



January 16, 2016

Reference No. 012607

Distributed via E mail

Mr. Greg Rudloff
U.S. Environmental Protection Agency, Region 5
Land and Chemicals Division
77 West Jackson Blvd., LU 9J
Chicago, Illinois 60604 3590

Dear Mr. Rudloff:

**Re: 2nd 2016 Semi Annual Progress Report
Performance Based Administrative Order on Consent
Docket Number RCRA 05 2011 0025
13000 Eckles Road Site, Livonia, Michigan
USEPA ID No. MID 005 356 621**

In accordance with the Performance Based Administrative Order on Consent between the U.S. Environmental Protection Agency Region 5 (USEPA) and Revitalizing Auto Communities Environmental Response Trust (RACER), please find the attached progress report for the 2nd half of 2016 (July 1, 2016 through December 31, 2016).

Please contact Grant Trigger or Jeff Crum (regarding AOI 31 vapor intrusion pathway monitoring matters), or Dave Favero or myself (regarding system operation and Area 1 groundwater matters) if you would like to discuss further. Thank you.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read "Chris Meincke", is written over a horizontal line.

Christopher J. Meincke, P.E.

CJM/20/ds/Det.

Attachment A: 2nd Semi Annual 2016 Progress Report

cc: Grant Trigger, RACER
Dave Favero, RACER
Richard Conforti, MDEQ
Jeff Crum, Hamp, Mathews & Associates
Livonia Civic Center Library



ATTACHMENT A
2nd SEMI-ANNUAL 2016 PROGRESS REPORT
PERFORMANCE-BASED ADMINISTRATIVE ORDER ON CONSENT
13000 ECKLES ROAD SITE, LIVONIA, MICHIGAN
JULY 1, 2016 TO DECEMBER 31, 2016

1. Description of Work Completed

- Continued operation of the Area 1 French Drain Collection Trench and Groundwater Treatment system. The Groundwater Treatment System was shut down for periods during the Area 1 targeted and full scale ISCR injections to reduce groundwater flow, and for two weeks in November due to a sand filter actuator valve failure and replacement. The Great Lakes Water Authority (GLWA) has been updated on shutdowns and Area 1 injection activities. During the second half of 2016 the system has collected and treated 3,624,323 gallons of groundwater. Monthly discharge totals are presented in Table 1.
- Submitted the 1st Semi-Annual 2016 Progress Report dated July 15, 2016 to USEPA.
- Participated in a MDEQ Remediation Division In-Situ Peer Review Team project review meeting on July 11, 2016 regarding the Area 1 ISCR Pilot Study Summary Report dated January 2016, Area 1 Full Scale ISCR Work Plan dated April 1, 2016, and Area 1 Targeted ISCR Request dated April 5, 2016.
- Conducted Area 1 Full Scale ISCR Baseline groundwater sampling August 15, 2016 through August 19, 2016.
- Implemented injection activities at thirteen locations as described in the Area 1 Targeted ISCR Request dated April 5, 2016 on August 23, 2016 through August 26, 2016, including the injection of three locations in Sub-Area A, five locations in Sub-Area B, and five locations in Sub-Area C. Details will be provided under separate cover.
- Implemented full-scale ISCR Injection activities at 152 locations as described in the Area 1 Full Scale ISCR Work Plan dated April 1, 2016 on September 13, 2016 through November 4, 2016, including the injection of twenty-seven locations in Sub-Area A, sixty-two locations in Sub-Area B, and sixty-three locations in Sub-Area C. Details will be provided under separate cover.
- Submitted a Semi-Annual Report for Special Discharge Permit SD6-94508 dated September 28, 2016 to the City of Detroit Water and Sewerage Department for the period March 2016 through August 2016.



- Completed a meeting/conference call with USEPA to discuss Corrective Action O&M activities, Area 1 Remediation activities, AOI 31 Vapor Intrusion (VI) Pathway sampling strategy, and the 2017 scope and budget request on October 13, 2016.
- Collected groundwater samples from Area 1 monitoring wells on November 4, 2016 as part of the approved Groundwater Monitoring Plan (GMP) activities. AOI 31 groundwater samples were collected in June/July 2016 as part of the VI Monitoring Work Plan activities.
- Submitted 2017 Annual Environmental Budget Request to USEPA on November 14, 2016 and received USEPA approval on November 23, 2016
- Submitted a proposed Conceptual Site Model (CSM) Evaluation and VI Pathway Sampling Strategy (i.e., Geoprobe[®] groundwater plume delineation samples) via email on December 13, 2016 to USEPA for review. Received comments from USEPA via email on December 22, 2016.
- Collected groundwater samples from five Area 1 monitoring wells on December 13, 2016 to evaluate groundwater in the vicinity of the Targeted ISCR injections and French Drain collection system.
- Submitted a memorandum dated December 14, 2016 summarizing the results of the activities conducted according to the Proposed Scope of Work – Soil Core Leaching/Resolubilization dated May 20, 2016.
- Continued evaluation of potential cost savings to decrease OM&M costs associated with the Area 1 Groundwater Collection and Treatment System, including monitoring the influent for reductions in chromium and nickel concentrations as a result of the targeted or full scale ISCR injections.
- Conducted a vapor mitigation system performance evaluation at 37780 Grantland Street (Home 7) December 15, 2016.

2. Data Collected

- Soil gas and groundwater sample results were collected as part of the approved Vapor Intrusion Pathway Monitoring Work Plan of May 2016. The sample results will be submitted to USEPA under separate cover.
- Full-scale and Targeted Area 1 ISCR Baseline groundwater samples were collected in August 2016 and December 2016. The sample results will be submitted to USEPA under separate cover with a summary of the Area 1 ISCR Injection activities.
- Targeted and full-scale ISCR Injection locations are presented on Figure 1.
- Groundwater sample results associated with the Area 1 GMP sampling event from Area 1 monitoring wells are included on Figure 2 and in Table 2.



- Vacuum pressure readings obtained from seven sub-slab communication test points and the UTube manometer to assess the vapor mitigation system performance at 37789 Grantland Street (Home 7).

3. Problems Encountered

- None

4. Estimated Percent Complete and Information Summary for Selected Activities

- O&M of the Groundwater Pump & Treat System (GWTP, Barrier Wall, Cover) 22%
- Continued operation of the Area 1 French Drain Collection Trench and Groundwater Treatment system. Submitted appropriate discharge reports as per the Special Discharge Permit. (Percent complete estimated as 6 years complete of 27 years estimated in the May 2010 RCES.)
- Long-Term Groundwater Monitoring On-going
Long-Term Groundwater Monitoring Plan scheduled to be complete after 5 years of continued stability/reduction in off-Site/boundary concentrations (2006 through 2010). Sampling activities are currently planned to continue pending USEPA approval to cease monitoring.
- Maintenance of the AOI 39 Dust Control Plan 100%
- Restrictive Covenants 100%
- Prepared a revised Declaration of Restrictive Covenant (DRC) and Termination Agreement for the existing 2007 DRC and submitted to USEPA on June 25, 2015.
- Recorded final DRC and Termination Agreement on August 26, 2015.
- Vapor Intrusion Investigation 100%
Vapor Intrusion Investigation has been completed and subsequent mitigation has been implemented at one residence, and a VI pathway sampling plan downgradient of previously investigated homes has been approved and is being implemented. See AOI 31 below for additional activities.
- Installation of Vapor Mitigation System 100%
Installation completed and system updated September 2012.



- Operation, Maintenance and Performance Monitoring of Vapor Mitigation System
On-going

System performance monitoring is being implemented at pre-scheduled time periods, though some delay in the schedule occurred due to home foreclosure and achieving contact with new homeowners. Latest system performance monitoring completed December 2016.

- Pilot Tests - Alternative Chemicals & Target In-Situ Treatment Injection 100%

Objective was to design, implement, and evaluate a pilot test to use alternative chemicals in the wastewater treatment process that could reduce treatment system operating time and/or operating costs. Also, design and implement an in-situ stabilization treatment in Area 1 that could also reduce treatment system operating time and long-term monitoring duration.

The Area 1 field pilot test was conducted in November and December 2010. Based on an evaluation of the pilot test results, additional pilot study injection and monitoring activities were recommended to determine if full-scale on-site implementation would significantly reduce dissolved concentrations of chromium and nickel and allow for the groundwater treatment plant activities to be reduced or eliminated.

The groundwater treatment plant optimization activities have not been conducted due to health and safety concerns associated with handling, storing, and mixing the proposed replacement chemicals.

Additional cost and remedial alternative evaluations were performed in 2013. Additional Area 1 Characterization activities have been implemented. A laboratory treatability study was performed using site groundwater to evaluate the effectiveness of utilizing a permeable reactive barrier wall (PRB) with zero valent iron (ZVI) to treat Area 1 groundwater if the existing groundwater collection and treatment system operations are ceased. Groundwater modeling activities were also performed to evaluate the optimal location and number of PRBs and the effects on groundwater flow inside and outside of the Area 1 Barrier Wall.

An additional field pilot test injection was completed in November 2013 and monitoring activities were completed through October 2014 with an additional Pilot Injections in the northern portion of the Area 1 chromium and nickel-impacted groundwater plume proposed in the 2015 Annual EA Budget Request.

Additional expanded pilot study injections were completed in May through June of 2015 including the injection of sodium sulfide, sodium dithionite, or a combination of the two in 83 injections points in the northern portion of the Area 1 chromium and nickel-impacted groundwater plume. Groundwater monitoring concluded in December 2015. An Area 1 ISCR Pilot Study Summary Report was submitted in January 2016.



- Groundwater Treatment System Decommissioning & Removal 0%
Anticipated to be completed in 2037 per May 2010 RCES but could be complete in 2017 or 2018 if the implemented ISCR is successful.
- Completion Report & Well Abandonment 0%
Anticipated to be completed in 2037 per May 2010 RCES.
- AOI 31 20%
Vapor Intrusion Pathway Monitoring Work Plan has been approved and includes a minimum two years of semi-annual soil gas and groundwater sample collection to evaluate groundwater plume stability, downgradient extent of the groundwater and soil gas TCE plume, and spatial and temporal variability in TCE soil gas concentrations. The first semi-annual event was conducted in June 2016. Based on the results of the first event, additional groundwater delineation activities are proposed for the 1st Quarter of 2017 to further define groundwater impacts and allow for revising the VI pathway monitoring plan.
- Area 1 Remedial Implementation 90%
- A request to perform Targeted Area 1 ISCR Injections was submitted to USEPA in April 2016 and approved by USEPA on May 18, 2016. Targeted injections were implemented in August 2016. An Area 1 Full Scale ISCR Work Plan was submitted to USEPA in April 2016 and approved by USEPA on May 18, 2016. Implementation of the work plan activities began September 2016. ISCR injections were completed in November 2016. Performance groundwater monitoring following the ISCR injections is scheduled for January 2017 and April 2017.

5. Summary of Contacts with Interested Parties

- Amazon.com, Inc. announced plans in December 2016 to open a distribution warehouse on the portion of the Eckles Road Site sold to Livonia West Commerce Center, LLC on August 18, 2015.

6. Changes in Personnel

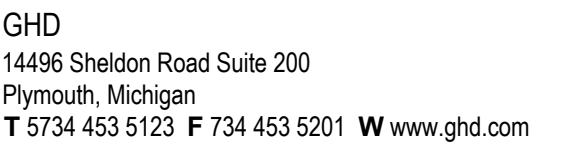
- None



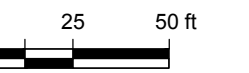
7. Projected Work for Next Reporting Period (January 2017 through June 2017)

- Implement the proposed AOI 31 geoprobe investigation and monitoring well installation and sampling activities.
- Evaluate results from newly installed AOI 31 geoprobes and monitoring wells, and potential newly installed soil gas monitoring points, and prepare a summary report for submittal to USEPA.
- Submit a revised Groundwater Monitoring Plan to USEPA.
- Collect semi-annual soil gas and groundwater samples according to USEPA approved Vapor Intrusion Pathway Monitoring Work Plan or as otherwise approved by USEPA.
- Prepare a 2016 summary report of the Vapor Intrusion Pathway Monitoring Work Plan results for submittal to USEPA.
- Continue operation of the Area 1 French Drain Collection Trench and Groundwater Treatment system.
- Implement Area 1 Full-Scale ISCR Work Plan performance monitoring.
- Continue evaluation of potential cost savings to decrease OM&M costs associated with the Area 1 Groundwater Collection and Treatment System including evaluating results of the full scale ISCR.
- Update the Groundwater Flow and Transport Model and use to evaluate groundwater flow volumes and patterns, and potential PRB gate options.
- Develop PRB Installation Work Plan and design documents.
- Continue support of redevelopment activities.
- Prepare summaries of meetings, data reviews, or conference calls with USEPA, as appropriate.
- Prepare the 1st 2017 Semi-Annual Progress Report.

Attachments: Figure 1 – Area 1 ISCR Injection and Monitoring Locations
Figure 2 – Area 1 GMP Groundwater Sample Results
Table 1 – Summary of Monthly Groundwater Treatment Plant Discharge Volume
Table 2 – Area 1 GMP Groundwater Sample Results



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**13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

No.	Issue	Drawn	Approved	Date
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Project	
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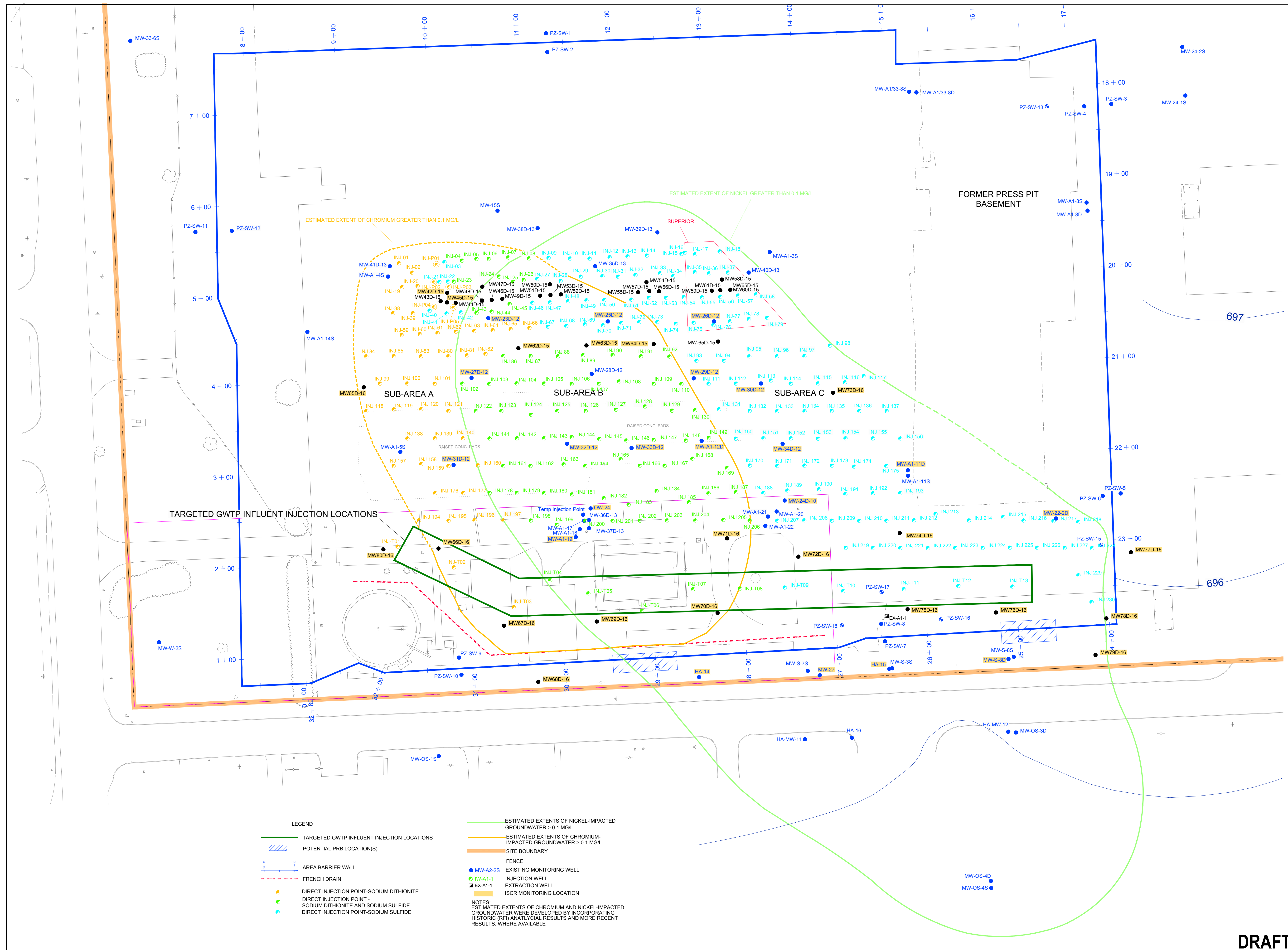
AS SHOWN	
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Bar is one inch on original size drawing

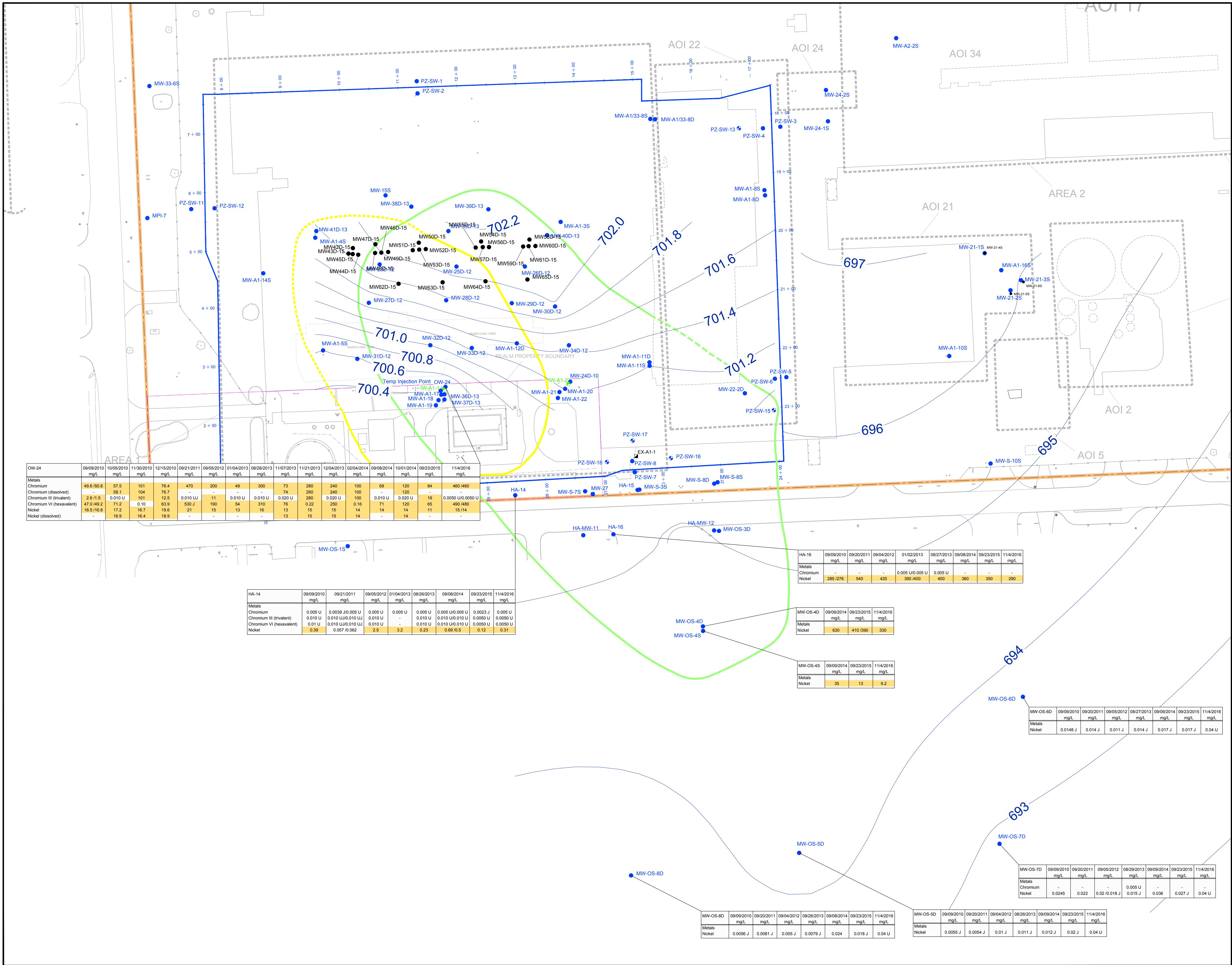
AREA 1 ISCR INJECTION AND MONITORING LOCATIONS

FIGURE 1

Page 1 of 1



DRAFT



No	Revision	Date	Initial

LEGEND

--- SITE BOUNDARY

--- FENCE

MW-A2-2S

 EXISTING MONITORING WELL

IW-A1-1

 INJECTION WELL

EX-A1-1

 EXTRACTION WELL

ESTIMATED EXTENTS OF NICKEL-IMPACTED GROUNDWATER > 0.1 MG/L

ESTIMATED EXTENTS OF CHROMIUM-IMPACTED GROUNDWATER > 0.1 MG/L

701.0 GROUNDWATER ELEVATION CONTOUR AUGUST 27 AND SEPTEMBER 30, 2013

RESULT GREATER THAN GROUNDWATER SCREENING CRITERIA

04080ft

N

NOTES:

ESTIMATED EXTENTS OF CHROMIUM AND NICKEL-IMPACTED GROUNDWATER WERE DEVELOPED BY INCORPORATING HISTORIC (RFI) ANALYTICAL RESULTS AND MORE RECENT RESULTS, WHERE AVAILABLE

Groundwater Screening Criteria

Chemicals of Concern (COCs)

Metals (mg/L)

Chromium (total)

Chromium, Hexavalent

Nickel

Industrial Health-Based Drinking Water Criteria

0.1

0.1

0.1

CRITERIA NOTES:

DRINKING WATER CRITERIA ARE PROVIDED ONLY FOR THE PURPOSE OF PLUME STABILITY EVALUATION.

J - THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED QUANTITY

U - PARAMETER WAS ANALYZED BUT NOT DETECTED ABOVE PROVIDED DETECTION LIMIT

-- PARAMETER NOT ANALYZED FROM SPECIFIED SAMPLE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved		
DRAWING STATUS		
Status	Date	Initial

AREA 1 GROUNDWATER RESULTS

2nd 2016 SEMI ANNUAL REPORT

AREA 1 GROUNDWATER INVESTIGATION

13000 ECKLES ROAD SITE

LIVONIA, MICHIGAN

GHD

Source Reference:

Project Manager:

Reviewed By:

Date:

C.M.

T.K.

JANUARY 2017

Scale:

Project N°:

Report N°:

Drawing N°:

1"=80'

012607-T01

RUDL020

figure 2

TABLE 1

January 16, 2017

Page 1 of 1

**SUMMARY OF MONTHLY GROUNDWATER TREATMENT PLANT DISCHARGE
AREA 1 - FORMER PLATING AREA
ECKLES ROAD SITE
LIVONIA, MICHIGAN**

Monthly GWTP Discharge Volume (Gallons)	
Month	
July 2016	744,193
August 2016	518,332
September 2016	491,810
October 2016	856,703
November 2016	458,890
December 2016	554,395
Total July 2016 to December 2016 Discharge	3,624,323

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES
AREA 1 - FORMER PLATING AREA
ECKLES ROAD SITE
LIVONIA, MICHIGAN

Area:	MDEQ Generic Groundwater	Area 01	Area 01	Area 01	Area 01	Area 01	Area 01
Sample Location:	Cleanup Criteria ⁽¹⁾	HA-14	HA-16	MW-OS-4D	MW-OS-4S	MW-OS-5D	MW-OS-6D
Sample Identification:	Residential	GW-12607-110416-DR-008	GW-12607-110416-DR-007	GW-12607-110416-DR-005	GW-12607-110416-DR-006	GW-12607-110416-DR-004	GW-12607-110416-DR-001
Sample Date:	Drinking Water	11/4/2016	11/4/2016	11/4/2016	11/4/2016	11/4/2016	11/4/2016
Sample Type:							
Parameters	Units						
Metals							
Chromium	mg/L	0.1	0.005 U	--	--	--	--
Chromium III (trivalent)	mg/L	0.1	0.0050 U	--	--	--	--
Chromium VI (hexavalent)	mg/L	0.1	0.0050 U	--	--	--	--
Nickel	mg/L	0.1	0.31	290	330	9.2	0.04 U

Notes:
U - Not detected at the associated reporting limit.

(1) Groundwater - MDEQ Generic cleanup criteria for residential and nonresidential category, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES
AREA 1 - FORMER PLATING AREA
ECKLES ROAD SITE
LIVONIA, MICHIGAN

Area:	Area 01	Area 01	Area 01	Area 01
Sample Location:	MW-OS-7D	MW-OS-8D	OW-24	OW-24
Sample Identification:	GW-12607-110416-DR-002	GW-12607-110416-DR-003	GW-12607-110416-DR-009	GW-12607-110416-DR-010
Sample Date:	11/4/2016	11/4/2016	11/4/2016	11/4/2016
Sample Type:				Duplicate
Parameters	Units			
Metals				
Chromium	mg/L	--	--	
Chromium III (trivalent)	mg/L	--	--	
Chromium VI (hexavalent)	mg/L	--	--	
Nickel	mg/L	0.04 U	0.04 U	

460	460
0.0050 U	0.0050 U
490	480
15	14