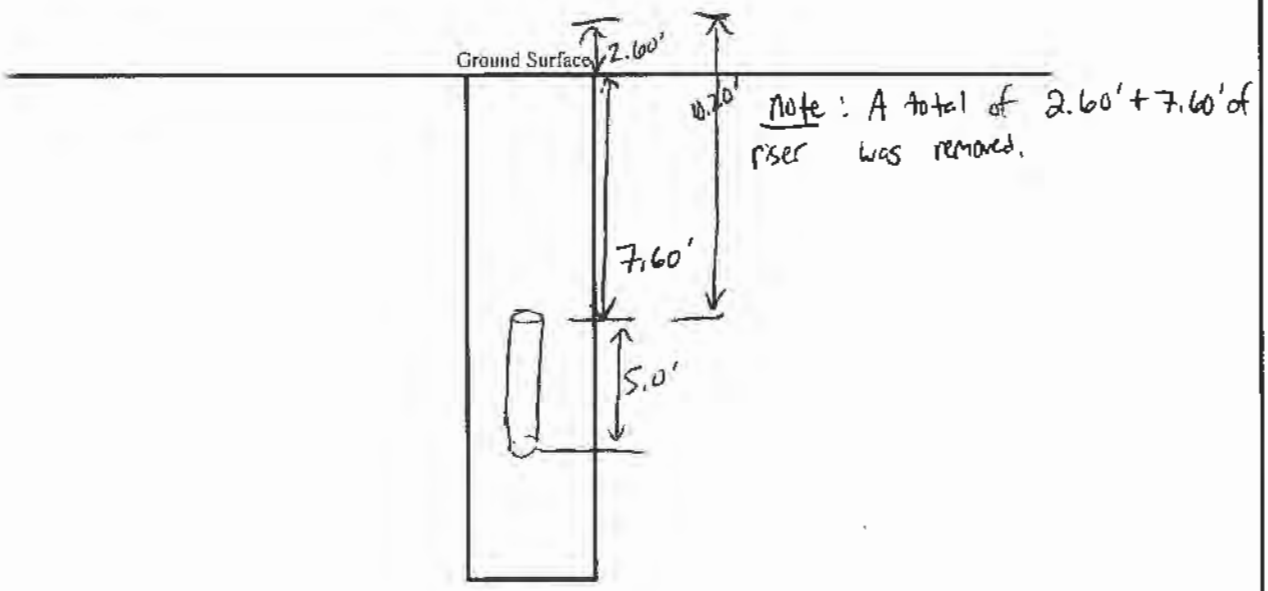
A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

*1 Bag = 94 Lbs.

Sketch:



COMMENTS:

Form # 2013

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-04-115

PROJECT	Racer Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Meg.
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-04-115
Well Diameter	1.5"
Decommissioning Technique	plugged in place
Depth to Groundwater	3.00
Total Depth of Well	10.27

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	Unknown	Halliburton Bensal		
Quantity	~~1lb~~ ~~10.0 lbs~~ 2 lbs	3.0 lbs	20	2.0

*1 Bag = 94 Lbs.

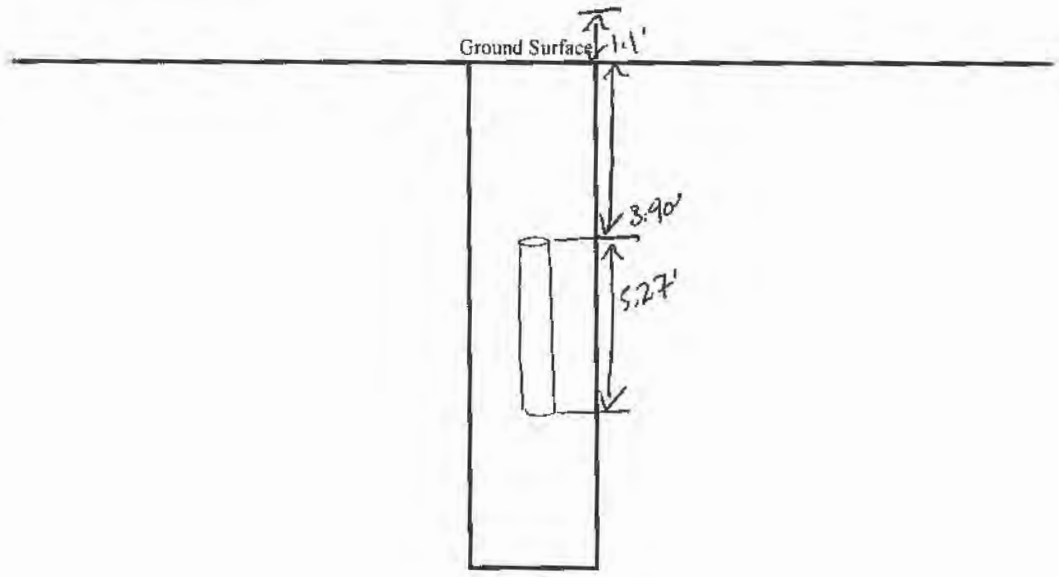
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Unscreened from 5' section of PVC riser, plugged remaining 5.27' of riser in-place

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-05-113

PROJECT	Racer Ranch	H&A FILE NO.	37515-018
LOCATION	37350 Eccles Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mc.
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-05-113
Well Diameter	1.5
Decommissioning Technique	plugged in-place
Depth to Groundwater	2.47
Total Depth of Well	10.25

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	Unknown	Halliburton Bensea1		
Quantity	2 lbs	3 lbs	2.0	2.00

*1 Bag = 94 Lbs.

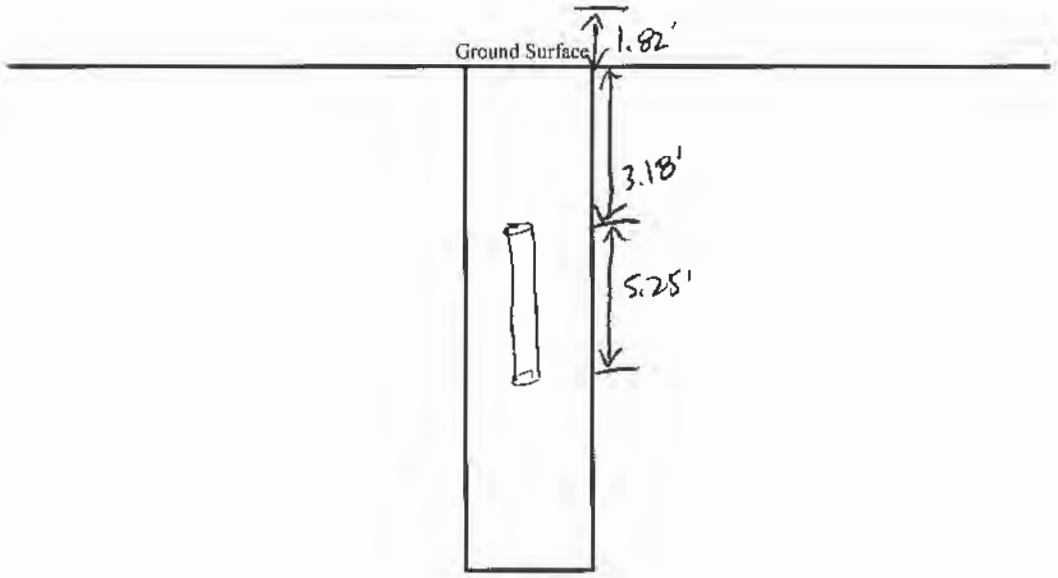
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines) The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: pvc riser snapped off to 5' where it was threaded to the next section of riser. plugged in-place

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-05-114

PROJECT	Race Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Eloise Rd	PROJECT MGR.	D. Bean
CLIENT	Race Trust	FIELD REP.	S. McG.
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-05-114
Well Diameter	1.5"
Decommissioning Technique	plugged in place
Depth to Groundwater	3.75
Total Depth of Well	10.25

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	unknown	Halliburton Bensea l		
Quantity	2 lbs	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

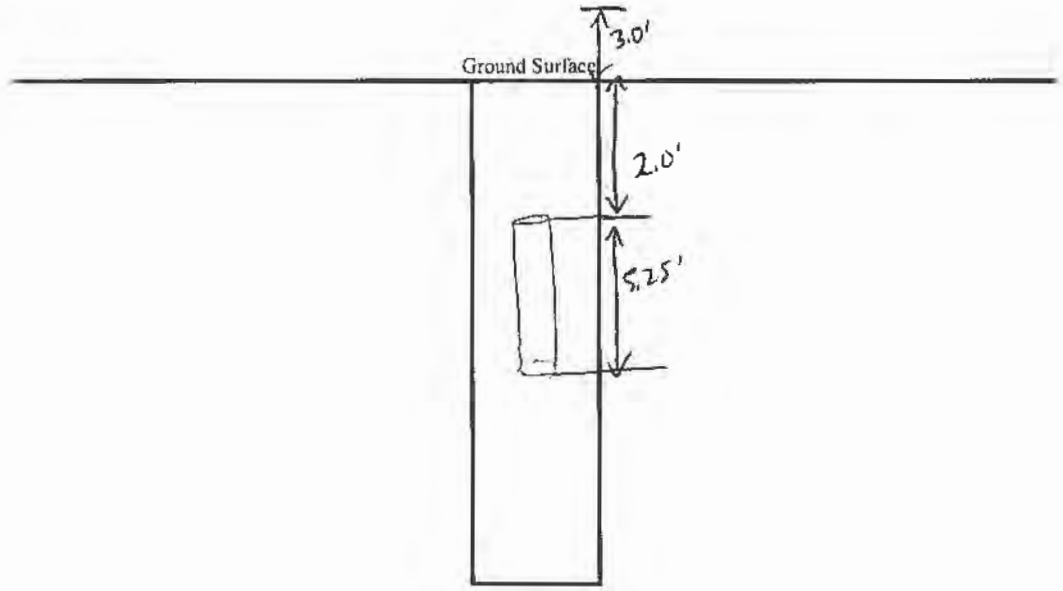
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Unscreened 1st 5' section of riser, the remaining 5.25' of riser was plugged in place.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-07-111

PROJECT	Racer Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mes!
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-07-111
Well Diameter	1.5"
Decommissioning Technique	Plugged in-place
Depth to Groundwater	2.45'
Total Depth of Well	10.24'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	unknown	Halliburton Bensoal		
Quantity	2 lbs	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

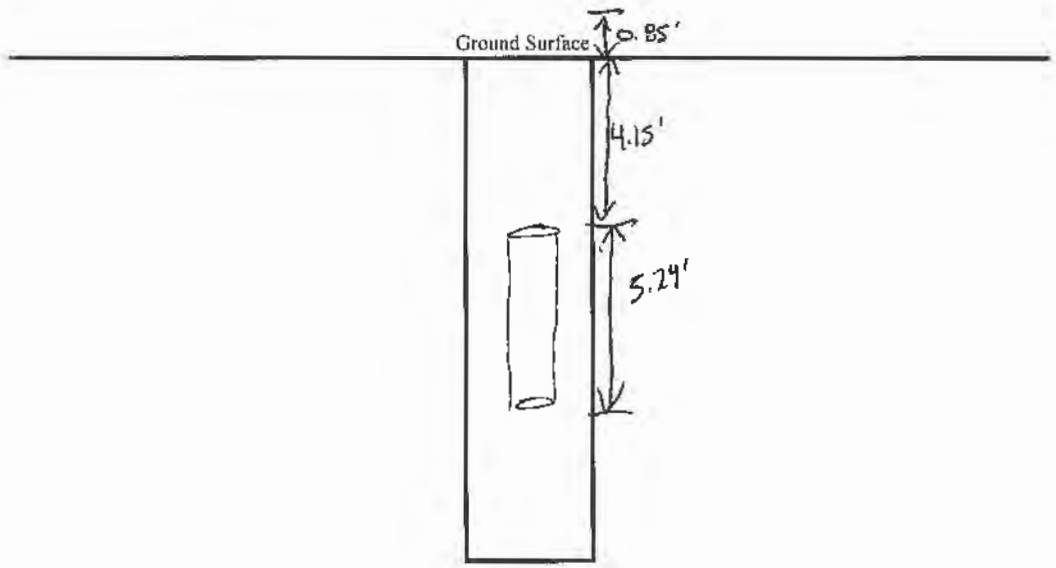
Exlanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS: Remove top 5' of pvc riser. Then plugged in-place, using hydrated Bentonite.

HALEY ALDRICH

WELL DECOMMISSIONING REPORT

Well No. SB-07-112

PROJECT	Racer Romulus	H&A FILE NO.	37515-018
LOCATION	37350 Ecorse Rd	PROJECT MGR.	D. Bean
CLIENT	Racer Trust	FIELD REP.	S. Mes.
CONTRACTOR	MSG	REMOVAL DATE	11/4/15

Well Designation	SB-07-112
Well Diameter	1.5"
Decommissioning Technique	Plugged in-place
Depth to Groundwater	2.6'
Total Depth of Well	10.25'

	Cement (Lbs. - Bags*)	Additive (Lbs. - Gals.)	Water (Gals.)	Final Quantity (Gals.)
Type	Cement	Sodium Bentonite		
Manufacturer	Unknown	Halliburton Bensea l		
Quantity	2 lbs	3 lbs	2.0	2.0

*1 Bag = 94 Lbs.

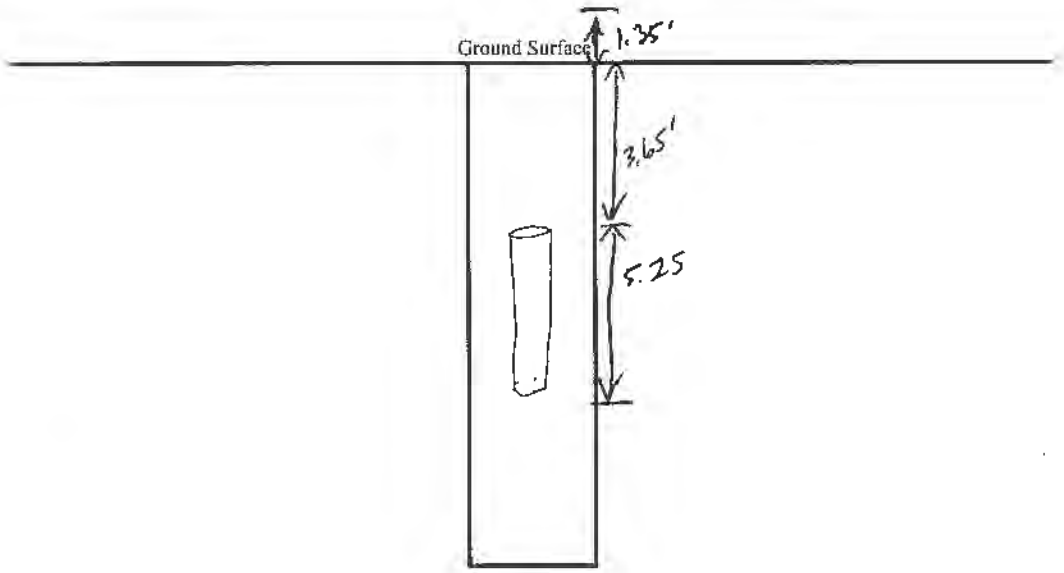
Explanation of Well Decommissioning Techniques:

A. Shallow Wells:

These wells may either be removed by pulling the casing out of the ground, or plugged in-place using bentonite grout. If the well is plugged in-place, the casing must be plugged above the screen using a bentonite/cement grout (see grout placement guidelines), and the casing should be cut-off a minimum of 3 feet below the ground surface. If the well is pulled, care should be taken to compact the soils to avoid significant ground subsidence.

B. Deep Wells: Deep wells must be plugged using a bentonite/cement grout, which will fill the casing and annular space (see grout placement guidelines). The casing must be terminated 3 feet below the ground surface.

Sketch:



COMMENTS:

APPENDIX E

Photo Log

FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MICHIGAN
File No. 37515
Date Photographs Taken: 7/15/2015

Photo #1:
View of access road at entry facing west

Photo #2:
View of south parking area facing east

Photo #3:
View of walkway from parking lot to building pad facing east

Photo #4:
View of access road in northwest corner of property facing east

Photo #5:
View of former building pad facing north from walkway area

Photo #6:
View of former building pad facing west from southeast portion of Site

FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MICHIGAN
File No. 37515
Date Photographs Taken: 7/15/2015

Photo #7:
View of grass area southeast of former building facing east

Photo #8:
View of former building pad facing south from eastern portion of Site

Photo #9:
View of former building pad facing west from eastern portion of Site

Photo #10:
View of east side of property facing north

Photo #11:
View of ephemeral ponded water on eastern portion of Site facing north

Photo #12:
View of ponded water facing southeast, near AOI-01

FORMER ROMULUS ENGINEERING CENTER
ROMULUS, MICHIGAN
File No. 37515
Date Photographs Taken: 7/15/2015

Photo #13:
View of site from north facing south, near AOI-01

Photo #14:
View of gravel area in northeast corner facing east

Photo #15:
View of east side of property facing south

APPENDIX F

Laboratory Analytical Reports

MERIT LABORATORIES, INC.
2680 EAST LANSING DRIVE EAST LANSING • MICHIGAN • 48823
PHONE: 517-332-0167 FAX: 517-332-6333
FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

RACER ROMULUS

SDG Batch:

62577

Pages 1 - 112

MERIT LABORATORIES, INC.
2680 EAST LANSING DRIVE EAST LANSING • MICHIGAN • 48823
PHONE: 517-332-0167 FAX: 517-332-6333
FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

PROJECT:
RACER ROMULUS

SDG Batch:
62577.01

Prepared by:
Merit Laboratories, Inc.

September 16, 2014

Laboratory Name: Merit Laboratories, Inc.
City / State: East Lansing, MI
Sample Delivery Group: S62577.01 - .11

	References		Pages		Checklist	
Deliverable	**Form**	**CLP**	**From**	**To**	**Lab**	**Audit**
1. **Inventory Sheet** (not numbered)	This	DC-2			☑	☐
2. **SDG Case Narrative**			1	1	☑	☐
3. **Analytical Summary Report**			2	28	☑	☐
4. **ICP/MS Metals Data**			29	108		
Sequence / Injection Log		F.0			☑	☐
Data Sheet		F. I			☑	☐
Initial Calibration and Calibration Verification		F. IIA			☑	☐
CRDL Standards		F. IIB			☑	☐
Blanks		F. III			☑	☐
Interference Check Sample		F. IVB			☑	☐
Spike Sample Recovery		F. VA			☑	☐
Post-Digest Spike Sample Recovery		F. VB			☑	☐
Duplicates		F. VI			☐	☐
Laboratory Control Sample		F. VII			☑	☐
Serial Dilutions		F. VIII			☑	☐
Analysis Run Log		F. XIII			☑	☐
ICP/MS Tune		F. XIV			☑	☐
Internal Standard Relative Intensity Summary		F. XV			☑	☐
Instrument Detection Limits (IDL) & MDLs		F. IX			☑	☐
Linear Ranges		F. XI			☑	☐
ICP/MS Raw Data					☑	☐
Preparation / Digestion Log		F. XII			☑	☐
5. **Shipping / Receiving Documents**			109	112		
Chain-of-Custody					☑	☐
Sample log-in sheet					☑	
Sample Receipt					☑	☐

MERIT LABORATORIES, INC.
2680 EAST LANSING DRIVE EAST LANSING • MICHIGAN • 48823
PHONE: 517-332-0167 FAX: 517-332-6333
FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

CASE NARRATIVE
CLIENT: HALEY & ALDRICH, INC.
PROJECT: RACER ROMULUS
Merit IDs: S62577.01-S62577.11

Field Sampling: Eric Shirley performed the fieldwork.

Analytical Bottles: All bottles were sent with the appropriate preservation in it. Please see the bottle list attached.

Sample Receiving: All samples were received by the laboratory on ice (09/04/2014). Dates and signatures can be found on the Chain of Custody Records. The sample receipts specify the actual tags and bottles received and logged into the laboratory "vlims" system.

ANALYSES

Metals: All metal analyses were performed according to Method 200.8. The metal digestion was performed according to Method 3015A. The QC requirements were followed for this specific project and method-specified criteria were met. *Outliers*: None

Data Reporting: The analytical reports are reflective of what is on a given Chain-of-Custody record (COC). Merit's IDs were assigned to the samples as they were delivered and accepted by our log-in staff.

"I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness, for other than the condition detailed above. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature."

Barbara Ball

Barb Ball — 9/16/14
QA Officer — Date

Analytical Laboratory Report

Report ID: S62577.01(01)
Generated on 09/05/2014

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Addtional Contacts: Christine Horch

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
Kevin George (kgeorge@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S62577.01-S62577.11
Project: RACER Romulus
Collected Date: 09/02/2014 - 09/03/2014
Submitted Date/Time: 09/04/2014 13:15
Sampled by: Eric Shirley
P.O. #: 37515-014

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Laboratory Certifications:
Michigan DNRE (#9956), DOD/ISO 17025 (#69699), WBENC (#2005110032), Ohio EPA (#CL0002)
IN Drinking Water (#C-MI-07), NELAC NY (#11814), NCDENR (#680), NC Drinking Water (#26702)
Some analytes reported may not be certified.Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director

Sample Summary (11 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S62577.01	DUP-01(09-02-2014)	Groundwater Quality	09/02/2014 00:01
S62577.02	RB-01(09-02-2014)	Groundwater Quality	09/02/2014 00:02
S62577.03	TW116(09-02-2014)(1430)	Groundwater	09/02/2014 14:30
S62577.04	TW101(09-02-2014)(1600)	Groundwater	09/02/2014 16:00
S62577.05	TW104(09-02-2014)(1705)	Groundwater	09/02/2014 17:05
S62577.06	RB-02(09-03-2014)	Groundwater Quality	09/03/2014 00:01
S62577.07	TW105(09-03-2014)(0825)	Groundwater	09/03/2014 08:25
S62577.08	TW107(09-03-2014)(1000)	Groundwater	09/03/2014 10:00
S62577.09	TW109(09-03-2014)(1150)	Groundwater	09/03/2014 11:50
S62577.10	TW109(09-03-2014)(1150) MS	Groundwater	09/03/2014 11:50
S62577.11	TW109(09-03-2014)(1150) MSD	Groundwater	09/03/2014 11:50

Analytical Laboratory Report

Lab Sample ID: S62577.01
Sample Tag: DUP-01(09-02-2014)
Collected Date/Time: 09/02/2014 00:01
Matrix: Groundwater Quality
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:35	JRH	7440-50-8	
Copper	0.005	mg/L	0.005	E200.8	09/05/14 10:57	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:35	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 10:57	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.02
Sample Tag: RB-01(09-02-2014)
Collected Date/Time: 09/02/2014 00:02
Matrix: Groundwater Quality
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:38	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	09/05/14 10:59	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:38	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 10:59	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.03
Sample Tag: TW116(09-02-2014)(1430)
Collected Date/Time: 09/02/2014 14:30
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	0.013	mg/L	0.005	E200.8	09/05/14 11:40	JRH	7440-50-8	
Copper	0.019	mg/L	0.005	E200.8	09/05/14 11:02	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:40	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:02	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.04
Sample Tag: TW101(09-02-2014)(1600)
Collected Date/Time: 09/02/2014 16:00
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:43	JRH	7440-50-8	
Copper	0.007	mg/L	0.005	E200.8	09/05/14 11:04	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:43	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:04	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.05
Sample Tag: TW104(09-02-2014)(1705)
Collected Date/Time: 09/02/2014 17:05
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:45	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	09/05/14 11:07	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:45	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:07	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.06
Sample Tag: RB-02(09-03-2014)
Collected Date/Time: 09/03/2014 00:01
Matrix: Groundwater Quality
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:48	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	09/05/14 11:09	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:48	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:09	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.07
Sample Tag: TW105(09-03-2014)(0825)
Collected Date/Time: 09/03/2014 08:25
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:50	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	09/05/14 11:12	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:50	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:12	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.08
Sample Tag: TW107(09-03-2014)(1000)
Collected Date/Time: 09/03/2014 10:00
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:53	JRH	7440-50-8	
Copper	0.005	mg/L	0.005	E200.8	09/05/14 11:15	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:53	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:15	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.09
Sample Tag: TW109(09-03-2014)(1150)
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:56	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	09/05/14 11:17	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	09/05/14 11:56	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	09/05/14 11:17	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.10
Sample Tag: TW109(09-03-2014)(1150) MS
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	0.251	mg/L	0.005	E200.8	09/05/14 11:58	JRH	7440-50-8	
Copper	0.248	mg/L	0.005	E200.8	09/05/14 11:20	JRH	7440-50-8	
Selenium, Dissolved	0.273	mg/L	0.005	E200.8	09/05/14 11:58	JRH	7782-49-2	
Selenium	0.271	mg/L	0.005	E200.8	09/05/14 11:20	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S62577.11
Sample Tag: TW109(09-03-2014)(1150) MSD
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.7	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metal Digestion	Completed			SW3015A	09/05/14 09:00	JRH		
Metals								
Copper, Dissolved	0.250	mg/L	0.005	E200.8	09/05/14 12:01	JRH	7440-50-8	
Copper	0.251	mg/L	0.005	E200.8	09/05/14 11:22	JRH	7440-50-8	
Selenium, Dissolved	0.272	mg/L	0.005	E200.8	09/05/14 12:01	JRH	7782-49-2	
Selenium	0.274	mg/L	0.005	E200.8	09/05/14 11:22	JRH	7782-49-2	

Quality Control Cover Page

Report ID: S62577.01(01)
Report Date: 09/05/2014
Project: RACER Romulus
Lab Sample ID(s): S62577.01-S62577.11

Report to:

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Sample ID	Sample Tag	Collected	Matrix	Analysis Departments
S62577.01	DUP-01(09-02-2014)	09/02/2014 00:01	Groundwater	Extraction / Prep., Metals
S62577.02	RB-01(09-02-2014)	09/02/2014 00:02	Groundwater	Extraction / Prep., Metals
S62577.03	TW116(09-02-2014)(1430)	09/02/2014 14:30	Groundwater	Extraction / Prep., Metals
S62577.04	TW101(09-02-2014)(1600)	09/02/2014 16:00	Groundwater	Extraction / Prep., Metals
S62577.05	TW104(09-02-2014)(1705)	09/02/2014 17:05	Groundwater	Extraction / Prep., Metals
S62577.06	RB-02(09-03-2014)	09/03/2014 00:01	Groundwater	Extraction / Prep., Metals
S62577.07	TW105(09-03-2014)(0825)	09/03/2014 08:25	Groundwater	Extraction / Prep., Metals
S62577.08	TW107(09-03-2014)(1000)	09/03/2014 10:00	Groundwater	Extraction / Prep., Metals
S62577.09	TW109(09-03-2014)(1150)	09/03/2014 11:50	Groundwater	Extraction / Prep., Metals
S62577.10	TW109(09-03-2014)(1150) MS	09/03/2014 11:50	Groundwater	Extraction / Prep., Metals
S62577.11	TW109(09-03-2014)(1150) MSD	09/03/2014 11:50	Groundwater	Extraction / Prep., Metals

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

Quality Control Report

Report ID: QC-S62577.01(01)
Generated on 09/16/2014

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S62577.01-S62577.11
Project: RACER Romulus
Submitted Date/Time: 09/04/2014 13:15
Sampled by: Eric Shirley
P.O. #: 37515-014

Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RDL.

Laboratory Certifications:
Michigan DNRE (#9956), DOD/ISO 17025 (#69699), WBENC (#2005110032), Ohio EPA (#CL0002), IN Drinking Water (#C-MI-07), NELAC NY (#11814)
Some analytes reported may not be certified. Full certification lists are available upon request.

Barbara Ball

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S62577.01
Sample Tag: DUP-01(09-02-2014)
Collected Date/Time: 09/02/2014 00:01
Matrix: Groundwater Quality
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:35	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 10:57	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:35	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 10:57	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.02
Sample Tag: RB-01(09-02-2014)
Collected Date/Time: 09/02/2014 00:02
Matrix: Groundwater Quality
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:38	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 10:59	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:38	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 10:59	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.03
Sample Tag: TW116(09-02-2014)(1430)
Collected Date/Time: 09/02/2014 14:30
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:40	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:02	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:40	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:02	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.04
Sample Tag: TW101(09-02-2014)(1600)
Collected Date/Time: 09/02/2014 16:00
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:43	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:04	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:43	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:04	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.05
Sample Tag: TW104(09-02-2014)(1705)
Collected Date/Time: 09/02/2014 17:05
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:45	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:07	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:45	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:07	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.06
Sample Tag: RB-02(09-03-2014)
Collected Date/Time: 09/03/2014 00:01
Matrix: Groundwater Quality
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:48	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:09	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:48	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:09	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S62577.07
Sample Tag: TW105(09-03-2014)(0825)
Collected Date/Time: 09/03/2014 08:25
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:50	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:12	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:50	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:12	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.08
Sample Tag: TW107(09-03-2014)(1000)
Collected Date/Time: 09/03/2014 10:00
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:53	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:15	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:53	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:15	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.09
Sample Tag: TW109(09-03-2014)(1150)
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:56	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:17	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:56	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:17	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.10
Sample Tag: TW109(09-03-2014)(1150) MS
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 11:58	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:20	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 11:58	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:20	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S62577.11
Sample Tag: TW109(09-03-2014)(1150) MSD
Collected Date/Time: 09/03/2014 11:50
Matrix: Groundwater
COC Reference: 86743

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	09/05/14 12:01	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Copper	E200.8	09/05/14 11:22	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	09/05/14 12:01	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	09/05/14 11:22	MT3-14-0905A	MTD-090514-2	No	LCS/BLK/MS/MSD

Metals, Prep Batch ID: MTD-090514-2

Surrogates: No, QC Types: LCS/BLK/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S62577.01	Copper, Dissolved	E200.8	09/05/14 11:35	MT3-14-0905A
S62577.01	Copper	E200.8	09/05/14 10:57	MT3-14-0905A
S62577.01	Selenium, Dissolved	E200.8	09/05/14 11:35	MT3-14-0905A
S62577.01	Selenium	E200.8	09/05/14 10:57	MT3-14-0905A
S62577.02	Copper, Dissolved	E200.8	09/05/14 11:38	MT3-14-0905A
S62577.02	Copper	E200.8	09/05/14 10:59	MT3-14-0905A
S62577.02	Selenium, Dissolved	E200.8	09/05/14 11:38	MT3-14-0905A
S62577.02	Selenium	E200.8	09/05/14 10:59	MT3-14-0905A
S62577.03	Copper, Dissolved	E200.8	09/05/14 11:40	MT3-14-0905A
S62577.03	Copper	E200.8	09/05/14 11:02	MT3-14-0905A
S62577.03	Selenium, Dissolved	E200.8	09/05/14 11:40	MT3-14-0905A
S62577.03	Selenium	E200.8	09/05/14 11:02	MT3-14-0905A
S62577.04	Copper, Dissolved	E200.8	09/05/14 11:43	MT3-14-0905A
S62577.04	Copper	E200.8	09/05/14 11:04	MT3-14-0905A
S62577.04	Selenium, Dissolved	E200.8	09/05/14 11:43	MT3-14-0905A
S62577.04	Selenium	E200.8	09/05/14 11:04	MT3-14-0905A
S62577.05	Copper, Dissolved	E200.8	09/05/14 11:45	MT3-14-0905A
S62577.05	Copper	E200.8	09/05/14 11:07	MT3-14-0905A
S62577.05	Selenium, Dissolved	E200.8	09/05/14 11:45	MT3-14-0905A
S62577.05	Selenium	E200.8	09/05/14 11:07	MT3-14-0905A
S62577.06	Copper, Dissolved	E200.8	09/05/14 11:48	MT3-14-0905A
S62577.06	Copper	E200.8	09/05/14 11:09	MT3-14-0905A
S62577.06	Selenium, Dissolved	E200.8	09/05/14 11:48	MT3-14-0905A
S62577.06	Selenium	E200.8	09/05/14 11:09	MT3-14-0905A
S62577.07	Copper, Dissolved	E200.8	09/05/14 11:50	MT3-14-0905A
S62577.07	Copper	E200.8	09/05/14 11:12	MT3-14-0905A
S62577.07	Selenium, Dissolved	E200.8	09/05/14 11:50	MT3-14-0905A
S62577.07	Selenium	E200.8	09/05/14 11:12	MT3-14-0905A
S62577.08	Copper, Dissolved	E200.8	09/05/14 11:53	MT3-14-0905A
S62577.08	Copper	E200.8	09/05/14 11:15	MT3-14-0905A
S62577.08	Selenium, Dissolved	E200.8	09/05/14 11:53	MT3-14-0905A
S62577.08	Selenium	E200.8	09/05/14 11:15	MT3-14-0905A
S62577.09	Copper, Dissolved	E200.8	09/05/14 11:56	MT3-14-0905A
S62577.09	Copper	E200.8	09/05/14 11:17	MT3-14-0905A
S62577.09	Selenium, Dissolved	E200.8	09/05/14 11:56	MT3-14-0905A
S62577.09	Selenium	E200.8	09/05/14 11:17	MT3-14-0905A
S62577.10	Copper, Dissolved	E200.8	09/05/14 11:58	MT3-14-0905A
S62577.10	Copper	E200.8	09/05/14 11:20	MT3-14-0905A
S62577.10	Selenium, Dissolved	E200.8	09/05/14 11:58	MT3-14-0905A
S62577.10	Selenium	E200.8	09/05/14 11:20	MT3-14-0905A
S62577.11	Copper, Dissolved	E200.8	09/05/14 12:01	MT3-14-0905A
S62577.11	Copper	E200.8	09/05/14 11:22	MT3-14-0905A
S62577.11	Selenium, Dissolved	E200.8	09/05/14 12:01	MT3-14-0905A
S62577.11	Selenium	E200.8	09/05/14 11:22	MT3-14-0905A

Form 0: Sequence Log

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Filename	*Run Time*	*Sample ID*	*Matrix*	*QC Type*
001	Sep 5 2014 09:50 am	blk	Liquid	
002	Sep 5 2014 09:52 am	0.00	Liquid	
003	Sep 5 2014 09:55 am	0.0005	Liquid	
004	Sep 5 2014 10:33 am	0.001	Liquid	
005	Sep 5 2014 10:00 am	0.005	Liquid	
006	Sep 5 2014 10:03 am	0.02	Liquid	
007	Sep 5 2014 10:05 am	0.05	Liquid	
008	Sep 5 2014 10:08 am	0.20	Liquid	
009	Sep 5 2014 10:10 am	ICV-0.10	Liquid	ICV
010	Sep 5 2014 10:13 am	08/25 CCV1-0.10	Liquid	CCV
011	Sep 5 2014 10:16 am	Rinse	Liquid	
012	Sep 5 2014 10:19 am	08/25 CCB1	Liquid	CCB
013	Sep 5 2014 10:22 am	ICB	Liquid	ICB
014	Sep 5 2014 10:24 am	BS-0.0005	Liquid	BS
015	Sep 5 2014 10:27 am	BS-0.001	Liquid	BS
016	Sep 5 2014 10:36 am	BS-0.002	Liquid	BS
017	Sep 5 2014 10:39 am	ERA-5/1 8141-04	Liquid	ERA
018	Sep 5 2014 10:41 am	Soln-AB	Liquid	AB
019	Sep 5 2014 10:44 am	Soln-AA	Liquid	AA
020	Sep 5 2014 10:52 am	09/05 LCS2-0.05	Liquid	LCS
021	Sep 5 2014 10:49 am	Rinse	Liquid	
022	Sep 5 2014 10:54 am	09/05 LRB2	Liquid	LRB
023	Sep 5 2014 10:57 am	62577.01s tot	Liquid	S
024	Sep 5 2014 10:59 am	62577.02s tot	Liquid	S
025	Sep 5 2014 11:02 am	62577.03s tot	Liquid	S
026	Sep 5 2014 11:04 am	62577.04s tot	Liquid	S
027	Sep 5 2014 11:07 am	62577.05s tot	Liquid	S
028	Sep 5 2014 11:09 am	62577.06s tot	Liquid	S
029	Sep 5 2014 11:12 am	62577.07s tot	Liquid	S
030	Sep 5 2014 11:15 am	62577.08s tot	Liquid	S
031	Sep 5 2014 11:17 am	62577.09s tot	Liquid	S
032	Sep 5 2014 11:20 am	62577.10s tot MS-0.05	Liquid	MS
033	Sep 5 2014 11:22 am	62577.11s tot MSD-0.05	Liquid	MSD
034	Sep 5 2014 11:25 am	08/25 CCV2-0.10	Liquid	CCV
035	Sep 5 2014 11:27 am	Rinse	Liquid	
036	Sep 5 2014 11:30 am	08/25 CCB2	Liquid	CCB
037	Sep 5 2014 11:33 am	62577.01 dis dil	Liquid	DIL
038	Sep 5 2014 11:35 am	62577.01s dis	Liquid	S
039	Sep 5 2014 11:38 am	62577.02s dis	Liquid	S
040	Sep 5 2014 11:40 am	62577.03s dis	Liquid	S
041	Sep 5 2014 11:43 am	62577.04s dis	Liquid	S
042	Sep 5 2014 11:45 am	62577.05s dis	Liquid	S
043	Sep 5 2014 11:48 am	62577.06s dis	Liquid	S
044	Sep 5 2014 11:50 am	62577.07s dis	Liquid	S
045	Sep 5 2014 11:53 am	62577.08s dis	Liquid	S
046	Sep 5 2014 11:56 am	62577.09s dis	Liquid	S
047	Sep 5 2014 11:58 am	62577.10s dis MS-0.05	Liquid	MS
048	Sep 5 2014 12:01 pm	62577.11s dis MSD-0.05	Liquid	MSD
049	Sep 5 2014 12:03 pm	08/25 CCV3-0.10	Liquid	CCV
050	Sep 5 2014 12:06 pm	Rinse	Liquid	
051	Sep 5 2014 12:09 pm	08/25 CCB3	Liquid	CCB

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.01
Sample Tag: DUP-01(09-02-2014)
Date Collected: 09/02/2014
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.005	0.005	0.00093	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.02
Sample Tag: RB-01(09-02-2014)
Date Collected: 09/02/2014
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.03
Sample Tag: TW116(09-02-2014)(1430)
Date Collected: 09/02/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.019	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	0.013	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.04
Sample Tag: TW101(09-02-2014)(1600)
Date Collected: 09/02/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.007	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.05
Sample Tag: TW104(09-02-2014)(1705)
Date Collected: 09/02/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.06
Sample Tag: RB-02(09-03-2014)
Date Collected: 09/03/2014
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.07
Sample Tag: TW105(09-03-2014)(0825)
Date Collected: 09/03/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.08
Sample Tag: TW107(09-03-2014)(1000)
Date Collected: 09/03/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.005	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.09
Sample Tag: TW109(09-03-2014)(1150)
Date Collected: 09/03/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.10
Sample Tag: TW109(09-03-2014)(1150) MS
Date Collected: 09/03/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.248	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	0.271	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	0.251	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	0.273	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Lab Sample ID: S62577.11
Sample Tag: TW109(09-03-2014)(1150) MSD
Date Collected: 09/03/2014
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.251	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium	0.274	0.005	0.00048	mg/L	5	09/05/2014	
7440-50-8	Copper, Dissolved	0.250	0.005	0.00019	mg/L	5	09/05/2014	
7782-49-2	Selenium, Dissolved	0.272	0.005	0.00048	mg/L	5	09/05/2014	

Form 1: Metals Analysis Data Sheet - Flag Description Key

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Note/Qualifier Key	
m	Duplicate injection precision not met
n	Spiked sample recovery outside control limits
s	Reported value determined by the MSA
u	Analyte not detected above reporting limit
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
A	TIC is a suspected aldol-condensation product
C	Analyte presence confirmed by GC/MS
D	Identified in an analysis at a secondary dilution factor
N	Presumptive evidence of TIC
P	Pesticide/Aroclor 2-column RPD exceeds limit
U	Analyte not detected above reporting limit
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
J	Estimated value less than reporting limit, but greater than MDL
Q	Reported result represents most abundant aroclor
V	Accurate value not available due to presence of multiple aroclors
W	Surrogate result not applicable due to sample dilution
Z	Estimated result due to matrix interference
!	Result is outside of stated limit criteria
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
K	Elevated reporting limit due to low total solids
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Form 2A: Initial and Continuing Calibration Verification

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
009 ICV-0.10	ICV	1.000	Cu	0.0996	0.10	100	90/110	mg/L	Liquid
			Se	0.100	0.10	100	90/110		
010 08/25 CCV1-0.10	CCV	1.000	Cu	0.0989	0.10	99	90/110	mg/L	Liquid
			Se	0.0973	0.10	97	90/110		
034 08/25 CCV2-0.10	CCV	1.000	Cu	0.0982	0.10	98	90/110	mg/L	Liquid
			Se	0.0967	0.10	97	90/110		
049 08/25 CCV3-0.10	CCV	1.000	Cu	0.0973	0.10	97	90/110	mg/L	Liquid
			Se	0.0964	0.10	96	90/110		

Form 2B: Performance Sample Evaluation

ERA Lot No.: 8131-04

Data Set ID: MT3-14-0905A

Instrument ID: HP ICP/MS 2

Analysis Date: 09/05/14

Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*Lower Accept*	*Upper Accept*	*Units*	*Matrix*
017 ERA-5/1 8141-04	5.000	Cu	0.430	0.443	97	0.377	0.510	mg/L	Liquid
		Se	0.900	0.928	97	0.788	1.070		

Form 3: Blanks

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Raw Conc*	*Units*	*Matrix*
012 08/25 CCB1	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0001406		
013 ICB	ICB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.00008921		
022 09/05 LRB2	LRB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0003808		
036 08/25 CCB2	CCB	1.000	Cu	<0.001	0.00003249	mg/L	Liquid
			Se	<0.001	0.0002990		
051 08/25 CCB3	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0002972		

Form 4B: ICP Interference Check Sample

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
018 Soln-AB	AB	1.000	Cu	0.0206	0.02	103	70/135	mg/L	Liquid
019 Soln-AA	AA	1.000	Cu	<0.0008	0.0	N/A	N/A	mg/L	Liquid
			Se	<0.001	0.0	N/A	N/A		

Form 5A: Matrix Spike Sample Recovery

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Spike Name	Sample Name	Dilute	Element	Spike Conc	Sample Conc	Spike Amount	%Rec	LCL/UCL	Units	Matrix
014 BS-0.0005		1.000	Cu	0.00050	ND	0.0005	100	70/130	mg/L	Liquid
015 BS-0.001		1.000	Cu	0.00103	ND	0.001	103	70/130	mg/L	Liquid
			Se	0.00103	ND	0.001	103	70/130		
016 BS-0.002		1.000	Cu	0.00217	ND	0.002	109	70/130	mg/L	Liquid
			Se	0.00222	ND	0.002	111	70/130		
032 62577.10s tot	**046 62577.09s dis**	5.000	Cu	0.248	<0.005	0.25	99	75/125	mg/L	Liquid
			Se	0.271	<0.005	0.25	108	75/125		
047 62577.10s dis	**031 62577.09s tot**	5.000	Cu	0.251	<0.005	0.25	100	75/125	mg/L	Liquid
			Se	0.273	<0.005	0.25	109	75/125		

Form 5B: Matrix Spike Duplicate Evaluation

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Duplicate Name	Sample Name	Dilute	Element	Dup Conc	Samp Conc	%RPD	LCL/UCL	Units	Matrix
033 62577.11s tot	**032 62577.10s tot**	5.000	Cu	0.251	0.248	1	0/20	mg/L	Liquid
			Se	0.274	0.271	1	0/20		
048 62577.11s dis	**047 62577.10s dis**	5.000	Cu	0.250	0.251	0	0/20	mg/L	Liquid
			Se	0.272	0.273	0	0/20		

Form 7: Laboratory Control Sample

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
020 09/05 LCS2-0.05	1.000	Cu	0.0491	0.05	98	85/115	mg/L	Liquid
		Se	0.0498	0.05	100	85/115		

Form 8: Serial Dilutions

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Duplicate Name	Sample Name	Dilute	Element	Dup Conc	Samp Conc	%D	LCL/UCL	Units	Matrix
037 62577.01 dis	**038 62577.01s dis**	25.00	Cu	0.00320	<0.005	NC	0/10	mg/L	Liquid
			Se	0.00689	<0.005	NC	0/10		

Serial Dilution test not applicable if measured sample concentration is < 100 x MDL.

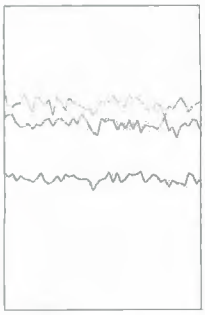
Form 13: Analysis Run Log

Data Set ID: MT3-14-0905A
Instrument ID: HP ICP/MS 2
Analysis Date: 09/05/14
Analyst: JRH

Filename	*Run Time*	*Matrix*	*Analytes*
001 blk	Sep 5 2014 09:50 am	Liquid	
002 0.00	Sep 5 2014 09:52 am	Liquid	
003 0.0005	Sep 5 2014 09:55 am	Liquid	
004 0.001	Sep 5 2014 10:33 am	Liquid	
005 0.005	Sep 5 2014 10:00 am	Liquid	
006 0.02	Sep 5 2014 10:03 am	Liquid	
007 0.05	Sep 5 2014 10:05 am	Liquid	
008 0.20	Sep 5 2014 10:08 am	Liquid	
009 ICV-0.10	Sep 5 2014 10:10 am	Liquid	
010 08/25 CCV1-0.10	Sep 5 2014 10:13 am	Liquid	
011 Rinse	Sep 5 2014 10:16 am	Liquid	
012 08/25 CCB1	Sep 5 2014 10:19 am	Liquid	
013 ICB	Sep 5 2014 10:22 am	Liquid	
014 BS-0.0005	Sep 5 2014 10:24 am	Liquid	
015 BS-0.001	Sep 5 2014 10:27 am	Liquid	
016 BS-0.002	Sep 5 2014 10:36 am	Liquid	
017 ERA-5/1 8141-04	Sep 5 2014 10:39 am	Liquid	
018 Soln-AB	Sep 5 2014 10:41 am	Liquid	
019 Soln-AA	Sep 5 2014 10:44 am	Liquid	
020 09/05 LCS2-0.05	Sep 5 2014 10:52 am	Liquid	
021 Rinse	Sep 5 2014 10:49 am	Liquid	
022 09/05 LRB2	Sep 5 2014 10:54 am	Liquid	
023 62577.01s tot	Sep 5 2014 10:57 am	Liquid	
024 62577.02s tot	Sep 5 2014 10:59 am	Liquid	
025 62577.03s tot	Sep 5 2014 11:02 am	Liquid	
026 62577.04s tot	Sep 5 2014 11:04 am	Liquid	
027 62577.05s tot	Sep 5 2014 11:07 am	Liquid	
028 62577.06s tot	Sep 5 2014 11:09 am	Liquid	
029 62577.07s tot	Sep 5 2014 11:12 am	Liquid	
030 62577.08s tot	Sep 5 2014 11:15 am	Liquid	
031 62577.09s tot	Sep 5 2014 11:17 am	Liquid	
032 62577.10s tot MS-0.05	Sep 5 2014 11:20 am	Liquid	
033 62577.11s tot MSD-0.05	Sep 5 2014 11:22 am	Liquid	
034 08/25 CCV2-0.10	Sep 5 2014 11:25 am	Liquid	
035 Rinse	Sep 5 2014 11:27 am	Liquid	
036 08/25 CCB2	Sep 5 2014 11:30 am	Liquid	
037 62577.01 dis dil	Sep 5 2014 11:33 am	Liquid	
038 62577.01s dis	Sep 5 2014 11:35 am	Liquid	
039 62577.02s dis	Sep 5 2014 11:38 am	Liquid	
040 62577.03s dis	Sep 5 2014 11:40 am	Liquid	
041 62577.04s dis	Sep 5 2014 11:43 am	Liquid	
042 62577.05s dis	Sep 5 2014 11:45 am	Liquid	
043 62577.06s dis	Sep 5 2014 11:48 am	Liquid	
044 62577.07s dis	Sep 5 2014 11:50 am	Liquid	
045 62577.08s dis	Sep 5 2014 11:53 am	Liquid	
046 62577.09s dis	Sep 5 2014 11:56 am	Liquid	
047 62577.10s dis MS-0.05	Sep 5 2014 11:58 am	Liquid	
048 62577.11s dis MSD-0.05	Sep 5 2014 12:01 pm	Liquid	
049 08/25 CCV3-0.10	Sep 5 2014 12:03 pm	Liquid	
050 Rinse	Sep 5 2014 12:06 pm	Liquid	
051 08/25 CCB3	Sep 5 2014 12:09 pm	Liquid	

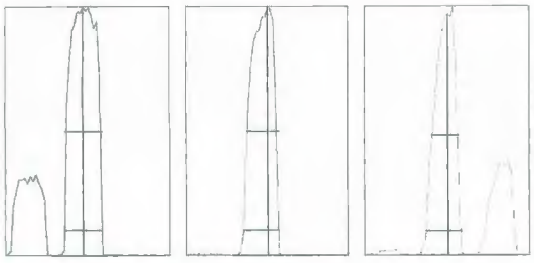
Tune Report

Tune File : nogas.u
Comment :



m/z	Range	Count	Mean	RSD%	Background
7	5,000	2159.0	2160.3	3.31	5.40
89	10,000	5858.0	6106.4	2.90	2.60
205	5,000	3415.0	3377.5	2.79	3.00

Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 50
Oxide: 156/140 0.983%
Doubly Charged: 70/140 0.982%



m/z:	7	89	205
Height:	2,194	6,375	3,555
Axis:	6.95	89.05	205.05
W-50%:	0.70	0.60	0.50
W-10%:	0.700	0.6500	0.6500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec
Y axis : Linear

===Plasma Condition===		===Ion Lenses===		===Q-Pole Parameters===	
RF Power :	1500 W	Extract 1 :	-55 V	AMU Gain :	132
RF Matching :	1.75 V	Extract 2 :	-99 V	AMU Offset :	124
Smpl Depth :	9.4 mm	Omega Bias-ce :	-20 V	Axis Gain :	0.9997
Torch-H :	0.7 mm	Omega Lens-ce :	1 V	Axis Offset :	-0.06
Torch-V :	0.4 mm	Cell Entrance :	-30 V	QP Bias :	-3 V
Carrier Gas :	0.77 L/min	QP Focus :	3 V		
Makeup Gas :	0.1 L/min	Cell Exit :	-34 V	===Detector Parameters===	
Optional Gas :	0 %			Discriminator :	8 mV
Nebulizer Pump :	0.1 rps	===Octopole Parameters===		Analog HV :	1810 V
Sample Pump :	--- rps	OctP RF :	187 V	Pulse HV :	1460 V
S/C Temp :	2 degC	OctP Bias :	-6 V		

===Reaction Cell===
Reaction Mode : OFF
H2 Gas : 0 mL/min He Gas : 0 mL/min Optional Gas : 0 %

Tune File : he.u

He Gas:	2.8 mL/min	m/z	Count(Mean)	RSD%	Integration Time: 0.1000sec
Optional Gas:	0 %	51	47.4	15.50	
QP Focus:	-7 V	59	2010.7	3.27	
Cell Exit:	-40 V	89	2062.1	3.28	
OctP Bias:	-18 V				
QP Bias:	-13 V				

Tune File : h2.u

H2 Gas:	1.6 mL/min	m/z	Count(Mean)	RSD%	Integration Time: 0.1000sec
Optional Gas:	0 %	59	4065.7	3.41	
QP Focus:	-8 V	78	3.1	57.28	
Cell Exit:	-40 V	89	6609.5	2.61	
OctP Bias:	-18 V				
QP Bias:	-15 V				

Generated : Sep 05, 2014 09:28:09
Printed : Sep 05, 2014 09:29:49

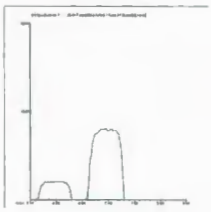
6020 and 200.8 Tune Check Sample

Data File: 0016TUN.D
Date Acquired: Sep 5 2014 09:33 am
Operator:
Sample Name: 10ppb Li, Co, In, Tl
Misc Info: EPA tune solution
Vial Number: 4106
Current Method: TN_62_28.M

QC Tune Summary:
Pass

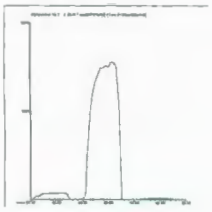
RSD%

Element	Actual	Required	Flag
7 Li	1.69	5.00	0
9 Be	1.54	5.00	
59 Co	1.04	5.00	
115 In	1.52	5.00	
205 Tl	1.26	5.00	
208 Pb	1.97	5.00	

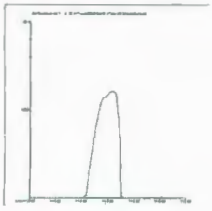


7 Li
Mass Calib.
Actual: 6.95
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

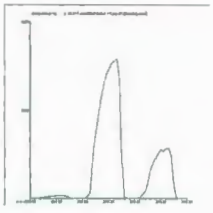
9 Be
Mass Calib.
Actual: 9.00
Required 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.05
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-14-0905A

Instrument ID: HP ICP/MS 2

Analysis Date: 09/05/14

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	301458	70-125	211021-376823	80-120	241166-361750	0
Rh-2	203505	70-125	142454-254381	80-120	162804-244206	0

Seq ID	QC Type	Rh-1	Rh-2
001		100	100
002		99	103
003		100	103
004		99	103
005		101	105
006		100	104
007		100	103
008		98	102
009	ICV	99	102
010	CCV	100	105
011		98	103
012	CCB	98	103
013	ICB	99	104
014	BS	99	104
015	BS	99	103
016	BS	102	107
017	ERA	102	106
018	AB	101	106
019	AA	95	101
020	LCS	100	105
021		100	105
022	LRB	98	102
023	S	96	100
024	S	99	103
025	S	96	101
026	S	94	100
027	S	95	101
028	S	99	103
029	S	95	99
030	S	94	99
031	S	94	99
032	MS	95	99
033	MSD	94	98
034	CCV	102	104
035		99	104
036	CCB	98	104
037	DIL	97	102

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-14-0905A

Instrument ID: HP ICP/MS 2

Analysis Date: 09/05/14

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	301458	70-125	211021-376823	80-120	241166-361750	0
Rh-2	203505	70-125	142454-254381	80-120	162804-244206	0

Seq ID	QC Type	Rh-1	Rh-2
038	S	92	97
039	S	97	103
040	S	94	100
041	S	94	95
042	S	95	100
043	S	98	102
044	S	92	98
045	S	94	99
046	S	95	98
047	MS	94	98
048	MSD	93	98
049	CCV	101	106
050		98	104
051	CCB	98	104

Form 9

Analysis Date	varies	
Analytical Method	6020A/6020/200.8	
Digestion Date	varies	
Spiked Value	varies	(ug/L)
Estimated Limit	varies	(ug/L)

Element/Mass	Date	Spike (ug/l)	MDL (ug/l)	Prep Batch
Al-27	4/9/2012	0.50	0.189	MTD-040212-1
Sb-121	3/20/2012	1.00	0.105	MTD-032012-3
As-75	3/20/2012	0.05	0.032	MTD-032012-2
Ba-137	3/20/2012	0.50	0.202	MTD-032012-2
Be-9	4/10/2012	0.10	0.079	MTD-041012-1
B-10	3/20/2012	1.00	0.589	MTD-032012-3
B-11	3/20/2012	1.00	0.277	MTD-032012-3
Cd-111	3/20/2012	0.05	0.038	MTD-032012-2
Cd-114	3/20/2012	0.10	0.030	MTD-032012-2
Cr-52	3/20/2012	0.10	0.023	MTD-032012-2
Cr-53	3/20/2012	0.10	0.054	MTD-032012-2
Co-59	3/20/2012	0.10	0.035	MTD-032012-2
Cu-65	3/20/2012	0.50	0.068	MTD-032012-2
Fe-56	4/9/2012	2.00	0.470	MTD-040912-1
Fe-57	4/9/2012	2.00	0.824	MTD-040912-1
Pb-208	3/20/2012	0.10	0.052	MTD-032012-2
Li-7	3/20/2012	1.00	0.166	MTD-032012-3
Mn-55	3/20/2012	0.10	0.187	MTD-032012-2
Mo-95	4/9/2012	0.50	0.442	MTD-040212-1
Ni-60	4/13/2012	0.10	0.035	MTD-041012-1
Se-78	3/20/2012	0.10	0.058	MTD-032012-2
Se-82	3/20/2012	0.50	0.475	MTD-032012-2
Ag-107	3/20/2012	0.10	0.025	MTD-032012-2
Sr-88	3/20/2012	0.10	0.016	MTD-032012-2
Tl-205	4/9/2012	0.50	0.089	MTD-040212-1
Sn-118	3/20/2012	0.10	0.079	MTD-032012-2
Ti-47	3/20/2012	0.50	0.124	MTD-032012-2
V-51	3/20/2012	0.05	0.018	MTD-032012-2
Zn-66	4/9/2012	2.00	0.366	MTD-040912-1

Element/Mass	Date	Spike (mg/l)	MDL (mg/l)	Prep Batch
Ca-43	4/16/2012	0.01	0.0101	MTD-041012-4
Ca-44	4/16/2012	0.01	0.0041	MTD-041012-4
Mg-24	4/16/2012	0.01	0.0006	MTD-041012-4
K-39	4/16/2012	0.01	0.0030	MTD-041012-4
Na-23	4/16/2012	0.10	0.0101	MTD-041012-4

Linear Range June 2012

		Prep Batch	Run Batch
Aluminum	5.0ppm	MTD-061912-5	MT3-12-0619C
Antimony	5.0ppm	MTD-061912-5	MT3-12-0619C
Arsenic	1.0ppm	MTD-061912-5	MT3-12-0619C
Barium	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-10	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-11	5.0ppm	MTD-061912-5	MT3-12-0619C
Beryllium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-111	5.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-114	5.0ppm	MTD-061912-5	MT3-12-0619C
Chromium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cobalt	2.0ppm	MTD-061912-5	MT3-12-0619C
Copper	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-56	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-57	2.0ppm	MTD-061912-5	MT3-12-0619C
Lead	5.0ppm	MTD-061912-5	MT3-12-0619C
Lithium	2.0ppm	MTD-061912-5	MT3-12-0619C
Manganese	1.0ppm	MTD-061912-5	MT3-12-0619C
Molybdenum	1.0ppm	MTD-061912-5	MT3-12-0619C
Nickel	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-78	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-82	5.0ppm	MTD-061912-5	MT3-12-0619C
Silver	1.0ppm	MTD-061912-5	MT3-12-0619C
Strontium-86	5.0ppm	MTD-061912-5	MT3-12-0619C
Thallium	5.0ppm	MTD-061912-5	MT3-12-0619C
Tin	1.0ppm	MTD-061912-5	MT3-12-0619C
Titanium	1.0ppm	MTD-061912-5	MT3-12-0619C
Vanadium	1.0ppm	MTD-061912-5	MT3-12-0619C
Zinc	2.0ppm	MTD-061912-5	MT3-12-0619C

Sodium-23	50ppm	MTD-061912-5	MT3-12-0619B
Magnesium-24	50ppm	MTD-061912-5	MT3-12-0619B
Potassium-39	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-43	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-44	50ppm	MTD-061912-5	MT3-12-0619B

Maximum spiking levels are instated to ensure the safety and longevity of the instrument. Any sample results above this level result in extended wash runs and sample dilution.

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 001SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 09:50 am
Sample Name: blk
Sample Type: CalBlk
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000195910	<0.000	mg/L	52.76	2
Se	78	103	.0000022983	0.00009799	mg/L	64.29	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 002SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 09:52 am
Sample Name: 0.00
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000220640	<0.000	mg/L	4.2E+8	2
Se	78	103	.0000014864	.0000000000	mg/L	2.0E+9	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 003SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 09:55 am
Sample Name: 0.0005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000588920	0.0004457	mg/L	9.42	2
Se	78	103	.0000050873	0.0004346	mg/L	15.48	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 004SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:33 am
Sample Name: 0.001
Sample Type: CalStd
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001076630	0.001036	mg/L	4.70	2
Se	78	103	.0000089076	0.0009580	mg/L	23.48	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 005SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:00 am
Sample Name: 0.005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0004838773	0.005589	mg/L	1.83	2
Se	78	103	.0000421165	0.004904	mg/L	8.36	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 006SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:03 am
Sample Name: 0.02
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001664140	0.01987	mg/L	1.47	2
Se	78	103	.0001582264	0.01892	mg/L	2.77	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 007SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:05 am
Sample Name: 0.05
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004165551	0.05015	mg/L	1.00	2
Se	78	103	.0003812517	0.04583	mg/L	1.28	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 008SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:08 am
Sample Name: 0.20
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.01654416	0.2000	mg/L	0.22	2
Se	78	103	0.001552398	0.1872	mg/L	1.12	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 009SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:10 am
Sample Name: ICV-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.008258069	0.09968	mg/L	0.69	2
Se	78	103	.0007818027	0.1007	mg/L	0.56	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 010SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:13 am
Sample Name: 08/25 CCV1-0.10
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.008193774	0.09890	mg/L	0.18	2
Se	78	103	.0007557010	0.09736	mg/L	0.53	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 011SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:16 am
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000214707	<0.000	mg/L	166.30	2
Se	78	103	.0000052392	0.0004845	mg/L	18.28	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 012SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:19 am
Sample Name: 08/25 CCB1
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000188848	<0.000	mg/L	90.43	2
Se	78	103	.0000025757	0.0001406	mg/L	15.36	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 013SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:22 am
Sample Name: ICB
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000173041	<0.000	mg/L	42.64	2
Se	78	103	.0000021775	0.00008921	mg/L	253.90	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 014SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:24 am
Sample Name: BS-0.0005
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000637580	0.0005046	mg/L	4.37	2

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 015SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:27 am
Sample Name: BS-0.001
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001071405	0.001030	mg/L	2.34	2
Se	78	103	.0000094867	0.001033	mg/L	4.27	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 016SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:36 am
Sample Name: BS-0.002
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002015388	0.002172	mg/L	4.91	2
Se	78	103	.0000186892	0.002221	mg/L	2.02	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 017SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:39 am
Sample Name: ERA-5/1 8141-04
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007143001	0.4309	mg/L	0.72	2
Se	78	103	0.001396368	0.9004	mg/L	1.47	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 018SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:41 am
Sample Name: Soln-AB
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001727689	0.02064	mg/L	1.29	2

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 019SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:44 am
Sample Name: Soln-AA
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 082514
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000640641	0.0005083	mg/L	25.20	2
Se	78	103	.0000053410	0.0004976	mg/L	23.41	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 020SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:52 am
Sample Name: 09/05 LCS2-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004080764	0.04912	mg/L	0.78	2
Se	78	103	.0003877753	0.04987	mg/L	1.89	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 021SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:49 am
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000195838	<0.000	mg/L	82.24	2
Se	78	103	.0000045287	0.0003927	mg/L	22.31	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 022SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:54 am
Sample Name: 09/05 LRB2
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000201754	<0.000	mg/L	69.54	2
Se	78	103	.0000044359	0.0003808	mg/L	15.84	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 023SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:57 am
Sample Name: 62577.01s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001120540	0.005446	mg/L	3.30	2
Se	78	103	.0000039484	0.001589	mg/L	34.54	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 024SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 10:59 am
Sample Name: 62577.02s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000340240	0.0007237	mg/L	36.06	2
Se	78	103	.0000034530	0.001269	mg/L	30.05	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 025SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:02 am
Sample Name: 62577.03s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0003376361	0.01910	mg/L	4.26	2
Se	78	103	.0000050316	0.002288	mg/L	39.53	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 026SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:04 am
Sample Name: 62577.04s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001303143	0.006551	mg/L	4.80	2
Se	78	103	.0000040178	0.001634	mg/L	43.21	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 027SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:07 am
Sample Name: 62577.05s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000391619	0.001035	mg/L	12.72	2
Se	78	103	.0000036078	0.001369	mg/L	52.78	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 028SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:09 am
Sample Name: 62577.06s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000365943	0.0008793	mg/L	4.06	2
Se	78	103	.0000025980	0.0007175	mg/L	25.81	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 029SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:12 am
Sample Name: 62577.07s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000606672	0.002336	mg/L	9.25	2
Se	78	103	.0000045695	0.001990	mg/L	20.32	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 030SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:15 am
Sample Name: 62577.08s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001115227	0.005413	mg/L	13.16	2
Se	78	103	.0000050713	0.002314	mg/L	39.45	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 031SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:17 am
Sample Name: 62577.09s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000483712	0.001592	mg/L	2.79	2
Se	78	103	.0000042988	0.001815	mg/L	15.90	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 032SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:20 am
Sample Name: 62577.10s tot MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004122683	0.2481	mg/L	1.01	2
Se	78	103	.0004214367	0.2711	mg/L	2.12	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 033SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:22 am
Sample Name: 62577.11s tot MSD-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004184990	0.2519	mg/L	0.63	2
Se	78	103	.0004273195	0.2749	mg/L	0.99	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 034SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:25 am
Sample Name: 08/25 CCV2-0.10
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.008142265	0.09828	mg/L	0.61	2
Se	78	103	.0007508299	0.09674	mg/L	1.52	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 035SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:27 am
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000202376	<0.000	mg/L	108.14	2
Se	78	103	.0000045580	0.0003965	mg/L	26.08	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 036SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:30 am
Sample Name: 08/25 CCB2
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000247490	0.00003249	mg/L	60.02	2
Se	78	103	.0000038027	0.0002990	mg/L	65.45	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 037SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:33 am
Sample Name: 62577.01 dis dil
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 25.00

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000326654	0.003208	mg/L	11.25	2
Se	78	103	.0000036214	0.006890	mg/L	10.64	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 038SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:35 am
Sample Name: 62577.01s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000897885	0.004098	mg/L	6.13	2
Se	78	103	.0000035625	0.001340	mg/L	9.62	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 039SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:38 am
Sample Name: 62577.02s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000326612	0.0006413	mg/L	34.79	2
Se	78	103	.0000031741	0.001089	mg/L	24.71	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 040SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:40 am
Sample Name: 62577.03s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002387833	0.01311	mg/L	7.07	2
Se	78	103	.0000028960	0.0009098	mg/L	63.86	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 041SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:43 am
Sample Name: 62577.04s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000893356	0.004071	mg/L	8.24	2
Se	78	103	.0000033446	0.001199	mg/L	19.57	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 042SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:45 am
Sample Name: 62577.05s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000243201	0.0001365	mg/L	154.21	2
Se	78	103	.0000032821	0.001159	mg/L	16.47	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 043SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:48 am
Sample Name: 62577.06s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000368314	0.0008936	mg/L	6.69	2
Se	78	103	.0000025952	0.0007156	mg/L	110.17	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 044SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:50 am
Sample Name: 62577.07s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000261251	0.0002458	mg/L	43.69	2
Se	78	103	.0000058858	0.002840	mg/L	1.41	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 045SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:53 am
Sample Name: 62577.08s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000986547	0.004635	mg/L	5.65	2
Se	78	103	.0000052916	0.002456	mg/L	12.73	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 046SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:56 am
Sample Name: 62577.09s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000292068	0.0004322	mg/L	52.43	2
Se	78	103	.0000050651	0.002310	mg/L	28.35	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 047SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 11:58 am
Sample Name: 62577.10s dis MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004180315	0.2516	mg/L	0.91	2
Se	78	103	.0004255651	0.2737	mg/L	0.88	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 048SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 12:01 pm
Sample Name: 62577.11s dis MSD-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.004159110	0.2503	mg/L	0.82	2
Se	78	103	.0004241974	0.2728	mg/L	2.21	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 049SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 12:03 pm
Sample Name: 08/25 CCV3-0.10
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.008062133	0.09731	mg/L	0.77	2
Se	78	103	.0007486157	0.09645	mg/L	1.58	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 050SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 12:06 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000224966	0.000005236	mg/L	272.54	2
Se	78	103	.0000047316	0.0004189	mg/L	40.08	1

Data Set: MT3-14-0905A
Run Date: 09/05/14

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 051SMPL.D#
Method: 02-CuSe.M
Acq Time: Sep 5 2014 12:09 pm
Sample Name: 08/25 CCB3
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 082514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-090514-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000198092	<0.000	mg/L	90.58	2
Se	78	103	.0000037890	0.0002972	mg/L	32.08	1

Metals Digestion

3015A \ 3050B

DATE 09/05/14

TIME START 9:00

ANALYST JRH

TIME FINISH 9:30

PREP BATCH MTD- 090514-2

SAMPLE#	BTL ID	SAMPLE AMOUNT GRAMS (g)	FINAL VOLUME (ml)	REMARKS	% TOTAL SOLIDS	DILUTION FACTOR
LCS 090514-2	----	50	50		—	1
LRB-090514-2	----	50	50		—	1
62577.01		10	1	total		5
02						
03						
04						
05						
06						
07						
08						
09						
10 MS						
11 MSD						
01				dissolved		
02						
03						
04						
05						
06						
07						
08						
09						
10 MS						
11 MSD						

NOTES: *1) Spike values (unless otherwise stated):*
LCS = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution
Samples: Water = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution
Soil = 0.10 ppm = 50 mls / 1.0 mls of 5ppm Spiking Solution
Spiking Solution – Date Prepared: 9/2/14

2) Spike values for minerals (Ca-Mg-K-Na)
LCS = 1.0 ppm = 50 mls / 0.50 mls HM Stock Solution
Samples (Water or Soil) = 2.0 ppm = 50 mls / 1.0 mls HM Stock Solution
High Purity Stock Solution (HM)- Lot # 1326645

3) HNO_3 Lot # 84115 (JT Baker)

4) Centrifuge Tube Lot # 140323-060 (Thomas Scientific)

5) Balance ID: M2

Reviewed by BB *On* 9/10/14

Merit Laboratories, Inc.

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www.meritlabs.com

C.O.C. PAGE # 1 OF 1

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CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Susan Hoertt
COMPANY: Haley & Aldrich
ADDRESS: 8899 Gander Creek Dr
CITY: Miamisburg | STATE: OH | ZIP CODE: 45342
PHONE NO.: 937-384-9940 | FAX NO.: 937-384-9946 | P.O. NO.: 37515-014
E-MAIL ADDRESS: Shoert@haleyaldrich.com/CKorch@haleyaldrich.com | QUOTE NO.:

INVOICE TO

CONTACT NAME | ☒ SAME
COMPANY
ADDRESS
CITY | STATE | ZIP CODE
PHONE NO. | E-MAIL ADDRESS

PROJECT NO./NAME: RACER Romulus
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Eric Shirley

TURNAROUND TIME REQUIRED ☒ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	TOTAL COPPER	TOTAL SELENIUM	DISSOLVED COPPER	DISSOLVED SELENIUM	Special Instructions
62577.01	9/2/14	0001	DUP-01 (09-02-2014)	GWQ	2			2					X	X	X	X	FD
.02		0002	RB-01 (09-02-2014)	GWQ	2			2					X	X	X	X	RB
.03		1430	TW116 (09-02-2014) (1430)	GW	2			2					X	X	X	X	N
.04		1600	TW101 (09-02-2014) (1600)	GW	2			2					X	X	X	X	N
.05		1705	TW104 (09-02-2014) (1705)	GW	2			2					X	X	X	X	N
.06	9/3/14	0001	RB-02 (09-03-2014)	GWQ	2			2					X	X	X	X	RB
.07		0825	TW105 (09-03-2014) (0825)	GW	2			2					X	X	X	X	N
.08		1000	TW107 (09-03-2014) (1000)	GW	2			2					X	X	X	X	N
.09/.10/.11		1150	TW109 (09-03-2014) (1150)	GW	6			6					X	X	X	X	MS/MSD + N

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☒ Sampler H&A	DATE 9/4/14	TIME 940
RECEIVED BY: SIGNATURE/ORGANIZATION	MEI	DATE 9.4.14	TIME 940
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION	MEI	9.4.14 DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	Karen Geasey	DATE 9/4/14	TIME 1315

SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS
SEAL NO. | SEAL INTACT YES ☐ NO ☐ | INITIALS

NOTES: TEMP. ON ARRIVAL 4.7

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Merit Laboratories Login Checklist

Lab Set ID: S62577
Client: HALEYALDRICH (Haley & Aldrich)
Project: RACER Romulus
Submitted: 09/04/2014 13:15 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Selection				Description	Note
01.	☐ Yes	☒ No	☐ N/A	Samples shipped	
02.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
03.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
04.	☒ Yes	☐ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 4.7
05.	☒ Yes	☐ No	☐ N/A	Received on ice/ cooling process begun	
06.	☒ Yes	☐ No	☐ N/A	All bottles intact	
07.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
08.	☒ Yes	☐ No	☐ N/A	Do sample have correct chemical preservation	
09.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
10.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
11.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
12.	☒ Yes	☐ No	☐ N/A	Completed pH checks on preserved samples? (no VOAs)	
13.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
14.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
15.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	
16.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
17.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
18.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
19.	☐ Yes	☒ No	☐ N/A	Subcontracting needed? Subcontacted to:	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S62577 Initials: KAG

Client: HALEYALDRICH (Haley & Aldrich)

Project: RACER Romulus

Submitted: 09/04/2014 13:15 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Lab ID	125 ml Plastic HNO_3	125 ml Amber H_2SO_4	250 ml Plastic H_2SO_4	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber NaOH	125 ml Amber $PbCO_3$ NaOH	pH					Notes
								<2	>12	other	ml add	new pH	
S62577.01	X							X					
S62577.01	X							X					
S62577.02	X							X					
S62577.02	X							X					
S62577.03	X							X					
S62577.03	X							X					
S62577.04	X							X					
S62577.04	X							X					
S62577.05	X							X					
S62577.05	X							X					
S62577.06	X							X					
S62577.06	X							X					
S62577.07	X							X					
S62577.07	X							X					
S62577.08	X							X					
S62577.08	X							X					
S62577.09	X							X					
S62577.09	X							X					
S62577.10	X							X					
S62577.10	X							X					
S62577.11	X							X					
S62577.11	X							X					

Sample Set Receipt

Report to
Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com
Contacts: Christine Horch

Invoice to
Attention: Accounts Payable
Address: Haley & Aldrich, Inc.
70 Blanchard Rd.
Ste. 430
Burlington, MA 01803-5100

Phone: 617-886-7400 FAX: 617-886-7900
Email: Haley Aldrich Invoice Group

Set ID: S62577 Location: HALEYALDRICH (Haley & Aldrich) PO #: 37515-014 Login by: KAG
Project: RACER Romulus Backlog Note:
Submitted: 09/04/2014 13:15 Due Date: 09/05/2014 Rush: Yes Collected by: Eric Shirley QC Level: 3 Custom Limits Present: No
Approved by: Site: Work Order#: Bill to Acct: Bill to Dept:

Sample ID	Sample Tag	Matrix	Date/Time Collected	COC Ref
S62577.01	DUP-01(09-02-2014)	Groundwater Quality	09/02/2014 00:01	86743
S62577.02	RB-01(09-02-2014)	Groundwater Quality	09/02/2014 00:02	86743
S62577.03	TW116(09-02-2014)(1430)	Groundwater	09/02/2014 14:30	86743
S62577.04	TW101(09-02-2014)(1600)	Groundwater	09/02/2014 16:00	86743
S62577.05	TW104(09-02-2014)(1705)	Groundwater	09/02/2014 17:05	86743
S62577.06	RB-02(09-03-2014)	Groundwater Quality	09/03/2014 00:01	86743
S62577.07	TW105(09-03-2014)(0825)	Groundwater	09/03/2014 08:25	86743
S62577.08	TW107(09-03-2014)(1000)	Groundwater	09/03/2014 10:00	86743
S62577.09	TW109(09-03-2014)(1150)	Groundwater	09/03/2014 11:50	86743
S62577.10	TW109(09-03-2014)(1150) MS	Groundwater	09/03/2014 11:50	86743
S62577.11	TW109(09-03-2014)(1150) MSD	Groundwater	09/03/2014 11:50	86743

Samples: S62577.01-11

Analysis Code	Analysis Title	Method	Units	Holding Date
2155WMS	Copper	E200.8	mg/L	03/01/2015
2205WMS	Selenium	E200.8	mg/L	03/01/2015
2155DIS	Copper, Dissolved	E200.8	mg/L	03/01/2015
2205DIS	Selenium, Dissolved	E200.8	mg/L	03/01/2015
1605W	Metal Digestion	SW3015A		03/01/2015
1605DIS	Metal Digestion, Dissolved Metals	SW3015A		03/01/2015

MERIT LABORATORIES, INC.
2680 EAST LANSING DRIVE EAST LANSING • MICHIGAN • 48823
PHONE: 517-332-0167 FAX: 517-332-6333
FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

RACER ROMULUS

SDG Batch:

65238

Pages 1 - 111

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FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

PROJECT:
RACER ROMULUS

SDG Batch:
65238.01

Prepared by:
Merit Laboratories, Inc.

May 7, 2015

Laboratory Name: Merit Laboratories, Inc.
City / State: East Lansing, MI
Sample Delivery Group: S65238.01 - .11

	References		Pages		Checklist	
Deliverable	**Form**	**CLP**	**From**	**To**	**Lab**	**Audit**
1. **Inventory Sheet** (not numbered)	This	DC-2			☑	☐
2. **SDG Case Narrative**			1	1	☑	☐
3. **Analytical Summary Report**			2	31	☑	☐
4. **ICP/MS Metals Data**			32	107		
Sequence / Injection Log		F.0			☑	☐
Data Sheet		F. I			☑	☐
Initial Calibration and Calibration Verification		F. IIA			☑	☐
CRDL Standards		F. IIB			☑	☐
Blanks		F. III			☑	☐
Interference Check Sample		F. IVB			☑	☐
Spike Sample Recovery		F. VA			☑	☐
Post-Digest Spike Sample Recovery		F. VB			☑	☐
Duplicates		F. VI			☐	☐
Laboratory Control Sample		F. VII			☑	☐
Serial Dilutions		F. VIII			☑	☐
Analysis Run Log		F. XIII			☑	☐
ICP/MS Tune		F. XIV			☑	☐
Internal Standard Relative Intensity Summary		F. XV			☑	☐
Instrument Detection Limits (IDL) & MDLs		F. IX			☑	☐
Linear Ranges		F. XI			☑	☐
ICP/MS Raw Data					☑	☐
Preparation / Digestion Log		F. XII			☑	☐
5. **Shipping / Receiving Documents**			108	111		
Chain-of-Custody					☑	☐
Sample log-in sheet					☑	
Sample Receipt					☑	☐

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CASE NARRATIVE
CLIENT: HALEY & ALDRICH, INC.
PROJECT: RACER ROMULUS
Merit IDs: S65238.01-S65238.11

Field Sampling: Raghavan P performed the fieldwork.

Analytical Bottles: All bottles were sent with the appropriate preservation in it. Please see the bottle list attached.

Sample Receiving: All samples were received by the laboratory on ice (04/15/2015). Dates and signatures can be found on the Chain of Custody Records. The sample receipts specify the actual tags and bottles received and logged into the laboratory "vlims" system.

ANALYSES

Metals: All metal analyses were performed according to Method 200.8. The metal digestion was performed according to Method 3015A. The QC requirements were followed for this specific project and method-specified criteria were met. *Outliers*: None

Notes: Dilution test not applicable if measured concentration is less than 100 times MDL.

Data Reporting: The analytical reports are reflective of what is on a given Chain-of-Custody record (COC). Merit's IDs were assigned to the samples as they were delivered and accepted by our log-in staff.

"I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness, for other than the condition detailed above. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature."

Barbara Ball

Barb Ball — 5/7/15

QA Officer — Date

Analytical Laboratory Report

Report ID: S65238.01(01)
Generated on 04/24/2015

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
Kevin George (kgeorge@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S65238.01-S65238.11
Project: RACER Romulus
Collected Date: 04/14/2015 - 04/15/2015
Submitted Date/Time: 04/15/2015 16:00
Sampled by: Raghavan P
P.O. #: 37515

Table of Contents

Maya Murshak
Technical Director

Analytical Laboratory Report

General Report Notes

Results relate only to items tested as received by laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis were applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (11 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S65238.01	TW101(04-14-2015)(1220)	Groundwater	04/14/2015 12:20
S65238.02	TW104(04-14-2015)(1400)	Groundwater	04/14/2015 14:00
S65238.03	TW105(04-14-2015)(1455)	Groundwater	04/14/2015 14:55
S65238.04	DUP-01(04-14-2015)	Groundwater Quality	04/14/2015 00:01
S65238.05	RB-01(04-14-2015)	Groundwater Quality	04/14/2015 00:02
S65238.06	TW109(04-15-2015)(0830)	Groundwater	04/15/2015 08:30
S65238.07	TW107(04-15-2015)(0930)	Groundwater	04/15/2015 09:30
S65238.08	RB-02(04-15-2015)	Groundwater Quality	04/15/2015 00:01
S65238.09	TW116(04-14-2015)(1600)	Groundwater	04/14/2015 16:00
S65238.10	TW116(04-14-2015)(1600) MS	Groundwater	04/14/2015 16:00
S65238.11	TW116(04-14-2015)(1600) MSD	Groundwater	04/14/2015 16:00

Analytical Laboratory Report

Lab Sample ID: S65238.01
Sample Tag: TW101(04-14-2015)(1220)
Collected Date/Time: 04/14/2015 12:20
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	0.005	mg/L	0.005	E200.8	04/24/15 13:48	JRH	7440-50-8	
Copper	0.005	mg/L	0.005	E200.8	04/24/15 13:43	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 13:48	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 13:43	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.02
Sample Tag: TW104(04-14-2015)(1400)
Collected Date/Time: 04/14/2015 14:00
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 13:53	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 13:50	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 13:53	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 13:50	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.03
Sample Tag: TW105(04-14-2015)(1455)
Collected Date/Time: 04/14/2015 14:55
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 13:58	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 13:55	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 13:58	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 13:55	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.04
Sample Tag: DUP-01(04-14-2015)
Collected Date/Time: 04/14/2015 00:01
Matrix: Groundwater Quality
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:03	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 14:01	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:03	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:01	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.05
Sample Tag: RB-01(04-14-2015)
Collected Date/Time: 04/14/2015 00:02
Matrix: Groundwater Quality
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:21	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 14:19	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:21	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:19	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.06
Sample Tag: TW109(04-15-2015)(0830)
Collected Date/Time: 04/15/2015 08:30
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:26	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 14:24	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:26	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:24	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.07
Sample Tag: TW107(04-15-2015)(0930)
Collected Date/Time: 04/15/2015 09:30
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:31	JRH	7440-50-8	
Copper	0.043	mg/L	0.005	E200.8	04/24/15 14:29	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:31	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:29	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.08
Sample Tag: RB-02(04-15-2015)
Collected Date/Time: 04/15/2015 00:01
Matrix: Groundwater Quality
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:36	JRH	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	04/24/15 14:34	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:36	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:34	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.09
Sample Tag: TW116(04-14-2015)(1600)
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	0.006	mg/L	0.005	E200.8	04/24/15 14:39	JRH	7440-50-8	
Copper	0.016	mg/L	0.005	E200.8	04/24/15 14:06	JRH	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	04/24/15 14:39	JRH	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	04/24/15 14:06	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.10
Sample Tag: TW116(04-14-2015)(1600) MS
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	0.239	mg/L	0.005	E200.8	04/24/15 14:41	JRH	7440-50-8	
Copper	0.254	mg/L	0.005	E200.8	04/24/15 14:08	JRH	7440-50-8	
Selenium, Dissolved	0.238	mg/L	0.005	E200.8	04/24/15 14:41	JRH	7782-49-2	
Selenium	0.250	mg/L	0.005	E200.8	04/24/15 14:08	JRH	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S65238.11
Sample Tag: TW116(04-14-2015)(1600) MSD
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metal Digestion	Completed			SW3015A	04/24/15 10:30	JRH		
Metals								
Copper, Dissolved	0.237	mg/L	0.005	E200.8	04/24/15 14:44	JRH	7440-50-8	
Copper	0.257	mg/L	0.005	E200.8	04/24/15 14:11	JRH	7440-50-8	
Selenium, Dissolved	0.244	mg/L	0.005	E200.8	04/24/15 14:44	JRH	7782-49-2	
Selenium	0.256	mg/L	0.005	E200.8	04/24/15 14:11	JRH	7782-49-2	

Quality Control Cover Page

Report ID: S65238.01(01)
Report Date: 04/24/2015
Project: RACER Romulus
Lab Sample ID(s): S65238.01-S65238.11

Report to:

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Sample ID	Sample Tag	Collected	Matrix	Analysis Departments
S65238.01	TW101(04-14-2015)(1220)	04/14/2015 12:20	Groundwater	Extraction / Prep., Metals
S65238.02	TW104(04-14-2015)(1400)	04/14/2015 14:00	Groundwater	Extraction / Prep., Metals
S65238.03	TW105(04-14-2015)(1455)	04/14/2015 14:55	Groundwater	Extraction / Prep., Metals
S65238.04	DUP-01(04-14-2015)	04/14/2015 00:01	Groundwater	Extraction / Prep., Metals
S65238.05	RB-01(04-14-2015)	04/14/2015 00:02	Groundwater	Extraction / Prep., Metals
S65238.06	TW109(04-15-2015)(0830)	04/15/2015 08:30	Groundwater	Extraction / Prep., Metals
S65238.07	TW107(04-15-2015)(0930)	04/15/2015 09:30	Groundwater	Extraction / Prep., Metals
S65238.08	RB-02(04-15-2015)	04/15/2015 00:01	Groundwater	Extraction / Prep., Metals
S65238.09	TW116(04-14-2015)(1600)	04/14/2015 16:00	Groundwater	Extraction / Prep., Metals
S65238.10	TW116(04-14-2015)(1600) MS	04/14/2015 16:00	Groundwater	Extraction / Prep., Metals
S65238.11	TW116(04-14-2015)(1600) MSD	04/14/2015 16:00	Groundwater	Extraction / Prep., Metals

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

Quality Control Report

Report ID: QC-S65238.01(01)
Generated on 05/07/2015

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S65238.01-S65238.11
Project: RACER Romulus
Submitted Date/Time: 04/15/2015 16:00
Sampled by: Raghavan P
P.O. #: 37515

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

Lab Sample ID: S65238.01
Sample Tag: TW101(04-14-2015)(1220)
Collected Date/Time: 04/14/2015 12:20
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 13:48	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 13:43	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 13:48	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 13:43	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S65238.02
Sample Tag: TW104(04-14-2015)(1400)
Collected Date/Time: 04/14/2015 14:00
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 13:53	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 13:50	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 13:53	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 13:50	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.03
Sample Tag: TW105(04-14-2015)(1455)
Collected Date/Time: 04/14/2015 14:55
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 13:58	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 13:55	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 13:58	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 13:55	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.04
Sample Tag: DUP-01(04-14-2015)
Collected Date/Time: 04/14/2015 00:01
Matrix: Groundwater Quality
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:03	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:01	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:03	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:01	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.05
Sample Tag: RB-01(04-14-2015)
Collected Date/Time: 04/14/2015 00:02
Matrix: Groundwater Quality
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:21	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:19	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:21	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:19	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.06
Sample Tag: TW109(04-15-2015)(0830)
Collected Date/Time: 04/15/2015 08:30
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:26	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:24	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:26	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:24	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.07
Sample Tag: TW107(04-15-2015)(0930)
Collected Date/Time: 04/15/2015 09:30
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:31	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:29	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:31	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:29	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S65238.08
Sample Tag: RB-02(04-15-2015)
Collected Date/Time: 04/15/2015 00:01
Matrix: Groundwater Quality
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:36	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:34	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:36	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:34	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.09
Sample Tag: TW116(04-14-2015)(1600)
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:39	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:06	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:39	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:06	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.10
Sample Tag: TW116(04-14-2015)(1600) MS
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:41	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:08	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:41	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:08	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S65238.11
Sample Tag: TW116(04-14-2015)(1600) MSD
Collected Date/Time: 04/14/2015 16:00
Matrix: Groundwater
COC Reference: 83523

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	04/24/15 14:44	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Copper	E200.8	04/24/15 14:11	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	04/24/15 14:44	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	04/24/15 14:11	MT3-15-0424B	MTD-042415-2	No	LCS/BLK/MS/MSD

Metals, Prep Batch ID: MTD-042415-2

Surrogates: No, QC Types: LCS/BLK/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S65238.01	Copper, Dissolved	E200.8	04/24/15 13:48	MT3-15-0424B
S65238.01	Copper	E200.8	04/24/15 13:43	MT3-15-0424B
S65238.01	Selenium, Dissolved	E200.8	04/24/15 13:48	MT3-15-0424B
S65238.01	Selenium	E200.8	04/24/15 13:43	MT3-15-0424B
S65238.02	Copper, Dissolved	E200.8	04/24/15 13:53	MT3-15-0424B
S65238.02	Copper	E200.8	04/24/15 13:50	MT3-15-0424B
S65238.02	Selenium, Dissolved	E200.8	04/24/15 13:53	MT3-15-0424B
S65238.02	Selenium	E200.8	04/24/15 13:50	MT3-15-0424B
S65238.03	Copper, Dissolved	E200.8	04/24/15 13:58	MT3-15-0424B
S65238.03	Copper	E200.8	04/24/15 13:55	MT3-15-0424B
S65238.03	Selenium, Dissolved	E200.8	04/24/15 13:58	MT3-15-0424B
S65238.03	Selenium	E200.8	04/24/15 13:55	MT3-15-0424B
S65238.04	Copper, Dissolved	E200.8	04/24/15 14:03	MT3-15-0424B
S65238.04	Copper	E200.8	04/24/15 14:01	MT3-15-0424B
S65238.04	Selenium, Dissolved	E200.8	04/24/15 14:03	MT3-15-0424B
S65238.04	Selenium	E200.8	04/24/15 14:01	MT3-15-0424B
S65238.05	Copper, Dissolved	E200.8	04/24/15 14:21	MT3-15-0424B
S65238.05	Copper	E200.8	04/24/15 14:19	MT3-15-0424B
S65238.05	Selenium, Dissolved	E200.8	04/24/15 14:21	MT3-15-0424B
S65238.05	Selenium	E200.8	04/24/15 14:19	MT3-15-0424B
S65238.06	Copper, Dissolved	E200.8	04/24/15 14:26	MT3-15-0424B
S65238.06	Copper	E200.8	04/24/15 14:24	MT3-15-0424B
S65238.06	Selenium, Dissolved	E200.8	04/24/15 14:26	MT3-15-0424B
S65238.06	Selenium	E200.8	04/24/15 14:24	MT3-15-0424B
S65238.07	Copper, Dissolved	E200.8	04/24/15 14:31	MT3-15-0424B
S65238.07	Copper	E200.8	04/24/15 14:29	MT3-15-0424B
S65238.07	Selenium, Dissolved	E200.8	04/24/15 14:31	MT3-15-0424B
S65238.07	Selenium	E200.8	04/24/15 14:29	MT3-15-0424B
S65238.08	Copper, Dissolved	E200.8	04/24/15 14:36	MT3-15-0424B
S65238.08	Copper	E200.8	04/24/15 14:34	MT3-15-0424B
S65238.08	Selenium, Dissolved	E200.8	04/24/15 14:36	MT3-15-0424B
S65238.08	Selenium	E200.8	04/24/15 14:34	MT3-15-0424B
S65238.09	Copper, Dissolved	E200.8	04/24/15 14:39	MT3-15-0424B
S65238.09	Copper	E200.8	04/24/15 14:06	MT3-15-0424B
S65238.09	Selenium, Dissolved	E200.8	04/24/15 14:39	MT3-15-0424B
S65238.09	Selenium	E200.8	04/24/15 14:06	MT3-15-0424B
S65238.10	Copper, Dissolved	E200.8	04/24/15 14:41	MT3-15-0424B
S65238.10	Copper	E200.8	04/24/15 14:08	MT3-15-0424B
S65238.10	Selenium, Dissolved	E200.8	04/24/15 14:41	MT3-15-0424B
S65238.10	Selenium	E200.8	04/24/15 14:08	MT3-15-0424B
S65238.11	Copper, Dissolved	E200.8	04/24/15 14:44	MT3-15-0424B
S65238.11	Copper	E200.8	04/24/15 14:11	MT3-15-0424B
S65238.11	Selenium, Dissolved	E200.8	04/24/15 14:44	MT3-15-0424B
S65238.11	Selenium	E200.8	04/24/15 14:11	MT3-15-0424B

Form 0: Sequence Log

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Filename	*Run Time*	*Sample ID*	*Matrix*	*QC Type*
001	Apr 24 2015 12:25 pm	blk	Liquid	
002	Apr 24 2015 12:27 pm	0.00	Liquid	
003	Apr 24 2015 12:30 pm	0.0005	Liquid	
004	Apr 24 2015 01:27 pm	0.001	Liquid	
005	Apr 24 2015 12:35 pm	0.005	Liquid	
006	Apr 24 2015 12:38 pm	0.02	Liquid	
007	Apr 24 2015 12:40 pm	0.05	Liquid	
008	Apr 24 2015 12:43 pm	0.20	Liquid	
009	Apr 24 2015 12:46 pm	ICV-0.10	Liquid	ICV
010	Apr 24 2015 12:48 pm	CCV1-0.10	Liquid	CCV
011	Apr 24 2015 12:51 pm	Rinse	Liquid	
012	Apr 24 2015 01:38 pm	blk	Liquid	
013	Apr 24 2015 01:40 pm	0.00	Liquid	
014	Apr 24 2015 01:00 pm	BS-0.0005	Liquid	BS
015	Apr 24 2015 01:22 pm	BS-0.001	Liquid	BS
016	Apr 24 2015 01:05 pm	ERA-5/1 8141-04	Liquid	ERA
017	Apr 24 2015 01:08 pm	Soln-AB	Liquid	AB
018	Apr 24 2015 01:30 pm	Soln-AA	Liquid	AA
019	Apr 24 2015 01:32 pm	042415_2 LCS-0.05	Liquid	LCS
020	Apr 24 2015 01:35 pm	042415_2 LRB	Liquid	LRB
021	Apr 24 2015 01:43 pm	65238.01s tot	Liquid	S
022	Apr 24 2015 01:45 pm	65238.01 dis dil	Liquid	DIL
023	Apr 24 2015 01:48 pm	65238.01s dis	Liquid	S
024	Apr 24 2015 01:50 pm	65238.02s tot	Liquid	S
025	Apr 24 2015 01:53 pm	65238.02s dis	Liquid	S
026	Apr 24 2015 01:55 pm	65238.03s tot	Liquid	S
027	Apr 24 2015 01:58 pm	65238.03s dis	Liquid	S
028	Apr 24 2015 02:01 pm	65238.04s tot	Liquid	S
029	Apr 24 2015 02:03 pm	65238.04s dis	Liquid	S
030	Apr 24 2015 02:06 pm	65238.09s tot	Liquid	S
031	Apr 24 2015 02:08 pm	65238.10s tot MS-0.05	Liquid	MS
032	Apr 24 2015 02:11 pm	65238.11s tot MSD	Liquid	MSD
033	Apr 24 2015 02:13 pm	CCV2-0.10	Liquid	CCV
034	Apr 24 2015 02:16 pm	CCB2	Liquid	CCB
035	Apr 24 2015 02:19 pm	65238.05s tot	Liquid	S
036	Apr 24 2015 02:21 pm	65238.05s dis	Liquid	S
037	Apr 24 2015 02:24 pm	65238.06s tot	Liquid	S
038	Apr 24 2015 02:26 pm	65238.06s dis	Liquid	S
039	Apr 24 2015 02:29 pm	65238.07s tot	Liquid	S
040	Apr 24 2015 02:31 pm	65238.07s dis	Liquid	S
041	Apr 24 2015 02:34 pm	65238.08s tot	Liquid	S
042	Apr 24 2015 02:36 pm	65238.08s dis	Liquid	S
043	Apr 24 2015 02:39 pm	65238.09s dis	Liquid	S
044	Apr 24 2015 02:41 pm	65238.10s dis MS-0.05	Liquid	MS
045	Apr 24 2015 02:44 pm	65238.11s MSD	Liquid	MSD
046	Apr 24 2015 02:47 pm	CCV3-0.10	Liquid	CCV
047	Apr 24 2015 02:49 pm	CCB3	Liquid	CCB

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.01
Sample Tag: TW101(04-14-2015)(1220)
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.005	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	0.005	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.02
Sample Tag: TW104(04-14-2015)(1400)
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.03
Sample Tag: TW105(04-14-2015)(1455)
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.04
Sample Tag: DUP-01(04-14-2015)
Date Collected: 04/14/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.05
Sample Tag: RB-01(04-14-2015)
Date Collected: 04/14/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.06
Sample Tag: TW109(04-15-2015)(0830)
Date Collected: 04/15/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.07
Sample Tag: TW107(04-15-2015)(0930)
Date Collected: 04/15/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.043	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.08
Sample Tag: RB-02(04-15-2015)
Date Collected: 04/15/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.09
Sample Tag: TW116(04-14-2015)(1600)
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.016	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium	Not detected	0.005	0.0024	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	0.006	0.005	0.00034	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.0024	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.10
Sample Tag: TW116(04-14-2015)(1600) MS
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.254	0.005	0.00019	mg/L	5	04/24/2015	
7782-49-2	Selenium	0.250	0.005	0.00048	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	0.239	0.005	0.00019	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	0.238	0.005	0.00048	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Lab Sample ID: S65238.11
Sample Tag: TW116(04-14-2015)(1600) MSD
Date Collected: 04/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.257	0.005	0.00019	mg/L	5	04/24/2015	
7782-49-2	Selenium	0.256	0.005	0.00048	mg/L	5	04/24/2015	
7440-50-8	Copper, Dissolved	0.237	0.005	0.00019	mg/L	5	04/24/2015	
7782-49-2	Selenium, Dissolved	0.244	0.005	0.00048	mg/L	5	04/24/2015	

Form 1: Metals Analysis Data Sheet - Flag Description Key

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Note/Qualifier Key	
m	Duplicate injection precision not met
n	Spiked sample recovery outside control limits
s	Reported value determined by the MSA
u	Analyte not detected above reporting limit
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
A	TIC is a suspected aldol-condensation product
C	Analyte presence confirmed by GC/MS
D	Identified in an analysis at a secondary dilution factor
N	Presumptive evidence of TIC
P	Pesticide/Aroclor 2-column RPD exceeds limit
U	Analyte not detected above reporting limit
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
J	Estimated value less than reporting limit, but greater than MDL
Q	Reported result represents most abundant aroclor
V	Accurate value not available due to presence of multiple aroclors
W	Surrogate result not applicable due to sample dilution
Z	Estimated result due to matrix interference
!	Result is outside of stated limit criteria
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
K	Elevated reporting limit due to low total solids
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Form 2A: Initial and Continuing Calibration Verification

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
009 ICV-0.10	ICV	1.000	Cu	0.100	0.10	100	90/110	mg/L	Liquid
			Se	0.102	0.10	102	90/110		
010 CCV1-0.10	CCV	1.000	Cu	0.101	0.10	101	90/110	mg/L	Liquid
			Se	0.101	0.10	101	90/110		
033 CCV2-0.10	CCV	1.000	Cu	0.0951	0.10	95	90/110	mg/L	Liquid
			Se	0.0964	0.10	96	90/110		
046 CCV3-0.10	CCV	1.000	Cu	0.0924	0.10	92	90/110	mg/L	Liquid
			Se	0.0927	0.10	93	90/110		

Form 2B: Performance Sample Evaluation

ERA Lot No.: 8131-04

Data Set ID: MT3-15-0424B

Instrument ID: HP ICP/MS 2

Analysis Date: 04/24/15

Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*Lower Accept*	*Upper Accept*	*Units*	*Matrix*
016 ERA-5/1 8141-04	5.000	Cu	0.454	0.443	103	0.377	0.510	mg/L	Liquid
		Se	0.935	0.928	101	0.788	1.070		

Form 3: Blanks

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Raw Conc*	*Units*	*Matrix*
020 042415_2 LRB	LRB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0004071		
034 CCB2	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	<0.000		
047 CCB3	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	<0.000		

Form 4B: ICP Interference Check Sample

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
017 Soln-AB	AB	1.000	Cu	0.0206	0.02	103	80/120	mg/L	Liquid
018 Soln-AA	AA	1.000	Cu	<0.001	0.0	N/A	N/A	mg/L	Liquid
			Se	<0.001	0.0	N/A	N/A		

Form 5A: Matrix Spike Sample Recovery

Data Set ID: MT3-15-0424B

Instrument ID: HP ICP/MS 2

Analysis Date: 04/24/15

Analyst: JRH

Spike Name	Sample Name	Dilute	Element	Spike Conc	Sample Conc	Spike Amount	%Rec	LCL/UCL	Units	Matrix
014 BS-0.0005		1.000	Cu	0.00045	ND	0.0005	90	70/130	mg/L	Liquid
015 BS-0.001		1.000	Cu	0.00091	ND	0.001	91	70/130	mg/L	Liquid
			Se	0.00115	ND	0.001	115	70/130		
031 65238.10s tot	**043 65238.09s dis**	5.000	Cu	0.254	0.006	0.25	99	75/125	mg/L	Liquid
			Se	0.250	<0.005	0.25	100	75/125		
044 65238.10s dis	**030 65238.09s tot**	5.000	Cu	0.239	0.016	0.25	89	75/125	mg/L	Liquid
			Se	0.238	<0.005	0.25	95	75/125		

Form 5B: Matrix Spike Duplicate Evaluation

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Duplicate Name	*Sample Name*	*Dilute*	*Element*	*Dup Conc*	*Samp Conc*	*%RPD*	*LCL/UCL*	*Units*	*Matrix*
032 65238.11s tot	**031 65238.10s tot**	5.000	Cu	0.257	0.254	1	0/20	mg/L	Liquid
			Se	0.256	0.250	2	0/20		
045 65238.11s MSD	**044 65238.10s dis**	5.000	Cu	0.237	0.239	1	0/20	mg/L	Liquid
			Se	0.244	0.238	2	0/20		

Form 7: Laboratory Control Sample

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
019 042415_2 LCS-0.05	1.000	Cu	0.0490	0.05	98	85/115	mg/L	Liquid
		Se	0.0487	0.05	97	85/115		

Form 8: Serial Dilutions

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Duplicate Name	Sample Name	Dilute	Element	Dup Conc	Samp Conc	%D	LCL/UCL	Units	Matrix
022 65238.01 dis	**023 65238.01s dis**	25.00	Cu	<0.005	0.005	100*	0/10	mg/L	Liquid
			Se	<0.005	<0.005	NC	0/10		

Serial Dilution test not applicable if measured sample concentration is < 100 x MDL.

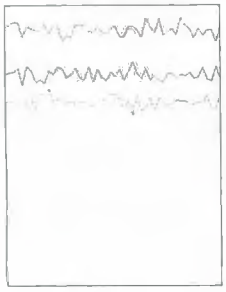
Form 13: Analysis Run Log

Data Set ID: MT3-15-0424B
Instrument ID: HP ICP/MS 2
Analysis Date: 04/24/15
Analyst: JRH

Filename	*Run Time*	*Matrix*	*Analytes*
001 blk	Apr 24 2015 12:25 pm	Liquid	
002 0.00	Apr 24 2015 12:27 pm	Liquid	
003 0.0005	Apr 24 2015 12:30 pm	Liquid	
004 0.001	Apr 24 2015 01:27 pm	Liquid	
005 0.005	Apr 24 2015 12:35 pm	Liquid	
006 0.02	Apr 24 2015 12:38 pm	Liquid	
007 0.05	Apr 24 2015 12:40 pm	Liquid	
008 0.20	Apr 24 2015 12:43 pm	Liquid	
009 ICV-0.10	Apr 24 2015 12:46 pm	Liquid	
010 CCV1-0.10	Apr 24 2015 12:48 pm	Liquid	
011 Rinse	Apr 24 2015 12:51 pm	Liquid	
012 blk	Apr 24 2015 01:38 pm	Liquid	
013 0.00	Apr 24 2015 01:40 pm	Liquid	
014 BS-0.0005	Apr 24 2015 01:00 pm	Liquid	
015 BS-0.001	Apr 24 2015 01:22 pm	Liquid	
016 ERA-5/1 8141-04	Apr 24 2015 01:05 pm	Liquid	
017 Soln-AB	Apr 24 2015 01:08 pm	Liquid	
018 Soln-AA	Apr 24 2015 01:30 pm	Liquid	
019 042415_2 LCS-0.05	Apr 24 2015 01:32 pm	Liquid	
020 042415_2 LRB	Apr 24 2015 01:35 pm	Liquid	
021 65238.01s tot	Apr 24 2015 01:43 pm	Liquid	
022 65238.01 dis dil	Apr 24 2015 01:45 pm	Liquid	
023 65238.01s dis	Apr 24 2015 01:48 pm	Liquid	
024 65238.02s tot	Apr 24 2015 01:50 pm	Liquid	
025 65238.02s dis	Apr 24 2015 01:53 pm	Liquid	
026 65238.03s tot	Apr 24 2015 01:55 pm	Liquid	
027 65238.03s dis	Apr 24 2015 01:58 pm	Liquid	
028 65238.04s tot	Apr 24 2015 02:01 pm	Liquid	
029 65238.04s dis	Apr 24 2015 02:03 pm	Liquid	
030 65238.09s tot	Apr 24 2015 02:06 pm	Liquid	
031 65238.10s tot MS-0.05	Apr 24 2015 02:08 pm	Liquid	
032 65238.11s tot MSD	Apr 24 2015 02:11 pm	Liquid	
033 CCV2-0.10	Apr 24 2015 02:13 pm	Liquid	
034 CCB2	Apr 24 2015 02:16 pm	Liquid	
035 65238.05s tot	Apr 24 2015 02:19 pm	Liquid	
036 65238.05s dis	Apr 24 2015 02:21 pm	Liquid	
037 65238.06s tot	Apr 24 2015 02:24 pm	Liquid	
038 65238.06s dis	Apr 24 2015 02:26 pm	Liquid	
039 65238.07s tot	Apr 24 2015 02:29 pm	Liquid	
040 65238.07s dis	Apr 24 2015 02:31 pm	Liquid	
041 65238.08s tot	Apr 24 2015 02:34 pm	Liquid	
042 65238.08s dis	Apr 24 2015 02:36 pm	Liquid	
043 65238.09s dis	Apr 24 2015 02:39 pm	Liquid	
044 65238.10s dis MS-0.05	Apr 24 2015 02:41 pm	Liquid	
045 65238.11s MSD	Apr 24 2015 02:44 pm	Liquid	
046 CCV3-0.10	Apr 24 2015 02:47 pm	Liquid	
047 CCB3	Apr 24 2015 02:49 pm	Liquid	

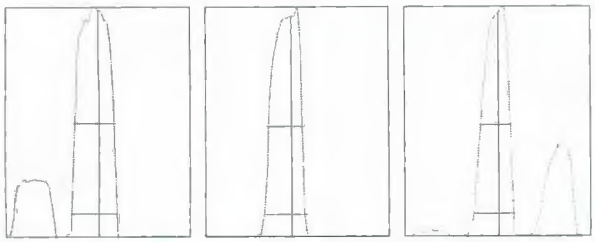
Tune Report

Tune File : nogas.u
Comment :



m/z	Range	Count	Mean	RSD%	Background
7	5,000	3660.0	3751.6	2.60	2.10
89	10,000	9212.0	9112.1	2.19	1.20
205	10,000	6776.0	6546.8	2.78	1.50

Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 50
Oxide: 156/140 1.203%
Doubly Charged: 70/140 0.986%



m/z:	7	89	205
Height:	3,811	9,006	6,795
Axis:	7.05	88.95	205.05
W-50%:	0.65	0.60	0.50
W-10%:	0.7500	0.700	0.6500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec
Y axis : Linear

===Plasma Condition===		===Ion Lenses===		===Q-Pole Parameters===	
RF Power	1500 W	Extract 1	-2.3 V	AMU Gain	134
RF Matching	1.75 V	Extract 2	-87 V	AMU Offset	124
Smpl Depth	7 mm	Omega Bias-ce	-20 V	Axis Gain	1.0001
Torch-H	0.7 mm	Omega Lens-ce	1.4 V	Axis Offset	-0.04
Torch-V	0.6 mm	Cell Entrance	-30 V	QP Bias	-3 V
Carrier Gas	0.7 L/min	QP Focus	3 V		
Makeup Gas	0 L/min	Cell Exit	-34 V	===Detector Parameters===	
Optional Gas	0 %			Discriminator	8 mV
Nebulizer Pump	0.1 rps	===Octopole Parameters===		Analog HV	1830 V
Sample Pump	--- rps	OctP RF	125 V	Pulse HV	1470 V
S/C Temp	0 degC	OctP Bias	-6 V		

===Reaction Cell===
Reaction Mode : OFF
H2 Gas : 0 mL/min He Gas : 0 mL/min Optional Gas : 0 %

Tune File : he.u
He Gas: 2.8 mL/min
Optional Gas: 0 %
QP Focus: -7 V
Cell Exit: -40 V
OctP Bias: -18 V
QP Bias: -13 V

m/z	Count(Mean)	RSD%
51	72.2	14.57
59	2201.0	3.28
89	2258.9	3.56

Integration Time: 0.1000sec

Tune File : h2.u
H2 Gas: 1.6 mL/min
Optional Gas: 0 %
QP Focus: -8 V
Cell Exit: -40 V
OctP Bias: -18 V
QP Bias: -15 V

m/z	Count(Mean)	RSD%
59	4715.7	2.63
78	36.9	16.98
89	8194.7	2.83

Integration Time: 0.1000sec

Generated : Apr 24, 2015 09:44:07
ed : Apr 24, 2015 09:45:46

6020 and 200.8 Tune Check Sample

Data File: 0016TUN.D
Date Acquired: Apr 24 2015 09:48 am
Operator:
Sample Name: 10ppb Li, Co, In, Tl
Misc Info: EPA tune solution
Vial Number: 4106
Current Method: TN_62_28.M

QC Tune Summary:
Pass

RSD%

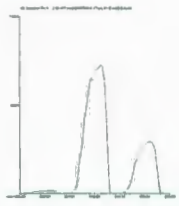
Element	Actual	Required	Flag
7 Li	0.90	5.00	0
9 Be	1.83	5.00	
59 Co	0.95	5.00	
115 In	0.78	5.00	
205 Tl	2.44	5.00	
208 Pb	1.48	5.00	

7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

9 Be
Mass Calib.
Actual: 9.00
Required 8.90 - 9.10
Flag:
Peak Width
Actual: 0.70
Required 0.75
Flag:

59 Co
Mass Calib.
Actual: 58.95
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

115 In
Mass Calib.
Actual: 114.95
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.05
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-15-0424B

Instrument ID: HP ICP/MS 2

Analysis Date: 04/24/15

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	190645	70-125	133452-238306	80-120	152516-228774	0
Rh-2	128061	70-125	89643-160076	80-120	102449-153673	0

Seq ID	QC Type	Rh-1	Rh-2
001		100	100
002		100	100
003		100	100
004		101	101
005		102	101
006		101	100
007		101	100
008		99	97
009	ICV	101	100
010	CCV	100	99
011		99	99
012		102	101
013		101	101
014	BS	101	100
015	BS	101	100
016	ERA	108	107
017	AB	98	98
018	AA	100	100
019	LCS	99	99
020	LRB	99	98
021	S	95	96
022	DIL	98	97
023	S	96	95
024	S	96	94
025	S	94	94
026	S	95	93
027	S	91	91
028	S	93	93
029	S	94	93
030	S	95	95
031	MS	94	94
032	MSD	94	94
033	CCV	103	102
034	CCB	101	101
035	S	99	98
036	S	98	97
037	S	92	94

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-15-0424B

Instrument ID: HP ICP/MS 2

Analysis Date: 04/24/15

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	190645	70-125	133452-238306	80-120	152516-228774	0
Rh-2	128061	70-125	89643-160076	80-120	102449-153673	0

Seq ID	QC Type	Rh-1	Rh-2
038	S	94	93
039	S	95	94
040	S	96	95
041	S	102	102
042	S	101	99
043	S	97	96
044	MS	94	94
045	MSD	102	101
046	CCV	100	99
047	CCB	101	99

Form 9

Analysis Date	varies	
Analytical Method	6020A/6020/200.8	
Digestion Date	varies	
Spiked Value	varies	(ug/L)
Estimated Limit	varies	(ug/L)

Element/Mass	Date	Spike (ug/l)	MDL (ug/l)	Prep Batch
Al-27	4/9/2012	0.50	0.189	MTD-040212-1
Sb-121	3/20/2012	1.00	0.105	MTD-032012-3
As-75	3/20/2012	0.05	0.032	MTD-032012-2
Ba-137	3/20/2012	0.50	0.202	MTD-032012-2
Be-9	4/10/2012	0.10	0.079	MTD-041012-1
B-10	3/20/2012	1.00	0.589	MTD-032012-3
B-11	3/20/2012	1.00	0.277	MTD-032012-3
Cd-111	3/20/2012	0.05	0.038	MTD-032012-2
Cd-114	3/20/2012	0.10	0.030	MTD-032012-2
Cr-52	3/20/2012	0.10	0.023	MTD-032012-2
Cr-53	3/20/2012	0.10	0.054	MTD-032012-2
Co-59	3/20/2012	0.10	0.035	MTD-032012-2
Cu-65	3/20/2012	0.50	0.068	MTD-032012-2
Fe-56	4/9/2012	2.00	0.470	MTD-040912-1
Fe-57	4/9/2012	2.00	0.824	MTD-040912-1
Pb-208	3/20/2012	0.10	0.052	MTD-032012-2
Li-7	3/20/2012	1.00	0.166	MTD-032012-3
Mn-55	3/20/2012	0.10	0.187	MTD-032012-2
Mo-95	4/9/2012	0.50	0.442	MTD-040212-1
Ni-60	4/13/2012	0.10	0.035	MTD-041012-1
Se-78	3/20/2012	0.10	0.058	MTD-032012-2
Se-82	3/20/2012	0.50	0.475	MTD-032012-2
Ag-107	3/20/2012	0.10	0.025	MTD-032012-2
Sr-88	3/20/2012	0.10	0.016	MTD-032012-2
Tl-205	4/9/2012	0.50	0.089	MTD-040212-1
Sn-118	3/20/2012	0.10	0.079	MTD-032012-2
Ti-47	3/20/2012	0.50	0.124	MTD-032012-2
V-51	3/20/2012	0.05	0.018	MTD-032012-2
Zn-66	4/9/2012	2.00	0.366	MTD-040912-1

Element/Mass	Date	Spike (mg/l)	MDL (mg/l)	Prep Batch
Ca-43	4/16/2012	0.01	0.0101	MTD-041012-4
Ca-44	4/16/2012	0.01	0.0041	MTD-041012-4
Mg-24	4/16/2012	0.01	0.0006	MTD-041012-4
K-39	4/16/2012	0.01	0.0030	MTD-041012-4
Na-23	4/16/2012	0.10	0.0101	MTD-041012-4

Linear Range June 2012

		Prep Batch	Run Batch
Aluminum	5.0ppm	MTD-061912-5	MT3-12-0619C
Antimony	5.0ppm	MTD-061912-5	MT3-12-0619C
Arsenic	1.0ppm	MTD-061912-5	MT3-12-0619C
Barium	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-10	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-11	5.0ppm	MTD-061912-5	MT3-12-0619C
Beryllium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-111	5.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-114	5.0ppm	MTD-061912-5	MT3-12-0619C
Chromium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cobalt	2.0ppm	MTD-061912-5	MT3-12-0619C
Copper	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-56	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-57	2.0ppm	MTD-061912-5	MT3-12-0619C
Lead	5.0ppm	MTD-061912-5	MT3-12-0619C
Lithium	2.0ppm	MTD-061912-5	MT3-12-0619C
Manganese	1.0ppm	MTD-061912-5	MT3-12-0619C
Molybdenum	1.0ppm	MTD-061912-5	MT3-12-0619C
Nickel	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-78	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-82	5.0ppm	MTD-061912-5	MT3-12-0619C
Silver	1.0ppm	MTD-061912-5	MT3-12-0619C
Strontium-86	5.0ppm	MTD-061912-5	MT3-12-0619C
Thallium	5.0ppm	MTD-061912-5	MT3-12-0619C
Tin	1.0ppm	MTD-061912-5	MT3-12-0619C
Titanium	1.0ppm	MTD-061912-5	MT3-12-0619C
Vanadium	1.0ppm	MTD-061912-5	MT3-12-0619C
Zinc	2.0ppm	MTD-061912-5	MT3-12-0619C

Sodium-23	50ppm	MTD-061912-5	MT3-12-0619B
Magnesium-24	50ppm	MTD-061912-5	MT3-12-0619B
Potassium-39	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-43	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-44	50ppm	MTD-061912-5	MT3-12-0619B

Maximum spiking levels are instated to ensure the safety and longevity of the instrument. Any sample results above this level result in extended wash runs and sample dilution.

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 001SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:25 pm
Sample Name: blk
Sample Type: CalBlk
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000299651	0.000004486	mg/L	1,000	2
Se	78	103	.0000375661	0.0006024	mg/L	103.25	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 002SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:27 pm
Sample Name: 0.00
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000287573	<0.000	mg/L	522.45	2
Se	78	103	.0000399737	0.0008211	mg/L	17.87	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 003SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:30 pm
Sample Name: 0.0005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000638795	0.0004582	mg/L	18.38	2
Se	78	103	.0000458995	0.001359	mg/L	30.94	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 004SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:27 pm
Sample Name: 0.001
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000947031	0.0008706	mg/L	5.06	2
Se	78	103	.0000449800	0.001276	mg/L	27.87	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 005SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:35 pm
Sample Name: 0.005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0004005969	0.004963	mg/L	5.32	2
Se	78	103	.0000900449	0.005370	mg/L	2.42	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 006SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:38 pm
Sample Name: 0.02
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001529711	0.02007	mg/L	1.84	2
Se	78	103	.0002530143	0.02018	mg/L	4.87	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 007SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:40 pm
Sample Name: 0.05
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003778969	0.05016	mg/L	2.63	2
Se	78	103	.0005850957	0.05035	mg/L	0.91	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 008SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:43 pm
Sample Name: 0.20
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.01497470	0.2000	mg/L	0.98	2
Se	78	103	0.002231127	0.1999	mg/L	0.75	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 009SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:46 pm
Sample Name: ICV-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007515122	0.1001	mg/L	2.36	2
Se	78	103	0.001156648	0.1023	mg/L	1.17	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 010SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:48 pm
Sample Name: CCV1-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007603788	0.1013	mg/L	1.43	2
Se	78	103	0.001142465	0.1010	mg/L	1.33	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 011SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 12:51 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000322461	0.00003500	mg/L	226.43	2
Se	78	103	.0000432926	0.001123	mg/L	26.14	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 012SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:38 pm
Sample Name: blk
Sample Type: CalBlk
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000247192	<0.000	mg/L	45.43	2
Se	78	103	.0000307181	<0.000	mg/L	727.04	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 013SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:40 pm
Sample Name: 0.00
Sample Type: CalStd
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000296298	<0.000	mg/L	2.7E+8	2
Se	78	103	.0000309351	.0000000002	mg/L	1.6E+8	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 014SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:00 pm
Sample Name: BS-0.0005
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000635146	0.0004534	mg/L	15.03	2

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 015SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:22 pm
Sample Name: BS-0.001
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000973447	0.0009060	mg/L	5.90	2
Se	78	103	.0000436505	0.001155	mg/L	17.69	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 016SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:05 pm
Sample Name: ERA-5/1 8141-04
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.006826449	0.4547	mg/L	0.53	2
Se	78	103	0.002090546	0.9356	mg/L	1.42	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 017SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:08 pm
Sample Name: Soln-AB
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001572625	0.02064	mg/L	0.70	2

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 018SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:30 pm
Sample Name: Soln-AA
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib:
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000993049	0.0009322	mg/L	16.27	2
Se	78	103	.0000324387	0.0001366	mg/L	304.90	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 019SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:32 pm
Sample Name: 042415_2 LCS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003696616	0.04906	mg/L	0.49	2
Se	78	103	.0005680233	0.04879	mg/L	1.10	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 020SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:35 pm
Sample Name: 042415_2 LRB
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000288840	<0.000	mg/L	271.90	2
Se	78	103	.0000354157	0.0004071	mg/L	21.81	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 021SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:43 pm
Sample Name: 65238.01s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001054231	0.005070	mg/L	1.76	2
Se	78	103	.0000346329	0.001680	mg/L	128.51	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 022SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:45 pm
Sample Name: 65238.01 dis dil
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 25.00

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000428030	0.004406	mg/L	41.56	2
Se	78	103	.0000291542	<0.000	mg/L	42.80	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 023SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:48 pm
Sample Name: 65238.01s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001085487	0.005279	mg/L	2.37	2
Se	78	103	.0000339717	0.001379	mg/L	137.49	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 024SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:50 pm
Sample Name: 65238.02s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000391882	0.0006394	mg/L	41.15	2
Se	78	103	.0000304667	<0.000	mg/L	356.23	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 025SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:53 pm
Sample Name: 65238.02s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000376232	0.0005347	mg/L	61.38	2
Se	78	103	.0000346029	0.001666	mg/L	100.18	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 026SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:55 pm
Sample Name: 65238.03s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000371347	0.0005020	mg/L	97.81	2
Se	78	103	.0000323330	0.0006350	mg/L	96.33	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 027SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 01:58 pm
Sample Name: 65238.03s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000339399	0.0002883	mg/L	77.59	2
Se	78	103	.0000302901	<0.000	mg/L	273.95	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 028SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:01 pm
Sample Name: 65238.04s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000446948	0.001008	mg/L	35.32	2
Se	78	103	.0000281891	<0.000	mg/L	70.56	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 029SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:03 pm
Sample Name: 65238.04s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000296744	0.000002982	mg/L	3,000	2
Se	78	103	.0000267230	<0.000	mg/L	66.54	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 030SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:06 pm
Sample Name: 65238.09s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002691168	0.01602	mg/L	4.51	2
Se	78	103	.0000282633	<0.000	mg/L	64.02	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 031SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:08 pm
Sample Name: 65238.10s tot MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003830196	0.2542	mg/L	1.01	2
Se	78	103	.0005827459	0.2507	mg/L	1.83	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 032SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:11 pm
Sample Name: 65238.11s tot MSD
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003874383	0.2572	mg/L	0.41	2
Se	78	103	.0005947515	0.2561	mg/L	2.35	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 033SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:13 pm
Sample Name: CCV2-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007140668	0.09514	mg/L	0.42	2
Se	78	103	0.001092045	0.09640	mg/L	1.91	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 034SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:16 pm
Sample Name: CCB2
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000229363	<0.000	mg/L	47.31	2
Se	78	103	.0000260756	<0.000	mg/L	21.21	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 035SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:19 pm
Sample Name: 65238.05s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000567045	0.001811	mg/L	15.86	2
Se	78	103	.0000229963	<0.000	mg/L	28.67	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 036SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:21 pm
Sample Name: 65238.05s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000366912	0.0004724	mg/L	26.67	2
Se	78	103	.0000249666	<0.000	mg/L	72.15	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 037SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:24 pm
Sample Name: 65238.06s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000592354	0.001980	mg/L	11.94	2
Se	78	103	.0000260788	<0.000	mg/L	68.53	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 038SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:26 pm
Sample Name: 65238.06s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000369531	0.0004899	mg/L	67.73	2
Se	78	103	.0000275278	<0.000	mg/L	37.01	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 039SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:29 pm
Sample Name: 65238.07s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0006780734	0.04338	mg/L	1.63	2
Se	78	103	.0000327426	0.0008211	mg/L	163.68	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 040SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:31 pm
Sample Name: 65238.07s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000524360	0.001526	mg/L	32.75	2
Se	78	103	.0000306628	<0.000	mg/L	946.60	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 041SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:34 pm
Sample Name: 65238.08s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000343888	0.0003184	mg/L	103.80	2
Se	78	103	.0000224634	<0.000	mg/L	2.78	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 042SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:36 pm
Sample Name: 65238.08s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000271148	<0.000	mg/L	147.62	2
Se	78	103	.0000203793	<0.000	mg/L	10.27	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 043SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:39 pm
Sample Name: 65238.09s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001203342	0.006068	mg/L	5.09	2
Se	78	103	.0000230544	<0.000	mg/L	14.10	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 044SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:41 pm
Sample Name: 65238.10s dis MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003603172	0.2390	mg/L	0.12	2
Se	78	103	.0005549783	0.2380	mg/L	2.03	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 045SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:44 pm
Sample Name: 65238.11s MSD
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003572821	0.2370	mg/L	3.04	2
Se	78	103	.0005684373	0.2442	mg/L	2.49	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 046SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:47 pm
Sample Name: CCV3-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.006939923	0.09245	mg/L	1.20	2
Se	78	103	0.001051636	0.09273	mg/L	1.56	1

Data Set: MT3-15-0424B
Run Date: 04/24/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 047SMPL.D#
Method: 02-CuSe.M
Acq Time: Apr 24 2015 02:49 pm
Sample Name: CCB3
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 040715
Dilution: 1.000

Operator: JRH std ID: 042315
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: MTD-042415-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000226495	<0.000	mg/L	14.18	2
Se	78	103	.0000223342	<0.000	mg/L	29.22	1

Metals Digestion

3015A \ 3050B

DATE 04/24/15

TIME START 10:30

ANALYST JRM

TIME FINISH 11:00

PREP BATCH MTD- 042415-2

SAMPLE#	BTL ID	SAMPLE AMOUNT GRAMS (g)	FINAL VOLUME (ml)	REMARKS	% TOTAL SOLIDS	DILUTION FACTOR
LCS - 042415-2	----	50	50		—	1
LRB- 042415-2	----	50	50		—	1
65238.01		10		total		5
01				dissolved		
02				tot.		
02				dis.		
03				tot.		
03				dis.		
04				tot.		
04				dis.		
05				tot.		
05				dis		
06				tot		
06				dis		
07				tot		
07				dis		
08				tot		
08				dis		
09				tot.		
10 MS						
11 MSD						
09				dis		
10 MS						
11 MSD						

NOTES: *1) Spike values (unless otherwise stated):*

LCS = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution

Samples: Water = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution

Soil = 0.10 ppm = 50 mls / 1.0 mls of 5ppm Spiking Solution

Spiking Solution – Date Prepared: 4/13/15

2) Spike values for minerals (Ca-Mg-K-Na)

LCS = 1.0 ppm = 50 mls / 0.50 mls HM Stock Solution

Samples (Water or Soil) = 2.0 ppm = 50 mls / 1.0 mls HM Stock Solution

High Purity Stock Solution (HM)- Lot # 1426832

3) HNO_3 Lot # 102053 J.T Baker *4) Centrifuge Tube Lot #* 140418-060-1 Thomas Scientific

5) Balance ID: M2 *Reviewed by* BB *On* 5/4/15

Merit Laboratories, Inc.

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C.O.C. PAGE # 1 OF 1

83523

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: SUSAN HOERTT
COMPANY: HALEY & ALDRICH
ADDRESS: 8899 GANDER CREEK DR
CITY: MIAMISBURG, STATE: OH, ZIP CODE: 45342
PHONE NO.: 937-384-9940 FAX NO.: 937-384-9946 P.O. NO.: 37515
E-MAIL ADDRESS: SHOERTT@haleyaldrich.com QUOTE NO.:

INVOICE TO

CONTACT NAME: SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: RACER ROMULUS
SAMPLER(S) - PLEASE PRINT/SIGN NAME: RACHAVAN P / RSchavan

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☐ EDD ☒ OTHER EQUIS EDD

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	TOTAL COPPER	TOTAL SELENIUM	DISSOLVED COPPER	DISSOLVED SELENIUM	Special Instructions
65238.01	4/14/15	1220	TW101(04-14-2015)(1220)	GW	2			2					X	X	X	X	N
.02		1400	TW104(04-14-2015)(1400)	GW	2			2					X	X	X	X	N
.03		1455	TW105(04-14-2015)(1455)	GW	2			2					X	X	X	X	N
.04		0001	DUP-01(04-14-2015)	GW	2			2					X	X	X	X	FIELD DUPLICATE
.05		0002	RB-01(04-14-2015)	GW	2			2					X	X	X	X	RINSE BLANK
.06	4/15/15	0830	TW109(04-15-2015)(0830)	GW	2			2					X	X	X	X	N
.07		0930	TW107(04-15-2015)(0930)	GW	2			2					X	X	X	X	N
.08		0001	RB-02(04-15-2015)	GW	2			2					X	X	X	X	RINSE BLANK
.09/.10/.11	4/14/15	1600	TW116(04-14-2015)(1600)	GW	6			6					X	X	X	X	N + MS/MSD

RELINQUISHED BY: SIGNATURE/ORGANIZATION: RSchavan (Sampler) HEA DATE: 4/15/15 TIME: 1100
RECEIVED BY: SIGNATURE/ORGANIZATION: MH DATE: 4.15.15 TIME: 1115
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: TIME:

RELINQUISHED BY: SIGNATURE/ORGANIZATION: MH DATE: 4-15-15 TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: Thomas George DATE: 4/15/15 TIME: 1600

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 5.1

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Merit Laboratories Login Checklist

Lab Set ID: S65238
Client: HALEYALDRICH (Haley & Aldrich)
Project: RACER Romulus
Submitted: 04/15/2015 16:00 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Selection				Description	Note
01.	☐ Yes	☒ No	☐ N/A	Samples shipped	
02.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
03.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
04.	☒ Yes	☐ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.1
05.	☒ Yes	☐ No	☐ N/A	Received on ice/ cooling process begun	
06.	☒ Yes	☐ No	☐ N/A	All bottles intact	
07.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
08.	☒ Yes	☐ No	☐ N/A	Do sample have correct chemical preservation	
09.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
10.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
11.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
12.	☒ Yes	☐ No	☐ N/A	Completed pH checks on preserved samples? (no VOAs)	
13.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
14.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
15.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	
16.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
17.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
18.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
19.	☐ Yes	☒ No	☐ N/A	Subcontracting needed? Subcontacted to:	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S65238 Initials: KAG

Client: HALEYALDRICH (Haley & Aldrich)

Project: RACER Romulus

Submitted: 04/15/2015 16:00 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Lab ID	125 ml Plastic HNO_3	125 ml Amber H_2SO_4	250 ml Plastic H_2SO_4	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber NaOH	125 ml Amber $PbCO_3$ NaOH	pH					Notes
								<2	>12	other	ml add	new pH	
S65238.01	X							X					
S65238.01	X							X					
S65238.02	X							X					
S65238.02	X							X					
S65238.03	X							X					
S65238.03	X							X					
S65238.04	X							X					
S65238.04	X							X					
S65238.05	X							X					
S65238.05	X							X					
S65238.06	X							X					
S65238.06	X							X					
S65238.07	X							X					
S65238.07	X							X					
S65238.08	X							X					
S65238.08	X							X					
S65238.09	X							X					
S65238.09	X							X					
S65238.10	X							X					
S65238.10	X							X					
S65238.11	X							X					
S65238.11	X							X					

Sample Set Receipt

Report to

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com
Contacts:

Invoice to

Attention: Accounts Payable
Address: Haley & Aldrich, Inc.
70 Blanchard Rd.
Ste. 430
Burlington, MA 01803-5100

Phone: 617-886-7400 FAX: 617-886-7900
Email: Haley Aldrich Invoice Group

Set ID: S65238 Location: HALEYALDRICH (Haley & Aldrich) PO #: 37515 Login by: KAG
Project: RACER Romulus Backlog Note:
Submitted: 04/15/2015 16:00 Due Date: 04/29/2015 Rush: No Collected by: Raghavan P QC Level: 3 Custom Limits Present: No
Approved by: Site: Work Order#: Bill to Acct: Bill to Dept:

Sample ID	Sample Tag	Matrix	Date/Time Collected	COC Ref
S65238.01	TW101(04-14-2015)(1220)	Groundwater	04/14/2015 12:20	83523
S65238.02	TW104(04-14-2015)(1400)	Groundwater	04/14/2015 14:00	83523
S65238.03	TW105(04-14-2015)(1455)	Groundwater	04/14/2015 14:55	83523
S65238.04	DUP-01(04-14-2015)	Groundwater Quality	04/14/2015 00:01	83523
S65238.05	RB-01(04-14-2015)	Groundwater Quality	04/14/2015 00:02	83523
S65238.06	TW109(04-15-2015)(0830)	Groundwater	04/15/2015 08:30	83523
S65238.07	TW107(04-15-2015)(0930)	Groundwater	04/15/2015 09:30	83523
S65238.08	RB-02(04-15-2015)	Groundwater Quality	04/15/2015 00:01	83523
S65238.09	TW116(04-14-2015)(1600)	Groundwater	04/14/2015 16:00	83523
S65238.10	TW116(04-14-2015)(1600) MS	Groundwater	04/14/2015 16:00	83523
S65238.11	TW116(04-14-2015)(1600) MSD	Groundwater	04/14/2015 16:00	83523

Samples: S65238.01-11

Analysis Code	Analysis Title	Method	Units	Holding Date
2155WMS	Copper	E200.8	mg/L	10/11/2015
2205WMS	Selenium	E200.8	mg/L	10/11/2015
2155DIS	Copper, Dissolved	E200.8	mg/L	10/11/2015
2205DIS	Selenium, Dissolved	E200.8	mg/L	10/11/2015
1605W	Metal Digestion	SW3015A		10/11/2015
1605DIS	Metal Digestion, Dissolved Metals	SW3015A		10/11/2015

MERIT LABORATORIES, INC.
2680 EAST LANSING DRIVE EAST LANSING • MICHIGAN • 48823
PHONE: 517-332-0167 FAX: 517-332-6333
FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

RACER ROMULUS

SDG Batch:

66907

Pages 1 - 123

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FULL SERVICE ANALYTICAL TESTING FIELD SERVICES • CONSULTING • TRAINING

HALEY & ALDRICH, INC.

PROJECT:
RACER ROMULUS

SDG Batch:
66907.01

Prepared by:
Merit Laboratories, Inc.

August 5, 2015

Laboratory Name: Merit Laboratories, Inc.
City / State: East Lansing, MI
Sample Delivery Group: S66907.01 - .11

	References		Pages		Checklist	
Deliverable	**Form**	**CLP**	**From**	**To**	**Lab**	**Audit**
1. **Inventory Sheet** (not numbered)	This	DC-2			☑	☐
2. **SDG Case Narrative**			1	1	☑	☐
3. **Analytical Summary Report**			2	31	☑	☐
4. **ICP/MS Metals Data**			32	119		
Sequence / Injection Log		F.0			☑	☐
Data Sheet		F. I			☑	☐
Initial Calibration and Calibration Verification		F. IIA			☑	☐
CRDL Standards		F. IIB			☑	☐
Blanks		F. III			☑	☐
Interference Check Sample		F. IVB			☑	☐
Spike Sample Recovery		F. VA			☑	☐
Post-Digest Spike Sample Recovery		F. VB			☑	☐
Duplicates		F. VI			☐	☐
Laboratory Control Sample		F. VII			☑	☐
Serial Dilutions		F. VIII			☑	☐
Analysis Run Log		F. XIII			☑	☐
ICP/MS Tune		F. XIV			☑	☐
Internal Standard Relative Intensity Summary		F. XV			☑	☐
Instrument Detection Limits (IDL) & MDLs		F. IX			☑	☐
Linear Ranges		F. XI			☑	☐
ICP/MS Raw Data					☑	☐
Preparation / Digestion Log		F. XII			☑	☐
5. **Shipping / Receiving Documents**			120	123		
Chain-of-Custody					☑	☐
Sample log-in sheet					☑	
Sample Receipt					☑	☐

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CASE NARRATIVE
CLIENT: HALEY & ALDRICH, INC.
PROJECT: RACER ROMULUS
Merit IDs: S66907.01-S66907.11

Field Sampling: Eric Shirley performed the fieldwork.

Analytical Bottles: All bottles were sent with the appropriate preservation in it. Please see the bottle list attached.

Sample Receiving: All samples were received by the laboratory on ice (07/15/2015). Dates and signatures can be found on the Chain of Custody Records. The sample receipts specify the actual tags and bottles received and logged into the laboratory "vlims" system.

ANALYSES

Metals: All metal analyses were performed according to Method 200.8. The metal digestion was performed according to Method 3015A. The QC requirements were followed for this specific project and method-specified criteria were met. *Outliers*: None

Data Reporting: The analytical reports are reflective of what is on a given Chain-of-Custody record (COC). Merit's IDs were assigned to the samples as they were delivered and accepted by our log-in staff.

"I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness, for other than the condition detailed above. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature."

Barbara Ball

Barb Ball — 8/5/15
QA Officer — Date

Analytical Laboratory Report

Report ID: S66907.01(01)
Generated on 08/03/2015

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
Kevin George (kgeorge@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S66907.01-S66907.11
Project: RACER Romulus
Collected Date: 07/14/2015 - 07/15/2015
Submitted Date/Time: 07/15/2015 14:20
Sampled by: Eric Shirley
P.O. #: 37515

Table of Contents

Maya Murshak
Technical Director

Analytical Laboratory Report

General Report Notes

Results relate only to items tested as received by laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (11 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S66907.01	RB-01(07-14-2015)	Groundwater Quality	07/14/15 00:01
S66907.02	TW116(07-14-2015)(1205)	Groundwater	07/14/15 12:05
S66907.03	TW101(07-14-2015)(1325)	Groundwater	07/14/15 13:25
S66907.04	TW104(07-14-2015)(1440)	Groundwater	07/14/15 14:40
S66907.05	TW105(07-14-2015)(1555)	Groundwater	07/14/15 15:55
S66907.06	TW105(07-14-2015)(1555) MS	Groundwater	07/14/15 15:55
S66907.07	TW105(07-14-2015)(1555) MSD	Groundwater	07/14/15 15:55
S66907.08	DUP01(07-15-2015)	Groundwater Quality	07/15/15 00:01
S66907.09	RB02(07-15-2015)	Groundwater Quality	07/15/15 00:02
S66907.10	TW107(07-15-2015)(0815)	Groundwater	07/15/15 08:15
S66907.11	TW109(07-15-2015)(0930)	Groundwater	07/15/15 09:30

Analytical Laboratory Report

Lab Sample ID: S66907.01
Sample Tag: RB-01(07-14-2015)
Collected Date/Time: 07/14/2015 00:01
Matrix: Groundwater Quality
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:28	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 16:46	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:28	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 16:46	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.02
Sample Tag: TW116(07-14-2015)(1205)
Collected Date/Time: 07/14/2015 12:05
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:51	CCM	7440-50-8	
Copper	0.007	mg/L	0.005	E200.8	08/03/15 16:54	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:51	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 16:54	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.03
Sample Tag: TW101(07-14-2015)(1325)
Collected Date/Time: 07/14/2015 13:25
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:52	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 15:36	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:52	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 15:36	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.04
Sample Tag: TW104(07-14-2015)(1440)
Collected Date/Time: 07/14/2015 14:40
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:43	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 15:41	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 15:43	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 15:41	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.05
Sample Tag: TW105(07-14-2015)(1555)
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:30	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 15:57	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:30	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 15:57	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.06
Sample Tag: TW105(07-14-2015)(1555) MS
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	0.244	mg/L	0.005	E200.8	08/03/15 16:33	CCM	7440-50-8	
Copper	0.250	mg/L	0.005	E200.8	08/03/15 15:59	CCM	7440-50-8	
Selenium, Dissolved	0.258	mg/L	0.005	E200.8	08/03/15 16:33	CCM	7782-49-2	
Selenium	0.258	mg/L	0.005	E200.8	08/03/15 15:59	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.07
Sample Tag: TW105(07-14-2015)(1555) MSD
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	0.245	mg/L	0.005	E200.8	08/03/15 16:35	CCM	7440-50-8	
Copper	0.247	mg/L	0.005	E200.8	08/03/15 16:02	CCM	7440-50-8	
Selenium, Dissolved	0.259	mg/L	0.005	E200.8	08/03/15 16:35	CCM	7782-49-2	
Selenium	0.262	mg/L	0.005	E200.8	08/03/15 16:02	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.08
Sample Tag: DUP01(07-15-2015)
Collected Date/Time: 07/15/2015 00:01
Matrix: Groundwater Quality
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:12	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 15:54	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:12	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 15:54	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.09
Sample Tag: RB02(07-15-2015)
Collected Date/Time: 07/15/2015 00:02
Matrix: Groundwater Quality
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:17	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 16:15	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:17	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 16:15	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.10
Sample Tag: TW107(07-15-2015)(0815)
Collected Date/Time: 07/15/2015 08:15
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:22	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 16:20	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:22	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 16:20	CCM	7782-49-2	

Analytical Laboratory Report

Lab Sample ID: S66907.11
Sample Tag: TW109(07-15-2015)(0930)
Collected Date/Time: 07/15/2015 09:30
Matrix: Groundwater
COC Reference: 90629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	2.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metal Digestion	Completed			SW3015A	08/03/15 11:00	CCM		
Metals								
Copper, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:28	CCM	7440-50-8	
Copper	Not detected	mg/L	0.005	E200.8	08/03/15 16:25	CCM	7440-50-8	
Selenium, Dissolved	Not detected	mg/L	0.005	E200.8	08/03/15 16:28	CCM	7782-49-2	
Selenium	Not detected	mg/L	0.005	E200.8	08/03/15 16:25	CCM	7782-49-2	

Quality Control Cover Page

Report ID: S66907.01(01)
Report Date: 08/03/2015
Project: RACER Romulus
Lab Sample ID(s): S66907.01-S66907.11

Report to:

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Sample ID	Sample Tag	Collected	Matrix	Analysis Departments
S66907.01	RB-01(07-14-2015)	07/14/2015 00:01	Groundwater	Extraction / Prep., Metals
S66907.02	TW116(07-14-2015)(1205)	07/14/2015 12:05	Groundwater	Extraction / Prep., Metals
S66907.03	TW101(07-14-2015)(1325)	07/14/2015 13:25	Groundwater	Extraction / Prep., Metals
S66907.04	TW104(07-14-2015)(1440)	07/14/2015 14:40	Groundwater	Extraction / Prep., Metals
S66907.05	TW105(07-14-2015)(1555)	07/14/2015 15:55	Groundwater	Extraction / Prep., Metals
S66907.06	TW105(07-14-2015)(1555) MS	07/14/2015 15:55	Groundwater	Extraction / Prep., Metals
S66907.07	TW105(07-14-2015)(1555) MSD	07/14/2015 15:55	Groundwater	Extraction / Prep., Metals
S66907.08	DUP01(07-15-2015)	07/15/2015 00:01	Groundwater	Extraction / Prep., Metals
S66907.09	RB02(07-15-2015)	07/15/2015 00:02	Groundwater	Extraction / Prep., Metals
S66907.10	TW107(07-15-2015)(0815)	07/15/2015 08:15	Groundwater	Extraction / Prep., Metals
S66907.11	TW109(07-15-2015)(0930)	07/15/2015 09:30	Groundwater	Extraction / Prep., Metals

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

Quality Control Report

Report ID: QC-S66907.01(01)
Generated on 08/05/2015

Report to

Attention: Susan Hoertt
Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S66907.01-S66907.11
Project: RACER Romulus
Submitted Date/Time: 07/15/2015 14:20
Sampled by: Eric Shirley
P.O. #: 37515

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S66907.01
Sample Tag: RB-01(07-14-2015)
Collected Date/Time: 07/14/2015 00:01
Matrix: Groundwater Quality
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 15:28	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:46	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 15:28	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:46	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S66907.02
Sample Tag: TW116(07-14-2015)(1205)
Collected Date/Time: 07/14/2015 12:05
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:51	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:54	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:51	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:54	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.03
Sample Tag: TW101(07-14-2015)(1325)
Collected Date/Time: 07/14/2015 13:25
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 15:52	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 15:36	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 15:52	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 15:36	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S66907.04
Sample Tag: TW104(07-14-2015)(1440)
Collected Date/Time: 07/14/2015 14:40
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 15:43	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 15:41	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 15:43	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 15:41	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.05
Sample Tag: TW105(07-14-2015)(1555)
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:30	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 15:57	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:30	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 15:57	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

QC Report - Analysis Summary

Lab Sample ID: S66907.06
Sample Tag: TW105(07-14-2015)(1555) MS
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:33	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 15:59	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:33	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 15:59	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.07
Sample Tag: TW105(07-14-2015)(1555) MSD
Collected Date/Time: 07/14/2015 15:55
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:35	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:02	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:35	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:02	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.08
Sample Tag: DUP01(07-15-2015)
Collected Date/Time: 07/15/2015 00:01
Matrix: Groundwater Quality
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:12	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 15:54	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:12	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 15:54	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.09
Sample Tag: RB02(07-15-2015)
Collected Date/Time: 07/15/2015 00:02
Matrix: Groundwater Quality
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:17	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:15	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:17	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:15	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.10
Sample Tag: TW107(07-15-2015)(0815)
Collected Date/Time: 07/15/2015 08:15
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:22	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:20	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:22	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:20	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Lab Sample ID: S66907.11
Sample Tag: TW109(07-15-2015)(0930)
Collected Date/Time: 07/15/2015 09:30
Matrix: Groundwater
COC Reference: 90629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Metals						
Copper, Dissolved	E200.8	08/03/15 16:28	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Copper	E200.8	08/03/15 16:25	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium, Dissolved	E200.8	08/03/15 16:28	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD
Selenium	E200.8	08/03/15 16:25	MT3-15-0803B	MTD-080315-2	No	LCS/BLK/MS/MSD

Metals, Prep Batch ID: MTD-080315-2

Surrogates: No, QC Types: LCS/BLK/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S66907.01	Copper, Dissolved	E200.8	08/03/15 15:28	MT3-15-0803B
S66907.01	Copper	E200.8	08/03/15 16:46	MT3-15-0803B
S66907.01	Selenium, Dissolved	E200.8	08/03/15 15:28	MT3-15-0803B
S66907.01	Selenium	E200.8	08/03/15 16:46	MT3-15-0803B
S66907.02	Copper, Dissolved	E200.8	08/03/15 16:51	MT3-15-0803B
S66907.02	Copper	E200.8	08/03/15 16:54	MT3-15-0803B
S66907.02	Selenium, Dissolved	E200.8	08/03/15 16:51	MT3-15-0803B
S66907.02	Selenium	E200.8	08/03/15 16:54	MT3-15-0803B
S66907.03	Copper, Dissolved	E200.8	08/03/15 15:52	MT3-15-0803B
S66907.03	Copper	E200.8	08/03/15 15:36	MT3-15-0803B
S66907.03	Selenium, Dissolved	E200.8	08/03/15 15:52	MT3-15-0803B
S66907.03	Selenium	E200.8	08/03/15 15:36	MT3-15-0803B
S66907.04	Copper, Dissolved	E200.8	08/03/15 15:43	MT3-15-0803B
S66907.04	Copper	E200.8	08/03/15 15:41	MT3-15-0803B
S66907.04	Selenium, Dissolved	E200.8	08/03/15 15:43	MT3-15-0803B
S66907.04	Selenium	E200.8	08/03/15 15:41	MT3-15-0803B
S66907.05	Copper, Dissolved	E200.8	08/03/15 16:30	MT3-15-0803B
S66907.05	Copper	E200.8	08/03/15 15:57	MT3-15-0803B
S66907.05	Selenium, Dissolved	E200.8	08/03/15 16:30	MT3-15-0803B
S66907.05	Selenium	E200.8	08/03/15 15:57	MT3-15-0803B
S66907.06	Copper, Dissolved	E200.8	08/03/15 16:33	MT3-15-0803B
S66907.06	Copper	E200.8	08/03/15 15:59	MT3-15-0803B
S66907.06	Selenium, Dissolved	E200.8	08/03/15 16:33	MT3-15-0803B
S66907.06	Selenium	E200.8	08/03/15 15:59	MT3-15-0803B
S66907.07	Copper, Dissolved	E200.8	08/03/15 16:35	MT3-15-0803B
S66907.07	Copper	E200.8	08/03/15 16:02	MT3-15-0803B
S66907.07	Selenium, Dissolved	E200.8	08/03/15 16:35	MT3-15-0803B
S66907.07	Selenium	E200.8	08/03/15 16:02	MT3-15-0803B
S66907.08	Copper, Dissolved	E200.8	08/03/15 16:12	MT3-15-0803B
S66907.08	Copper	E200.8	08/03/15 15:54	MT3-15-0803B
S66907.08	Selenium, Dissolved	E200.8	08/03/15 16:12	MT3-15-0803B
S66907.08	Selenium	E200.8	08/03/15 15:54	MT3-15-0803B
S66907.09	Copper, Dissolved	E200.8	08/03/15 16:17	MT3-15-0803B
S66907.09	Copper	E200.8	08/03/15 16:15	MT3-15-0803B
S66907.09	Selenium, Dissolved	E200.8	08/03/15 16:17	MT3-15-0803B
S66907.09	Selenium	E200.8	08/03/15 16:15	MT3-15-0803B
S66907.10	Copper, Dissolved	E200.8	08/03/15 16:22	MT3-15-0803B
S66907.10	Copper	E200.8	08/03/15 16:20	MT3-15-0803B
S66907.10	Selenium, Dissolved	E200.8	08/03/15 16:22	MT3-15-0803B
S66907.10	Selenium	E200.8	08/03/15 16:20	MT3-15-0803B
S66907.11	Copper, Dissolved	E200.8	08/03/15 16:28	MT3-15-0803B
S66907.11	Copper	E200.8	08/03/15 16:25	MT3-15-0803B
S66907.11	Selenium, Dissolved	E200.8	08/03/15 16:28	MT3-15-0803B
S66907.11	Selenium	E200.8	08/03/15 16:25	MT3-15-0803B

Form 0: Sequence Log

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Filename	*Run Time*	*Sample ID*	*Matrix*	*QC Type*
001	Aug 3 2015 02:25 pm	blk	Liquid	
002	Aug 3 2015 02:28 pm	0.00	Liquid	
003	Aug 3 2015 02:30 pm	0.0005	Liquid	
004	Aug 3 2015 02:33 pm	0.001	Liquid	
005	Aug 3 2015 02:35 pm	0.005	Liquid	
006	Aug 3 2015 02:38 pm	0.02	Liquid	
007	Aug 3 2015 02:41 pm	0.05	Liquid	
008	Aug 3 2015 02:43 pm	0.20	Liquid	
009	Aug 3 2015 02:46 pm	ICV-0.10	Liquid	ICV
010	Aug 3 2015 02:49 pm	CCV1-0.10	Liquid	CCV
011	Aug 3 2015 02:52 pm	Rinse	Liquid	
012	Aug 3 2015 02:54 pm	CCB1	Liquid	CCB
013	Aug 3 2015 02:57 pm	ICB	Liquid	ICB
014	Aug 3 2015 03:00 pm	BS-0.0005	Liquid	BS
015	Aug 3 2015 03:02 pm	BS-0.001	Liquid	BS
016	Aug 3 2015 03:05 pm	BS-0.002	Liquid	BS
017	Aug 3 2015 03:08 pm	ERA-5/1 8141-04	Liquid	ERA
018	Aug 3 2015 03:10 pm	Soln-AB	Liquid	AB
019	Aug 3 2015 03:13 pm	Soln-AA	Liquid	AA
020	Aug 3 2015 03:15 pm	08/03 LCS2-0.05	Liquid	LCS
021	Aug 3 2015 03:18 pm	Rinse	Liquid	
022	Aug 3 2015 03:21 pm	08/03 LRB2	Liquid	LRB
023	Aug 3 2015 03:23 pm	66907.01 Dil	Liquid	DIL
024	Aug 3 2015 03:26 pm	66907.01s tot	Liquid	
025	Aug 3 2015 03:28 pm	66907.01s dis	Liquid	S
026	Aug 3 2015 03:31 pm	66907.02s tot	Liquid	
027	Aug 3 2015 03:33 pm	66907.02s dis	Liquid	
028	Aug 3 2015 03:36 pm	66907.03s tot	Liquid	S
029	Aug 3 2015 03:52 pm	66907.03s dis	Liquid	S
030	Aug 3 2015 03:41 pm	66907.04s tot	Liquid	S
031	Aug 3 2015 03:43 pm	66907.04s dis	Liquid	S
032	Aug 3 2015 03:54 pm	66907.08s tot	Liquid	S
033	Aug 3 2015 03:57 pm	66907.05s tot	Liquid	S
034	Aug 3 2015 03:59 pm	66907.06s tot MS-0.05	Liquid	MS
035	Aug 3 2015 04:02 pm	66907.07s tot MSD-0.05	Liquid	MSD
036	Aug 3 2015 04:04 pm	CCV2-0.10	Liquid	CCV
037	Aug 3 2015 04:07 pm	Rinse	Liquid	
038	Aug 3 2015 04:10 pm	CCB2	Liquid	CCB
039	Aug 3 2015 04:12 pm	66907.08s dis	Liquid	S
040	Aug 3 2015 04:15 pm	66907.09s tot	Liquid	S
041	Aug 3 2015 04:17 pm	66907.09s dis	Liquid	S
042	Aug 3 2015 04:20 pm	66907.10s tot	Liquid	S
043	Aug 3 2015 04:22 pm	66907.10s dis	Liquid	S
044	Aug 3 2015 04:25 pm	66907.11s tot	Liquid	S
045	Aug 3 2015 04:28 pm	66907.11s dis	Liquid	S
046	Aug 3 2015 04:30 pm	66907.05s dis	Liquid	S
047	Aug 3 2015 04:33 pm	66907.06s dis MS-0.05	Liquid	MS
048	Aug 3 2015 04:35 pm	66907.07s dis MSD-0.05	Liquid	MSD
049	Aug 3 2015 04:38 pm	CCV3-0.10	Liquid	CCV
050	Aug 3 2015 04:40 pm	Rinse	Liquid	
051	Aug 3 2015 04:43 pm	CCB3	Liquid	CCB
052	Aug 3 2015 04:46 pm	66907.01s tot	Liquid	S
053	Aug 3 2015 04:48 pm	66907.02s tot	Liquid	S

Form 0: Sequence Log

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Filename	*Run Time*	*Sample ID*	*Matrix*	*QC Type*
054	Aug 3 2015 04:51 pm	66907.02s dis	Liquid	S
055	Aug 3 2015 04:54 pm	66907.02s tot	Liquid	S
056	Aug 3 2015 04:57 pm	CCV3-0.10	Liquid	CCV
057	Aug 3 2015 04:59 pm	CCB3	Liquid	CCB

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.01
Sample Tag: RB-01(07-14-2015)
Date Collected: 07/14/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.02
Sample Tag: TW116(07-14-2015)(1205)
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.007	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.03
Sample Tag: TW101(07-14-2015)(1325)
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.04
Sample Tag: TW104(07-14-2015)(1440)
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.05
Sample Tag: TW105(07-14-2015)(1555)
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.06
Sample Tag: TW105(07-14-2015)(1555) MS
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.250	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	0.258	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	0.244	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	0.258	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.07
Sample Tag: TW105(07-14-2015)(1555) MSD
Date Collected: 07/14/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	0.247	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	0.262	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	0.245	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	0.259	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.08
Sample Tag: DUP01(07-15-2015)
Date Collected: 07/15/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.09
Sample Tag: RB02(07-15-2015)
Date Collected: 07/15/2015
Matrix: Groundwater Quality

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.10
Sample Tag: TW107(07-15-2015)(0815)
Date Collected: 07/15/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Lab Sample ID: S66907.11
Sample Tag: TW109(07-15-2015)(0930)
Date Collected: 07/15/2015
Matrix: Groundwater

CAS #	Analyte	Result	RL	MDL	Units	Dilute	Run Date	Notes
7440-50-8	Copper	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium	Not detected	0.005	0.00048	mg/L	5	08/03/2015	
7440-50-8	Copper, Dissolved	Not detected	0.005	0.00019	mg/L	5	08/03/2015	
7782-49-2	Selenium, Dissolved	Not detected	0.005	0.00048	mg/L	5	08/03/2015	

Form 1: Metals Analysis Data Sheet - Flag Description Key

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Note/Qualifier Key	
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
m	Duplicate injection precision not met
n	Spiked sample recovery outside control limits
s	Reported value determined by the MSA
u	Analyte not detected above reporting limit
A	TIC is a suspected aldol-condensation product
B	Compound also found in associated method blank
C	Analyte presence confirmed by GC/MS
D	Identified in an analysis at a secondary dilution factor
E	Concentration exceeds calibration range
J	Estimated value less than reporting limit, but greater than MDL
N	Presumptive evidence of TIC
P	Pesticide/Aroclor 2-column RPD exceeds limit
U	Analyte not detected above reporting limit
!	Result is outside of stated limit criteria
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
K	Elevated reporting limit due to low total solids
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
Q	Reported result represents most abundant aroclor
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
V	Accurate value not available due to presence of multiple aroclors
W	Surrogate result not applicable due to sample dilution
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
Z	Estimated result due to matrix interference
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
r	This analyte is being reported as the best result from multiple runs
x	Preserved from bulk sample
d	Duplicate analysis not within control limits

Form 2A: Initial and Continuing Calibration Verification

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
009 ICV-0.10	ICV	1.000	Cu	0.100	0.10	100	90/110	mg/L	Liquid
			Se	0.101	0.10	101	90/110		
010 CCV1-0.10	CCV	1.000	Cu	0.100	0.10	100	90/110	mg/L	Liquid
			Se	0.0983	0.10	98	90/110		
036 CCV2-0.10	CCV	1.000	Cu	0.100	0.10	100	90/110	mg/L	Liquid
			Se	0.0973	0.10	97	90/110		
049 CCV3-0.10	CCV	1.000	Cu	0.0969	0.10	97	90/110	mg/L	Liquid
			Se	0.0986	0.10	99	90/110		
056 CCV3-0.10	CCV	1.000	Cu	0.0980	0.10	98	90/110	mg/L	Liquid
			Se	0.0992	0.10	99	90/110		

Form 2B: Performance Sample Evaluation

ERA Lot No.: 8131-04

Data Set ID: MT3-15-0803B

Instrument ID: HP ICP/MS 2

Analysis Date: 08/03/15

Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*Lower Accept*	*Upper Accept*	*Units*	*Matrix*
017 ERA-5/1 8141-04	5.000	Cu	0.441	0.443	100	0.377	0.510	mg/L	Liquid
		Se	0.898	0.928	97	0.788	1.070		

Form 3: Blanks

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Raw Conc*	*Units*	*Matrix*
012 CCB1	CCB	1.000	Cu	<0.001	0.0002078	mg/L	Liquid
			Se	<0.001	0.0002306		
013 ICB	ICB	1.000	Cu	<0.001	0.00005608	mg/L	Liquid
			Se	<0.001	<0.000		
022 08/03 LRB2	LRB	1.000	Cu	<0.001	0.0002005	mg/L	Liquid
			Se	<0.001	0.00009537		
038 CCB2	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0001081		
051 CCB3	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	<0.000		
057 CCB3	CCB	1.000	Cu	<0.001	<0.000	mg/L	Liquid
			Se	<0.001	0.0004338		

Form 4B: ICP Interference Check Sample

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Sample Name	*QC Type*	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
018 Soln-AB	AB	1.000	Cu	0.0231	0.02	116	70/130	mg/L	Liquid
019 Soln-AA	AA	1.000	Cu	<0.001	0.0	N/A	N/A	mg/L	Liquid
			Se	<0.001	0.0	N/A	N/A		

Form 5A: Matrix Spike Sample Recovery

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Spike Name	Sample Name	Dilute	Element	Spike Conc	Sample Conc	Spike Amount	%Rec	LCL/UCL	Units	Matrix
014 BS-0.0005		1.000	Cu	0.00053	ND	0.0005	106	70/130	mg/L	Liquid
			Se	0.00052	ND	0.0005	104	70/130		
015 BS-0.001		1.000	Cu	0.00091	ND	0.001	91	70/130	mg/L	Liquid
			Se	0.00096	ND	0.001	96	70/130		
016 BS-0.002		1.000	Cu	0.00195	ND	0.002	98	70/130	mg/L	Liquid
			Se	0.00183	ND	0.002	92	70/130		
034 66907.06s tot	**033 66907.05s tot**	5.000	Cu	0.250	<0.005	0.25	100	75/125	mg/L	Liquid
			Se	0.258	<0.005	0.25	103	75/125		
047 66907.06s dis	**046 66907.05s dis**	5.000	Cu	0.244	<0.005	0.25	98	75/125	mg/L	Liquid
			Se	0.258	<0.005	0.25	103	75/125		

Form 5B: Matrix Spike Duplicate Evaluation

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Duplicate Name	*Sample Name*	*Dilute*	*Element*	*Dup Conc*	*Samp Conc*	*%RPD*	*LCL/UCL*	*Units*	*Matrix*
035 66907.07s tot	**034 66907.06s tot**	5.000	Cu	0.247	0.250	1	0/20	mg/L	Liquid
			Se	0.262	0.258	2	0/20		
048 66907.07s dis	**047 66907.06s dis**	5.000	Cu	0.245	0.244	0	0/20	mg/L	Liquid
			Se	0.259	0.258	0	0/20		

Form 7: Laboratory Control Sample

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Sample Name	*Dilute*	*Element*	*Sample Conc*	*Actual Conc*	*%Rec*	*LCL/UCL*	*Units*	*Matrix*
020 08/03 LCS2-0.05	1.000	Cu	0.0508	0.05	102	85/115	mg/L	Liquid
		Se	0.0494	0.05	99	85/115		

Form 8: Serial Dilutions

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Duplicate Name	Sample Name	Dilute	Element	Dup Conc	Samp Conc	%D	LCL/UCL	Units	Matrix
023 66907.01 Dil	**052 66907.01s tot**	25.00	Cu	0.013	<0.005	NC	0/10	mg/L	Liquid
			Se	<0.005	<0.005	NC	0/10		

Serial Dilution test not applicable if measured sample concentration is < 100 x MDL.

Form 13: Analysis Run Log

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Filename	*Run Time*	*Matrix*	*Analytes*
001 blk	Aug 3 2015 02:25 pm	Liquid	
002 0.00	Aug 3 2015 02:28 pm	Liquid	
003 0.0005	Aug 3 2015 02:30 pm	Liquid	
004 0.001	Aug 3 2015 02:33 pm	Liquid	
005 0.005	Aug 3 2015 02:35 pm	Liquid	
006 0.02	Aug 3 2015 02:38 pm	Liquid	
007 0.05	Aug 3 2015 02:41 pm	Liquid	
008 0.20	Aug 3 2015 02:43 pm	Liquid	
009 ICV-0.10	Aug 3 2015 02:46 pm	Liquid	
010 CCV1-0.10	Aug 3 2015 02:49 pm	Liquid	
011 Rinse	Aug 3 2015 02:52 pm	Liquid	
012 CCB1	Aug 3 2015 02:54 pm	Liquid	
013 ICB	Aug 3 2015 02:57 pm	Liquid	
014 BS-0.0005	Aug 3 2015 03:00 pm	Liquid	
015 BS-0.001	Aug 3 2015 03:02 pm	Liquid	
016 BS-0.002	Aug 3 2015 03:05 pm	Liquid	
017 ERA-5/1 8141-04	Aug 3 2015 03:08 pm	Liquid	
018 Soln-AB	Aug 3 2015 03:10 pm	Liquid	
019 Soln-AA	Aug 3 2015 03:13 pm	Liquid	
020 08/03 LCS2-0.05	Aug 3 2015 03:15 pm	Liquid	
021 Rinse	Aug 3 2015 03:18 pm	Liquid	
022 08/03 LRB2	Aug 3 2015 03:21 pm	Liquid	
023 66907.01 Dil	Aug 3 2015 03:23 pm	Liquid	
024 66907.01s tot	Aug 3 2015 03:26 pm	Liquid	
025 66907.01s dis	Aug 3 2015 03:28 pm	Liquid	
026 66907.02s tot	Aug 3 2015 03:31 pm	Liquid	
027 66907.02s dis	Aug 3 2015 03:33 pm	Liquid	
028 66907.03s tot	Aug 3 2015 03:36 pm	Liquid	
029 66907.03s dis	Aug 3 2015 03:52 pm	Liquid	
030 66907.04s tot	Aug 3 2015 03:41 pm	Liquid	
031 66907.04s dis	Aug 3 2015 03:43 pm	Liquid	
032 66907.08s tot	Aug 3 2015 03:54 pm	Liquid	
033 66907.05s tot	Aug 3 2015 03:57 pm	Liquid	
034 66907.06s tot MS-0.05	Aug 3 2015 03:59 pm	Liquid	
035 66907.07s tot MSD-0.05	Aug 3 2015 04:02 pm	Liquid	
036 CCV2-0.10	Aug 3 2015 04:04 pm	Liquid	
037 Rinse	Aug 3 2015 04:07 pm	Liquid	
038 CCB2	Aug 3 2015 04:10 pm	Liquid	
039 66907.08s dis	Aug 3 2015 04:12 pm	Liquid	
040 66907.09s tot	Aug 3 2015 04:15 pm	Liquid	
041 66907.09s dis	Aug 3 2015 04:17 pm	Liquid	
042 66907.10s tot	Aug 3 2015 04:20 pm	Liquid	
043 66907.10s dis	Aug 3 2015 04:22 pm	Liquid	
044 66907.11s tot	Aug 3 2015 04:25 pm	Liquid	
045 66907.11s dis	Aug 3 2015 04:28 pm	Liquid	
046 66907.05s dis	Aug 3 2015 04:30 pm	Liquid	
047 66907.06s dis MS-0.05	Aug 3 2015 04:33 pm	Liquid	
048 66907.07s dis MSD-0.05	Aug 3 2015 04:35 pm	Liquid	
049 CCV3-0.10	Aug 3 2015 04:38 pm	Liquid	
050 Rinse	Aug 3 2015 04:40 pm	Liquid	
051 CCB3	Aug 3 2015 04:43 pm	Liquid	
052 66907.01s tot	Aug 3 2015 04:46 pm	Liquid	
053 66907.02s tot	Aug 3 2015 04:48 pm	Liquid	

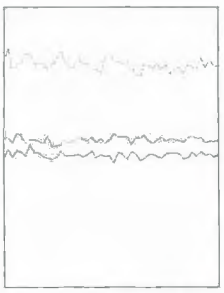
Form 13: Analysis Run Log

Data Set ID: MT3-15-0803B
Instrument ID: HP ICP/MS 2
Analysis Date: 08/03/15
Analyst: JRH

Filename	*Run Time*	*Matrix*	*Analytes*
054 66907.02s dis	Aug 3 2015 04:51 pm	Liquid	
055 66907.02s tot	Aug 3 2015 04:54 pm	Liquid	
056 CCV3-0.10	Aug 3 2015 04:57 pm	Liquid	
057 CCB3	Aug 3 2015 04:59 pm	Liquid	

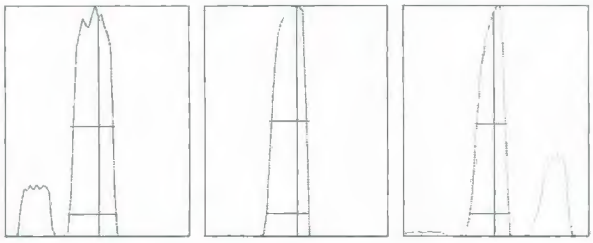
Tune Report

Tune File : nogas.u
Comment :



m/z	Range	Count	Mean	RSD%	Background
7	5,000	2376.0	2360.8	2.39	1.80
89	10,000	5244.0	5261.2	2.11	1.30
205	5,000	3921.0	3974.8	2.71	3.20

Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 50
Oxide: 156/140 1.077%
Doubly Charged: 70/140 3.225%



m/z:	7	89	205
Height:	2,439	5,279	3,956
Axis:	7.05	89.05	205.00
W-50%:	0.70	0.65	0.50
W-10%:	0.800	0.700	0.6500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec
Y axis : Linear

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	-1.6 V	AMU Gain	:	132
RF Matching	:	1.75 V	Extract 2	:	-99 V	AMU Offset	:	123
Smpl Depth	:	9 mm	Omega Bias-ce	:	-20 V	Axis Gain	:	0.9992
Torch-H	:	0.5 mm	Omega Lens-ce	:	1.4 V	Axis Offset	:	-0.03
Torch-V	:	0.6 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.69 L/min	QP Focus	:	3 V			
Makeup Gas	:	0 L/min	Cell Exit	:	-34 V	===Detector Parameters===		
Optional Gas	:	0 %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1810 V
Sample Pump	:	--- rps	OctP RF	:	125 V	Pulse HV	:	1480 V
S/C Temp	:	0 degC	OctP Bias	:	-6 V			

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	0 %

Tune File : he.u

He Gas:	2.8 mL/min	m/z	Count(Mean)	RSD%	Integration Time: 0.1000sec
Optional Gas:	0 %	51	668.8	4.44	
QP Focus:	-7 V	59	1127.7	3.32	
Cell Exit:	-40 V	89	1317.0	3.44	
OctP Bias:	-18 V				
QP Bias:	-13 V				

Tune File : h2.u

H2 Gas:	1.6 mL/min	m/z	Count(Mean)	RSD%	Integration Time: 0.1000sec
Optional Gas:	0 %	59	2496.0	2.76	
QP Focus:	-8 V	78	7.8	43.61	
Cell Exit:	-40 V	89	4775.5	2.59	
OctP Bias:	-18 V				
QP Bias:	-15 V				

Generated : Aug 03, 2015 11:08:49
ed : Aug 03, 2015 11:10:28

6020 and 200.8 Tune Check Sample

Data File: 0016TUN.D
Date Acquired: Aug 3 2015 11:14 am
Operator:
Sample Name: 10ppb Li, Co, In, Tl
Misc Info: EPA tune solution
Vial Number: 4106
Current Method: TN_62_28.M

QC Tune Summary:
Pass

RSD%

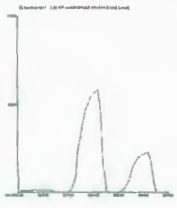
Element	Actual	Required	Flag
7 Li	2.07	5.00	0
9 Be	1.37	5.00	
59 Co	1.33	5.00	
115 In	1.39	5.00	
205 Tl	3.11	5.00	
208 Pb	1.41	5.00	

7 Li
Mass Calib.
Actual: 6.95
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:

9 Be
Mass Calib.
Actual: 9.00
Required 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required 0.75
Flag:

59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-15-0803B

Instrument ID: HP ICP/MS 2

Analysis Date: 08/03/15

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	175902	70-125	123131-219878	80-120	140722-211082	0
Rh-2	108773	70-125	76141-135966	80-120	87018-130528	0

Seq ID	QC Type	Rh-1	Rh-2
001		100	100
002		98	98
003		95	97
004		97	98
005		98	98
006		99	100
007		99	100
008		98	99
009	ICV	98	100
010	CCV	97	99
011		96	100
012	CCB	97	98
013	ICB	97	98
014	BS	97	97
015	BS	96	98
016	BS	98	99
017	ERA	102	103
018	AB	95	97
019	AA	99	100
020	LCS	97	98
021		99	100
022	LRB	99	99
023	DIL	98	98
024		99	99
025	S	98	99
026		94	95
027		95	96
028	S	96	97
029	S	96	97
030	S	96	98
031	S	96	96
032	S	96	97
033	S	96	96
034	MS	95	94
035	MSD	94	94
036	CCV	97	98
037		97	99

Form 15: Internal Standards Summary

IS Check Reference Sample: 001SMPL.D# blk

Data Set ID: MT3-15-0803B

Instrument ID: HP ICP/MS 2

Analysis Date: 08/03/15

Analyst: JRH

		non-ICB/CCB/ICV/CCV		ICB/CCB/ICV/CCV		
Element	Count	LCL-UCL	Accept.Range	LCL-UCL	Accept.Range	Flags
Rh-1	175902	70-125	123131-219878	80-120	140722-211082	0
Rh-2	108773	70-125	76141-135966	80-120	87018-130528	0

Seq ID	QC Type	Rh-1	Rh-2
038	CCB	97	98
039	S	95	96
040	S	101	101
041	S	102	100
042	S	97	97
043	S	99	98
044	S	98	97
045	S	95	95
046	S	95	93
047	MS	94	92
048	MSD	94	92
049	CCV	98	97
050		98	98
051	CCB	98	97
052	S	98	97
053	S	94	94
054	S	96	95
055	S	95	95
056	CCV	100	99
057	CCB	99	99

Form 9

Analysis Date	varies	
Analytical Method	6020A/6020/200.8	
Digestion Date	varies	
Spiked Value	varies	(ug/L)
Estimated Limit	varies	(ug/L)

Element/Mass	Date	Spike (ug/l)	MDL (ug/l)	Prep Batch
Al-27	4/9/2012	0.50	0.189	MTD-040212-1
Sb-121	3/20/2012	1.00	0.105	MTD-032012-3
As-75	3/20/2012	0.05	0.032	MTD-032012-2
Ba-137	3/20/2012	0.50	0.202	MTD-032012-2
Be-9	4/10/2012	0.10	0.079	MTD-041012-1
B-10	3/20/2012	1.00	0.589	MTD-032012-3
B-11	3/20/2012	1.00	0.277	MTD-032012-3
Cd-111	3/20/2012	0.05	0.038	MTD-032012-2
Cd-114	3/20/2012	0.10	0.030	MTD-032012-2
Cr-52	3/20/2012	0.10	0.023	MTD-032012-2
Cr-53	3/20/2012	0.10	0.054	MTD-032012-2
Co-59	3/20/2012	0.10	0.035	MTD-032012-2
Cu-65	3/20/2012	0.50	0.068	MTD-032012-2
Fe-56	4/9/2012	2.00	0.470	MTD-040912-1
Fe-57	4/9/2012	2.00	0.824	MTD-040912-1
Pb-208	3/20/2012	0.10	0.052	MTD-032012-2
Li-7	3/20/2012	1.00	0.166	MTD-032012-3
Mn-55	3/20/2012	0.10	0.187	MTD-032012-2
Mo-95	4/9/2012	0.50	0.442	MTD-040212-1
Ni-60	4/13/2012	0.10	0.035	MTD-041012-1
Se-78	3/20/2012	0.10	0.058	MTD-032012-2
Se-82	3/20/2012	0.50	0.475	MTD-032012-2
Ag-107	3/20/2012	0.10	0.025	MTD-032012-2
Sr-88	3/20/2012	0.10	0.016	MTD-032012-2
Tl-205	4/9/2012	0.50	0.089	MTD-040212-1
Sn-118	3/20/2012	0.10	0.079	MTD-032012-2
Ti-47	3/20/2012	0.50	0.124	MTD-032012-2
V-51	3/20/2012	0.05	0.018	MTD-032012-2
Zn-66	4/9/2012	2.00	0.366	MTD-040912-1

Element/Mass	Date	Spike (mg/l)	MDL (mg/l)	Prep Batch
Ca-43	4/16/2012	0.01	0.0101	MTD-041012-4
Ca-44	4/16/2012	0.01	0.0041	MTD-041012-4
Mg-24	4/16/2012	0.01	0.0006	MTD-041012-4
K-39	4/16/2012	0.01	0.0030	MTD-041012-4
Na-23	4/16/2012	0.10	0.0101	MTD-041012-4

Linear Range June 2012

		Prep Batch	Run Batch
Aluminum	5.0ppm	MTD-061912-5	MT3-12-0619C
Antimony	5.0ppm	MTD-061912-5	MT3-12-0619C
Arsenic	1.0ppm	MTD-061912-5	MT3-12-0619C
Barium	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-10	5.0ppm	MTD-061912-5	MT3-12-0619C
Boron-11	5.0ppm	MTD-061912-5	MT3-12-0619C
Beryllium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-111	5.0ppm	MTD-061912-5	MT3-12-0619C
Cadmium-114	5.0ppm	MTD-061912-5	MT3-12-0619C
Chromium	2.0ppm	MTD-061912-5	MT3-12-0619C
Cobalt	2.0ppm	MTD-061912-5	MT3-12-0619C
Copper	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-56	5.0ppm	MTD-061912-5	MT3-12-0619C
Iron-57	2.0ppm	MTD-061912-5	MT3-12-0619C
Lead	5.0ppm	MTD-061912-5	MT3-12-0619C
Lithium	2.0ppm	MTD-061912-5	MT3-12-0619C
Manganese	1.0ppm	MTD-061912-5	MT3-12-0619C
Molybdenum	1.0ppm	MTD-061912-5	MT3-12-0619C
Nickel	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-78	5.0ppm	MTD-061912-5	MT3-12-0619C
Selenium-82	5.0ppm	MTD-061912-5	MT3-12-0619C
Silver	1.0ppm	MTD-061912-5	MT3-12-0619C
Strontium-86	5.0ppm	MTD-061912-5	MT3-12-0619C
Thallium	5.0ppm	MTD-061912-5	MT3-12-0619C
Tin	1.0ppm	MTD-061912-5	MT3-12-0619C
Titanium	1.0ppm	MTD-061912-5	MT3-12-0619C
Vanadium	1.0ppm	MTD-061912-5	MT3-12-0619C
Zinc	2.0ppm	MTD-061912-5	MT3-12-0619C

Sodium-23	50ppm	MTD-061912-5	MT3-12-0619B
Magnesium-24	50ppm	MTD-061912-5	MT3-12-0619B
Potassium-39	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-43	50ppm	MTD-061912-5	MT3-12-0619B
Calcium-44	50ppm	MTD-061912-5	MT3-12-0619B

Maximum spiking levels are instated to ensure the safety and longevity of the instrument. Any sample results above this level result in extended wash runs and sample dilution.

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 001SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:25 pm
Sample Name: blk
Sample Type: CalBlk
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001181203	0.00006246	mg/L	45.68	2
Se	78	103	.0000077445	<0.000	mg/L	114.02	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 002SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:28 pm
Sample Name: 0.00
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001135574	<0.000	mg/L	4.3E+1	2
Se	78	103	.0000090490	.0000000000	mg/L	1.1E+9	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 003SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:30 pm
Sample Name: 0.0005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001531445	0.0005419	mg/L	12.09	2
Se	78	103	.0000106049	0.0001353	mg/L	60.99	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 004SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:33 pm
Sample Name: 0.001
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001744535	0.0008336	mg/L	17.72	2
Se	78	103	.0000193054	0.0008917	mg/L	14.10	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 005SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:35 pm
Sample Name: 0.005
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0004771931	0.004978	mg/L	0.46	2
Se	78	103	.0000639547	0.004774	mg/L	7.53	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 006SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:38 pm
Sample Name: 0.02
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001561332	0.01982	mg/L	1.86	2
Se	78	103	.0002363465	0.01976	mg/L	4.20	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 007SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:41 pm
Sample Name: 0.05
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003758789	0.04990	mg/L	0.60	2
Se	78	103	.0005693403	0.04871	mg/L	2.07	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 008SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:43 pm
Sample Name: 0.20
Sample Type: CalStd
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.01472645	0.2000	mg/L	0.47	2
Se	78	103	0.002313501	0.2003	mg/L	1.05	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 009SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:46 pm
Sample Name: ICV-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007432231	0.1002	mg/L	0.22	2
Se	78	103	0.001173082	0.1012	mg/L	3.90	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 010SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:49 pm
Sample Name: CCV1-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007444343	0.1004	mg/L	1.27	2
Se	78	103	0.001140300	0.09835	mg/L	1.29	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 011SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:52 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001138006	0.000003329	mg/L	4,000	2
Se	78	103	.0000163738	0.0006368	mg/L	25.83	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 012SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:54 pm
Sample Name: CCB1
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001287369	0.0002078	mg/L	25.97	2
Se	78	103	.0000117016	0.0002306	mg/L	45.75	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 013SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 02:57 pm
Sample Name: ICB
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001176540	0.00005608	mg/L	115.73	2
Se	78	103	.0000089051	<0.000	mg/L	794.16	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 014SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:00 pm
Sample Name: BS-0.0005
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001525217	0.0005334	mg/L	31.20	2
Se	78	103	.0000149888	0.0005164	mg/L	24.71	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 015SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:02 pm
Sample Name: BS-0.001
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001798849	0.0009080	mg/L	3.10	2
Se	78	103	.0000200628	0.0009575	mg/L	6.69	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 016SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:05 pm
Sample Name: BS-0.002
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002562365	0.001953	mg/L	4.20	2
Se	78	103	.0000301796	0.001837	mg/L	15.20	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 017SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:08 pm
Sample Name: ERA-5/1 8141-04
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.006561701	0.4414	mg/L	0.71	2
Se	78	103	0.002075579	0.8983	mg/L	1.02	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 018SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:10 pm
Sample Name: Soln-AB
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.001806336	0.02317	mg/L	1.61	2

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 019SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:13 pm
Sample Name: Soln-AA
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001626764	0.0006724	mg/L	8.21	2
Se	78	103	.0000119270	0.0002502	mg/L	57.07	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 020SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:15 pm
Sample Name: 08/03 LCS2-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003831230	0.05089	mg/L	1.85	2
Se	78	103	.0005776105	0.04943	mg/L	1.82	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 021SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:18 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001363296	0.0003117	mg/L	74.72	2
Se	78	103	.0000134567	0.0003832	mg/L	45.93	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 022SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:21 pm
Sample Name: 08/03 LRB2
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001282059	0.0002005	mg/L	39.51	2
Se	78	103	.0000101460	0.00009537	mg/L	116.18	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 023SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:23 pm
Sample Name: 66907.01 Dil
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 25.00

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001519808	0.01315	mg/L	9.42	2
Se	78	103	.0000093695	0.0006965	mg/L	432.59	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 024SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:26 pm
Sample Name: 66907.01s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002110420	0.006673	mg/L	10.00	2
Se	78	103	.0000097557	0.0003072	mg/L	83.53	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 025SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:28 pm
Sample Name: 66907.01s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001339481	0.001396	mg/L	30.95	2
Se	78	103	.0000086076	<0.000	mg/L	492.28	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 026SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:31 pm
Sample Name: 66907.02s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0003318589	0.01494	mg/L	7.27	2
Se	78	103	.0000106677	0.0007037	mg/L	69.40	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 027SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:33 pm
Sample Name: 66907.02s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002515762	0.009447	mg/L	10.02	2
Se	78	103	.0000095155	0.0002028	mg/L	147.88	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 028SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:36 pm
Sample Name: 66907.03s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001811169	0.004624	mg/L	9.96	2
Se	78	103	.0000113154	0.0009852	mg/L	127.89	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 029SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:52 pm
Sample Name: 66907.03s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001839616	0.004819	mg/L	12.79	2
Se	78	103	.0000095455	0.0002158	mg/L	309.04	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 030SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:41 pm
Sample Name: 66907.04s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001069952	<0.000	mg/L	178.09	2
Se	78	103	.0000089353	<0.000	mg/L	810.84	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 031SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:43 pm
Sample Name: 66907.04s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000980007	<0.000	mg/L	44.16	2
Se	78	103	.0000097337	0.0002976	mg/L	211.93	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 032SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:54 pm
Sample Name: 66907.08s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001730170	0.004070	mg/L	17.92	2
Se	78	103	.0000140646	0.002180	mg/L	68.26	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 033SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:57 pm
Sample Name: 66907.05s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001027259	<0.000	mg/L	56.74	2
Se	78	103	.0000110852	0.0008851	mg/L	24.77	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 034SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 03:59 pm
Sample Name: 66907.06s tot MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003775185	0.2506	mg/L	1.44	2
Se	78	103	.0006034161	0.2584	mg/L	0.79	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 035SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:02 pm
Sample Name: 66907.07s tot MSD-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003730816	0.2476	mg/L	2.13	2
Se	78	103	.0006130824	0.2626	mg/L	0.80	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 036SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:04 pm
Sample Name: CCV2-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007452659	0.1005	mg/L	1.39	2
Se	78	103	0.001129290	0.09739	mg/L	3.98	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 037SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:07 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000886157	<0.000	mg/L	6.10	2
Se	78	103	.0000157887	0.0005859	mg/L	23.02	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 038SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:10 pm
Sample Name: CCB2
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000872543	<0.000	mg/L	22.25	2
Se	78	103	.0000102931	0.0001081	mg/L	122.29	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 039SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:12 pm
Sample Name: 66907.08s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001453699	0.002177	mg/L	18.92	2
Se	78	103	.0000174064	0.003633	mg/L	3.35	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 040SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:15 pm
Sample Name: 66907.09s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000904850	<0.000	mg/L	18.54	2
Se	78	103	.0000078657	<0.000	mg/L	66.45	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 041SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:17 pm
Sample Name: 66907.09s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000795948	<0.000	mg/L	12.04	2
Se	78	103	.0000089337	<0.000	mg/L	975.66	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 042SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:20 pm
Sample Name: 66907.10s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001628457	0.003374	mg/L	9.35	2
Se	78	103	.0000138910	0.002105	mg/L	14.68	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 043SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:22 pm
Sample Name: 66907.10s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001610001	0.003247	mg/L	11.84	2
Se	78	103	.0000143294	0.002295	mg/L	32.03	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 044SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:25 pm
Sample Name: 66907.11s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001349760	0.001466	mg/L	25.16	2
Se	78	103	.0000106632	0.0007017	mg/L	124.73	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 045SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:28 pm
Sample Name: 66907.11s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000912134	<0.000	mg/L	21.35	2
Se	78	103	.0000113562	0.001003	mg/L	62.09	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 046SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:30 pm
Sample Name: 66907.05s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000798773	<0.000	mg/L	12.55	2
Se	78	103	.0000106836	0.0007106	mg/L	69.11	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 047SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:33 pm
Sample Name: 66907.06s dis MS-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003678032	0.2440	mg/L	1.23	2
Se	78	103	.0006034156	0.2584	mg/L	2.18	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 048SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:35 pm
Sample Name: 66907.07s dis MSD-0.05
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.003703260	0.2457	mg/L	0.71	2
Se	78	103	.0006059133	0.2595	mg/L	1.02	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 049SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:38 pm
Sample Name: CCV3-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007198118	0.09698	mg/L	0.79	2
Se	78	103	0.001143351	0.09862	mg/L	1.66	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 050SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:40 pm
Sample Name: Rinse
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000721673	<0.000	mg/L	11.22	2
Se	78	103	.0000140771	0.0004371	mg/L	12.29	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 051SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:43 pm
Sample Name: CCB3
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000695053	<0.000	mg/L	10.25	2
Se	78	103	.0000084910	<0.000	mg/L	234.80	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 052SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:46 pm
Sample Name: 66907.01s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001498394	0.002483	mg/L	32.39	2
Se	78	103	.0000074192	<0.000	mg/L	49.65	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 053SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:48 pm
Sample Name: 66907.02s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002028574	0.006112	mg/L	16.43	2
Se	78	103	.0000100659	0.0004420	mg/L	282.35	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 054SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:51 pm
Sample Name: 66907.02s dis
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0001420121	0.001948	mg/L	13.15	2
Se	78	103	.0000095326	0.0002102	mg/L	519.51	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 055SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:54 pm
Sample Name: 66907.02s tot
Sample Type: Sample
Matrix: Liquid
Comments:
Dilution: 5.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0002086487	0.006509	mg/L	10.18	2
Se	78	103	.0000088830	<0.000	mg/L	60.40	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 056SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:57 pm
Sample Name: CCV3-0.10
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	0.007277054	0.09806	mg/L	0.53	2
Se	78	103	0.001150747	0.09926	mg/L	2.05	1

Data Set: MT3-15-0803B
Run Date: 08/03/15

Metals Quantitation Summary Report

Analyst: JRH
Instrument: HP ICP/MS

Sequence #: 057SMPL.D#
Method: 02-CuSe.M
Acq Time: Aug 3 2015 04:59 pm
Sample Name: CCB3
Sample Type: Sample
Matrix: Liquid
Comments: std ID: 072915
Dilution: 1.000

Operator: JRH std ID: 080514
Acq Mode: Spectrum
Cal Title:
Cal Type: External Calibration Method
Last Calib: mtd-080315-2
Bkg File: --------
Int Correct: ON
Blank File: --------

Element	Mass			Concentration	Units	RSD %	Rep
Cu	65	103	.0000763465	<0.000	mg/L	13.51	2
Se	78	103	.0000140385	0.0004338	mg/L	78.31	1

Metals Digestion

(3015A \ 3050B)

DATE 8-3-15

TIME START 11:00

ANALYST CCM

TIME FINISH 11:30

PREP BATCH MTD-080315-2

SAMPLE#	BTL ID	SAMPLE AMOUNT GRAMS (g)	FINAL VOLUME (ml)	REMARKS	% TOTAL SOLIDS	DILUTION FACTOR
LCS-2	----	50	50		—	1
LRB-2	----	50	50		—	1
66907.01		10		Tot		5
.01				Dis		
.02				Tot		
.02				Dis		
.03				Tot		
.03				Dis		
.04				Tot		
.04				Dis		
.05				Tot		
.05				Dis		
.06 MS				Tot MS		
.06 MS				Dis MS		
.07 MSD				Tot MSD		
.07 MSD				Dis MSD		
.08				Tot		
.08				Dis		
.09				Tot		
.09				Dis		
.10				Tot		
.10				Dis		
.11				Tot		
.11				Dis		

NOTES: *1) Spike values (unless otherwise stated):*
LCS = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution
Samples: Water = 0.05 ppm = 50 mls / 0.50 mls of 5ppm Spiking Solution
Soil = 0.10 ppm = 50 mls / 1.0 mls of 5ppm Spiking Solution
Spiking Solution – Date Prepared: 8-3-15

2) Spike values for minerals (Ca-Mg-K-Na)
LCS = 1.0 ppm = 50 mls / 0.50 mls HM Stock Solution
Samples (Water or Soil) = 2.0 ppm = 50 mls / 1.0 mls HM Stock Solution
High Purity Stock Solution (HM)- Lot # 1426832

3) HNO_3 Lot # 162053 JT Baker

4) Centrifuge Tube Lot # 150409-060 Thomas Scientific

5) Balance ID: M1

Reviewed by BB *On* 8/4/15

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

90629

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Susan Hoertt
COMPANY: Haley & Aldrich
ADDRESS: 8899 Gander Creek Dr
CITY: Miamisburg STATE: OH ZIP CODE: 45342
PHONE NO.: 937-384-9940 FAX NO.: 937-384-9946 P.O. NO.: 37515
E-MAIL ADDRESS: shoertt@haleyaldrich.com QUOTE NO.:

INVOICE TO

CONTACT NAME: ☒ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: Racer Romulus
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Eric Shirley

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☐ EDD ☒ OTHER EQuIS EDD

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	TOTAL COPPER	TOTAL SELENIUM	DISSOLVED COPPER	DISSOLVED SELENIUM	Special Instructions
606907.01	7/14/15	0001	RB01 (07-14-2015)	GWQ	2			2					X	X	X	X	RINSE BLANK
.02		1205	TW116 (07-14-2015)(1205)	GW	2			2					X	X	X	X	N
.03		1325	TW101 (07-14-2015)(1325)	GW	2			2					X	X	X	X	N
.04		1440	TW104 (07-14-2015)(1440)	GW	2			2					X	X	X	X	N
.05/.06/.07		1555	TW105 (07-14-2015)(1555)	GW	6			6					X	X	X	X	N + MS/MSD
.08	7/15/15	0001	DUP01 (07-15-2015)	GWQ	2			2					X	X	X	X	FIELD DUPLICATE
.09		0002	RB02 (07-15-2015)	GWQ	2			2					X	X	X	X	RINSE BLANK
.10		0815	TW107 (07-15-2015)(0815)	GW	2			2					X	X	X	X	N
.11		0930	TW109 (07-15-2015)(0930)	GW	2			2					X	X	X	X	N

RELINQUISHED BY: SIGNATURE/ORGANIZATION: E. Z. Shirley H&A ☒ Sampler DATE 7/15/15 TIME 1820
RECEIVED BY: SIGNATURE/ORGANIZATION: Me DATE 7.15.15 TIME 1235
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE 7.15.15 TIME
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE 7/15/15 TIME 1420

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.9

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Merit Laboratories Login Checklist

Lab Set ID: S66907
Client: HALEYALDRICH (Haley & Aldrich)
Project: RACER Romulus
Submitted: 07/15/2015 14:20 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Selection				Description	Note
01.	☐ Yes	☒ No	☐ N/A	Samples shipped	
02.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
03.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
04.	☒ Yes	☐ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.9
05.	☒ Yes	☐ No	☐ N/A	Received on ice/ cooling process begun	
06.	☒ Yes	☐ No	☐ N/A	All bottles intact	
07.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
08.	☒ Yes	☐ No	☐ N/A	Do sample have correct chemical preservation	
09.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
10.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
11.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
12.	☒ Yes	☐ No	☐ N/A	Completed pH checks on preserved samples? (no VOAs)	
13.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
14.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
15.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	
16.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
17.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
18.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
19.	☐ Yes	☒ No	☐ N/A	Subcontracting needed? Subcontacted to:	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S66907 Initials: KAG

Client: HALEYALDRICH (Haley & Aldrich)

Project: RACER Romulus

Submitted: 07/15/2015 14:20 Login User: KAG

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com

Lab ID	125 ml Plastic HNO_3	125 ml Amber H_2SO_4	250 ml Plastic H_2SO_4	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber NaOH	125 ml Amber $PbCO_3$ NaOH	pH					Notes
								<2	>12	other	ml add	new pH	
S66907.01	X							✓					
S66907.01	X							✓					
S66907.02	X							✓					
S66907.02	X							✓					
S66907.03	X							✓					
S66907.03	X							✓					
S66907.04	X							✓					
S66907.04	X							✓					
S66907.05	X							✓					
S66907.05	X							✓					
S66907.06	X							✓					
S66907.06	X							✓					
S66907.07	X							✓					
S66907.07	X							✓					
S66907.08	X							✓					
S66907.08	X							✓					
S66907.09	X							✓					
S66907.09	X							✓					
S66907.10	X							✓					
S66907.10	X							✓					
S66907.11	X							✓					
S66907.11	X							✓					

Sample Set Receipt

Report to

Attention: Susan Hoertt
Address: Haley & Aldrich, Inc.
8899 Gander Creek Dr.
Miamisburg, OH 45342

Phone: 937-384-9940 FAX: 937-384-9946
Email: SHoertt@haleyaldrich.com
Contacts:

Invoice to

Attention: Accounts Payable
Address: Haley & Aldrich, Inc.
70 Blanchard Rd.
Ste. 430
Burlington, MA 01803-5100

Phone: 617-886-7400 FAX: 617-886-7900
Email: Haley Aldrich Invoice Group

Set ID: S66907 Location: HALEYALDRICH (Haley & Aldrich) PO #: 37515 Login by: KAG
Project: RACER Romulus Backlog Note:
Submitted: 07/15/2015 14:20 Due Date: 07/29/2015 Rush: No Collected by: Eric Shirley QC Level: 3 Custom Limits Present: No
Approved by: Site: Work Order#: Bill to Acct: Bill to Dept:

Sample ID	Sample Tag	Matrix	Date/Time Collected	COC Ref
S66907.01	RB-01(07-14-2015)	Groundwater Quality	07/14/2015 00:01	90629
S66907.02	TW116(07-14-2015)(1205)	Groundwater	07/14/2015 12:05	90629
S66907.03	TW101(07-14-2015)(1325)	Groundwater	07/14/2015 13:25	90629
S66907.04	TW104(07-14-2015)(1440)	Groundwater	07/14/2015 14:40	90629
S66907.05	TW105(07-14-2015)(1555)	Groundwater	07/14/2015 15:55	90629
S66907.06	TW105(07-14-2015)(1555) MS	Groundwater	07/14/2015 15:55	90629
S66907.07	TW105(07-14-2015)(1555) MSD	Groundwater	07/14/2015 15:55	90629
S66907.08	DUP01(07-15-2015)	Groundwater Quality	07/15/2015 00:01	90629
S66907.09	RB02(07-15-2015)	Groundwater Quality	07/15/2015 00:02	90629
S66907.10	TW107(07-15-2015)(0815)	Groundwater	07/15/2015 08:15	90629
S66907.11	TW109(07-15-2015)(0930)	Groundwater	07/15/2015 09:30	90629

Samples: S66907.01-11

Analysis Code	Analysis Title	Method	Units	Holding Date
2155WMS	Copper	E200.8	mg/L	01/10/2016
2205WMS	Selenium	E200.8	mg/L	01/10/2016
2155DIS	Copper, Dissolved	E200.8	mg/L	01/10/2016
2205DIS	Selenium, Dissolved	E200.8	mg/L	01/10/2016
1605W	Metal Digestion	SW3015A		01/10/2016
1605DIS	Metal Digestion, Dissolved Metals	SW3015A		01/10/2016