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Jun 19, 2009 22:04



**Worldwide Facilities Group
Remediation Team**

MC 480-111-W60
30200 Mound Road
Warren, Michigan 48090

February 27, 2009

Mr. Daniel Patulski, LU-9J
United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Patulski:

RE: Annual Report
13000 Eckles Road Site (U.S. EPA ID No. MID 005 356 621)
U.S. EPA Docket No: RCRA-05-2007-0008
Livonia, Michigan

Enclosed please find the Annual Report for the General Motors Corporation former Delphi Chassis Division property located at 13000 Eckles Road in Livonia, Michigan. This report describes the activities conducted during 2008 as required by the Administrative Order on Consent effective May 21, 2007.

Please feel free to contact me at (248) 255-2797 if you have any questions regarding this document, or if you require any further information.

Yours truly,

GENERAL MOTORS CORPORATION,

A handwritten signature in black ink, appearing to read "Kim Tucker-Billingslea".

Kim Tucker-Billingslea
Project Manager

CM/am/12607/Rpt 60/Det.
Encl.

c.c.: Richard Conforti (MDEQ)
Jean Caufield (GM)
Chris Meincke (CRA)
Ian Richardson (CRA)

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ADMINISTRATIVE ORDER ON CONSENT U.S. EPA DOCKET NO: RCRA-05-2007-0008 ANNUAL REPORT

**12950 ECKLES ROAD
13000 ECKLES ROAD
LIVONIA, MICHIGAN**

U.S. EPA No. MID 005 356 621

Prepared for:

General Motors Corporation (GM)

Remediation and Liability Management Company, Inc. (REALM)

DISCLAIMER:

SOME FORMATTING CHANGES MAY HAVE OCCURRED WHEN
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THE ORIGINAL CONTENT REMAINS UNCHANGED.

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**FEBRUARY 27, 2009
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1.0 INTRODUCTION

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Conestoga-Rovers & Associates (CRA) has prepared this 2008 Annual Report (Report), on behalf of Remediation and Liability Management Company, Inc. (REALM), a subsidiary of General Motors Corporation (GM), to describe the Operation, Monitoring, and Maintenance (OMM) activities for the General Motors Corporation (GM) properties located at 13000 and 12950 Eckles Road, Livonia, Michigan (Site).

The OMM activities described herein were conducted under an Administrative Order on Consent (AOC), voluntarily executed May 21, 2007 by GM and the United States Environmental Protection Agency (U.S. EPA), (U.S. EPA, Docket No: RCRA 05-2007-0008, May 2007). Based on the AOC, a draft Operation, Maintenance, and Monitoring Plan (OMM Plan) was submitted to the U.S. EPA and approved by the U.S. EPA in a letter dated July 5, 2007. The OMM Plan set forth requirements for operation, maintenance, and monitoring of institutional and engineering controls to ensure the continued effectiveness and integrity of final corrective measures. The Site locations are presented on Figure 1.1. Figure 1.2 presents the current Site Plan.

1.1 BACKGROUND

At the time of GM's purchase in 1953, the Site was used for agricultural activities. Additional development at the Site continued until 1989. The Site was used for the fabrication of coil springs, bumpers, and strut assemblies for vehicles from the Site's development in 1953/54 to approximately July 2000.

All Site structures, except the groundwater collection and treatment operation buildings on the southwest corner of the Site, have been environmentally decommissioned and demolished. Former building concrete floor slabs remain in place, with the exception of the Marshalling Building slab that has been removed. A six-foot high security fence topped with barbed wire is located along the perimeter of the Site and all gates are locked when the Site is inactive (e.g., when WWTP operators are not on Site, no field work is being conducted, etc.).

The groundwater collection and treatment operation in the southwest corner of the Site collects groundwater impacted by the historical chrome plating operations through a French drain system. Groundwater is collected and treated by pH adjustment, through the addition of sulfuric acid, sodium bisulfite, lime, a polymer flocculent, settling, and sand filter polishing. The water is treated at a maximum rate of approximately 70 gallons per minute, then batch discharged to the Detroit Water and Sewerage Department

(DWSD) under a special discharge permit from the DWSD. No other activities are currently conducted at the Site.

RCRA Corrective Action began in October 2001 and included investigation and remediation activities to address soil and groundwater conditions.

1.2 ORGANIZATION

The remainder of the Report is organized as follows

- Section 2.0 - presents the scope of OMM activities conducted at the Site;
- Section 3.0 - presents the results of the OMM activities conducted at the Site; and
- Section 4.0 - presents an evaluation of the Groundwater Monitoring Plan (GMP).

2.0 SCOPE OF OMM ACTIVITIES Jun 19, 2009 22:04

The following sections summarize activities related to the OMM Plan conducted during 2008.

2.1 INSTITUTIONAL CONTROLS**2.1.1 RESTRICTIVE COVENANT**

A Declaration of Restrictive Covenant was recorded with the Wayne County Register of Deeds for both the 13000 Eckles Road and 12950 Eckles Road properties during 2007. Both Restrictive Covenants are an essential part of the corrective measures for the Site and will be maintained unless otherwise agreed to by GM, U.S. EPA, and in consultation with MDEQ.

The Declaration of Restrictive Covenant for the 13000 Eckles Road property was recorded to: 1) prohibit groundwater use on the Property for any purpose; 2) restrict the uses of the Property for any purpose other than those characterized by the Michigan Department of Environmental Quality (MDEQ) as Limited Commercial II, Limited Commercial III, Limited Commercial IV, and Limited Industrial, unless otherwise agreed to by GM and U.S. EPA and in consultation with MDEQ; 3) maintain the barrier wall and cover in Area 1; and 4) control particulate emissions from surface soil at the North Boundary Area (AOI 39), as described in the Dust Control Plan (13000 Eckles Road Site only).

The Declaration of Restrictive Covenant for the 12950 Eckles Road property was recorded to: 1) prohibit groundwater use on the Property for any purpose; 2) restrict the uses of the Property for any purpose other than those characterized by the MDEQ as Limited Commercial II, Limited Commercial III, Limited Commercial IV, and Limited Industrial, unless otherwise agreed to by GM and U.S. EPA and in consultation with MDEQ; and 3) maintain the barrier wall in Area 1.

2.1.2 PERMANENT MARKER

As specified in the Restrictive Covenants, three permanent markers were installed at the Site during December 2007. The permanent markers were installed in 2007 at the locations noted in the Permanent Marker Plans presented in Appendix A. The permanent markers were inspected on September 29, 2008 and they remain intact.

2.2 ENGINEERING CONTROLS

2.2.1 AREA 1 COVER AND BARRIER WALL

As per the OMM Plan, the concrete slab has remained in place inside the perimeter of the Area 1 barrier wall to limit the infiltration of precipitation into the subsurface. The concrete slab was inspected on September 29, 2008 and appeared to be intact with no new large cracks or pathways to the subsurface.

2.2.2 GROUNDWATER COLLECTION AND TREATMENT SYSTEM

The Site maintains an on-site groundwater collection and treatment system which treats water from the on-site French Drain and discharges the treated groundwater under permit with the City of Detroit Water and Sewerage Department (DWSD). Effluent from the treatment system is sampled pursuant to the DWSD permit. An Operations and Maintenance Manual (O&M Manual) was developed detailing procedures for operating the on-site groundwater treatment system. The O&M Manual provides information regarding the treatment system components, operation and maintenance of such components, startup and shutdown procedures, information management procedures, sampling and analysis requirements, laboratory requirements, training and awareness requirements, health and safety requirements, emergency response procedures, and waste management requirements. The O&M Manual provides guidance and reference for the proper operation and maintenance of the treatment system by Site operating personnel, and will be used and maintained as long as the groundwater collection and treatment system is operating at the Site. As modifications are made to the system (e.g., for system optimization), the O&M Manual will be modified accordingly. The groundwater collection and treatment system will be operated such that the plume remains stable in accordance with Section 11 of the AOC. Plume stability criteria are presented in Table 2.1.

The groundwater collection and treatment system operates under Special Discharge Permit DWSD-SD-0092165, for the discharge of treated groundwater from the treatment system effective through August 30, 2009. The permit requirements include: monthly collection of a discharge sample for laboratory analysis; completion of a maintenance log detailing daily discharge amounts and system breakdowns or repairs; and submittal of a report every 6 months. The Special Discharge Permit is presented in Appendix B. The discharge sample results have continued to meet the Permit's criteria.

2.2.3 GROUNDWATER MONITORING PLAN (GMP)

A Groundwater Monitoring Plan (GMP) Addendum was submitted to and approved with changes by the U.S. EPA on March 4, 2008. A revised GMP dated April 2008 was submitted which incorporated the approved changes. The GMP Addendum added two monitoring wells in Area 1 and a monitoring well in AOI 31 to the annual sampling program. It also included the monitoring of three newly installed monitoring wells in AOI 21 for the presence of LNAPL. Groundwater samples and water level measurements were collected from monitoring wells described in the GMP on September 29, 2008. A sample summary is presented in Table 2.2.

The groundwater purging and sampling was conducted in accordance with GM Procedure No. SOP-6.4 provided in the GMP. Laboratory analysis and data validation were conducted in accordance with the Quality Assurance Project Plan (QAPP) (RFI Work Plan Appendix C). A data validation memorandum is provided in Appendix C.

2.2.3.1 GROUNDWATER ELEVATION AND LNAPL MONITORING

Groundwater elevation data was collected from monitoring wells at on-site and off-site locations, as described in the GMP. Site-wide water levels were measured from on-site and off-site monitoring wells to confirm groundwater flow directions and evaluate the effectiveness of the Area 1 barrier wall. Groundwater elevations were measured on September 29, 2008.

In accordance with the GMP, additional monitoring activities in AOI 21 to monitor the presence and extent of LNAPL have continued. LNAPL thicknesses were measured quarterly, if present, in the seven monitoring wells associated with AOI 21 on February 27, June 11, September 29, and December 16, 2008.

The monitoring wells identified for groundwater elevation and LNAPL monitoring are presented in Table 2.3.

2.2.4 DUST CONTROL PLAN

A Dust Control Plan was submitted and approved by the U.S. EPA on January 30, 2007. The AOI 39 Soil Dust Control Plan is presented in Appendix D. No construction activities requiring dust control were performed in 2008.

2.2.5 MONITORING WELL SUMMARY

Table 2.4 presents a list of monitoring wells in the GMP, including construction details, current use, and planned action. The locations of all currently existing GMP monitoring wells at on-site and off-site locations are presented on Plan 1.

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3.0 RESULTS

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3.1 GMP RESULTS

3.1.1 AREA 1 GMP SAMPLING RESULTS

In April 2008, MW-OS-8D was successfully located on the Hercules Property and repaired. MW-OS-8D had been damaged during construction activities conducted by the neighboring off-site property owner during 2005. The last sample prior to the 2008 sampling was collected during March 2005. The location of the well was identified in the field with GPS coordinates and the area was explored with a small backhoe. The well riser was identified approximately 3 feet below ground surface and the well restoration was completed with a new flushmount protective casing.

During September 2008, groundwater samples were collected from HA-16, MW-OS-5D, MW-OS-6D, MW-OS-7D, and MW-OS-8D and submitted for the analysis of nickel. In addition, in accordance with the GMP Addendum, groundwater samples were collected from HA-14 and OW-24 and submitted for the analysis of nickel, total chromium, hexavalent chromium, and trivalent chromium to evaluate groundwater conditions on-site and at the Site perimeter as required in the AOC.

Nickel was been detected in groundwater samples collected from an off-site monitoring well, HA-16, which is located south of Area 1, at a concentration of 657 mg/L which is significantly lower than historical concentrations detected in this monitoring well. Although the nickel concentration remains higher than the drinking water standard; the concentration is lower than the site-specific, risk-based criteria for the non-potable groundwater exposures that are reasonably expected for this area (i.e., construction worker ingestion of and dermal contact with groundwater), as discussed in the RFI Report. Nickel concentrations in OW-24, located inside the Area 1 barrier wall, remained stable, and decreased significantly in HA-14, located immediately south of the Area 1 barrier wall at the property boundary.

Chromium was not detected in the groundwater sample collected from monitoring well HA-14, located at the property boundary. Hexavalent chromium was detected at a concentration of 181 mg/L in the groundwater sample from on-site monitoring well, OW-24. This concentration is much lower than the 633 mg/L detected in February 2004. And although this concentration is greater than the site-specific groundwater contact criteria presented in Table 2.1, the monitoring well is located within the area contained by the Area 1 Barrier Wall and all intrusive activities in this area are restricted unless

specifically approved in writing by GM and U.S. EPA and in consultation with the MDEQ.

The results of the 2008 GMP samples show that groundwater concentrations are stable or decreasing and remain below site-specific risk-based criteria at off-site locations. The extent of off-site nickel identified in groundwater remains delineated by MW-OS-5D, MW-OS-6D, MW-OS-7D, and MW-OS-8D. Groundwater in this area is not being used as a drinking water supply and all properties in this area are serviced by a municipal water supply.

Analytical results of Area 1 groundwater samples are presented on Figure 3.1 and summarized in Table 3.1.

3.1.2 AOI 31 GMP SAMPLING RESULTS

During September 2008, groundwater samples were collected from MW-103S, MW-202S, MW-211S, MW-213S, MW-215S, MW-216S, and MW-217S and submitted for the analysis of 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trichloroethylene, and vinyl chloride to evaluate groundwater conditions on-site, at the Site perimeter, and at off-site monitoring wells, as required in the AOC.

Trichloroethylene has been detected in groundwater samples collected from some off-site monitoring wells southeast of AOI 31 at concentrations higher than the drinking water standard; however, the concentrations are lower than the site-specific, risk-based criteria for the non-potable groundwater exposure that are reasonably expected for this area since all properties within the neighborhood located southeast of AOI 31 are connected to a municipal water supply, as discussed in the RFI Report. The analytical results of the 2008 GMP samples show that groundwater concentrations are stable or decreasing and below site-specific risk-based criteria. The extent of off-site VOCs identified in groundwater remains delineated by MW-211S, MW-215S, MW-216S, and MW-217S.

Analytical results of AOI 31 groundwater samples are presented on Figure 3.2 and summarized in Table 3.1.

3.1.3 GROUNDWATER ELEVATION AND LNAPL MONITORING

Groundwater flow directions remain consistent with previous investigations. Groundwater generally flows to the southeast, except in the vicinity of the Area 1 barrier

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wall and French drain collection system. Generally, water levels have decreased at locations within the Area 1 barrier wall. Groundwater elevation data is presented in Table 3.2. Groundwater elevation contours based on groundwater elevation measurements collected September 29, 2008 are presented on Figure 3.3.

3.1.3.1 LNAPL MONITORING

LNAPL thicknesses were measured in all seven AOI 21 monitoring wells, if present, on February 27, June 11, September 29, and December 16, 2008.

LNAPL was not detected in MW-21-2S, MW-21-5S, or MW-21-6S during 2008. LNAPL was found in MW-A1-16S with a thickness of 0.01 feet and in MW-21-4S with a thickness of 0.18 feet on February 27, 2008. LNAPL was found in MW-21-3S during three monitoring events in 2008, with thickness of 0.01, 0.31, and 0.24 feet in June, September, and December, respectively. LNAPL was not detected in MW-21-3S in February 2008.

LNAPL thickness measurements are summarized in Table 3.3. LNAPL thickness measurements are presented on Figure 3.4.

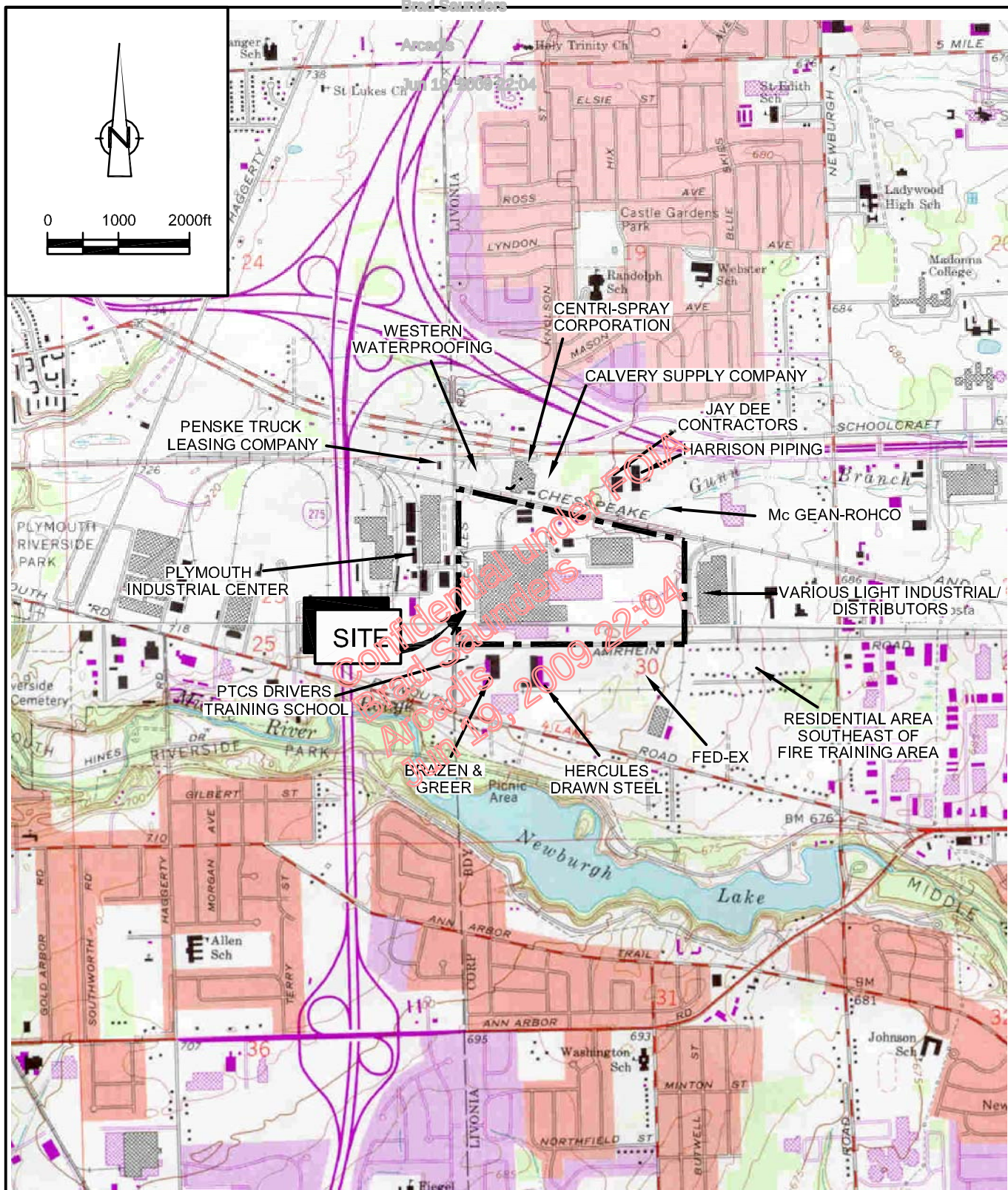
MW-21-3S is located at least 300 feet upgradient of the southern boundary of the Site. MW-21-6S was installed approximately 5 feet downgradient of MW-21-3S to determine if the extent of the LNAPL is stable. LNAPL has not been detected in MW-21-6S since being installed in December 2007. The LNAPL periodically detected in AOI 21 monitoring wells appear to fluctuate seasonally. The LNAPL in AOI 21 monitoring wells is delineated by MW-21-2S, MW-21-5S, and MW-21-6S.

4.0 EVAULATION OF GROUNDWATER MONITORING PLAN

The results of the 2008 GMP sampling confirm that off-site nickel and TCE remain stable and below site-specific risk-based criteria. The nickel-impacted groundwater south of Area 1 and TCE-impacted groundwater southeast of AOI 31 continue to be delineated by downgradient monitoring wells.

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SOURCE: USGS QUADRANGLE MAPS;
NORTHVILLE AND WAYNE, MICHIGAN



LIVONIA

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figure 1.1
SITE LOCATION

12950 ECKLES ROAD SITE
13000 ECKLES ROAD SITE
Livonia, Michigan

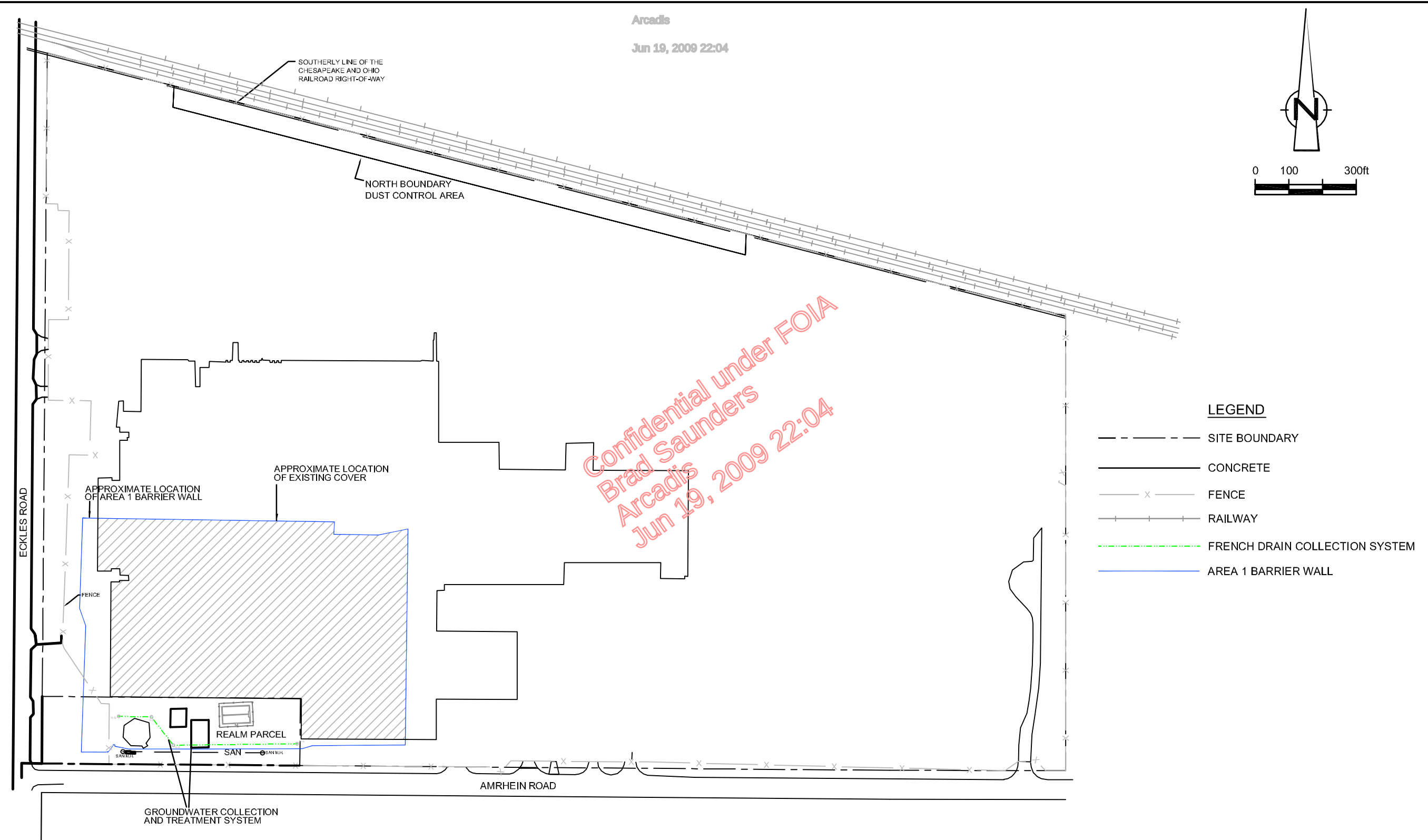


figure 1.2
SITE PLAN
12950 ECKLES ROAD SITE
13000 ECKLES ROAD SITE
Livonia, Michigan



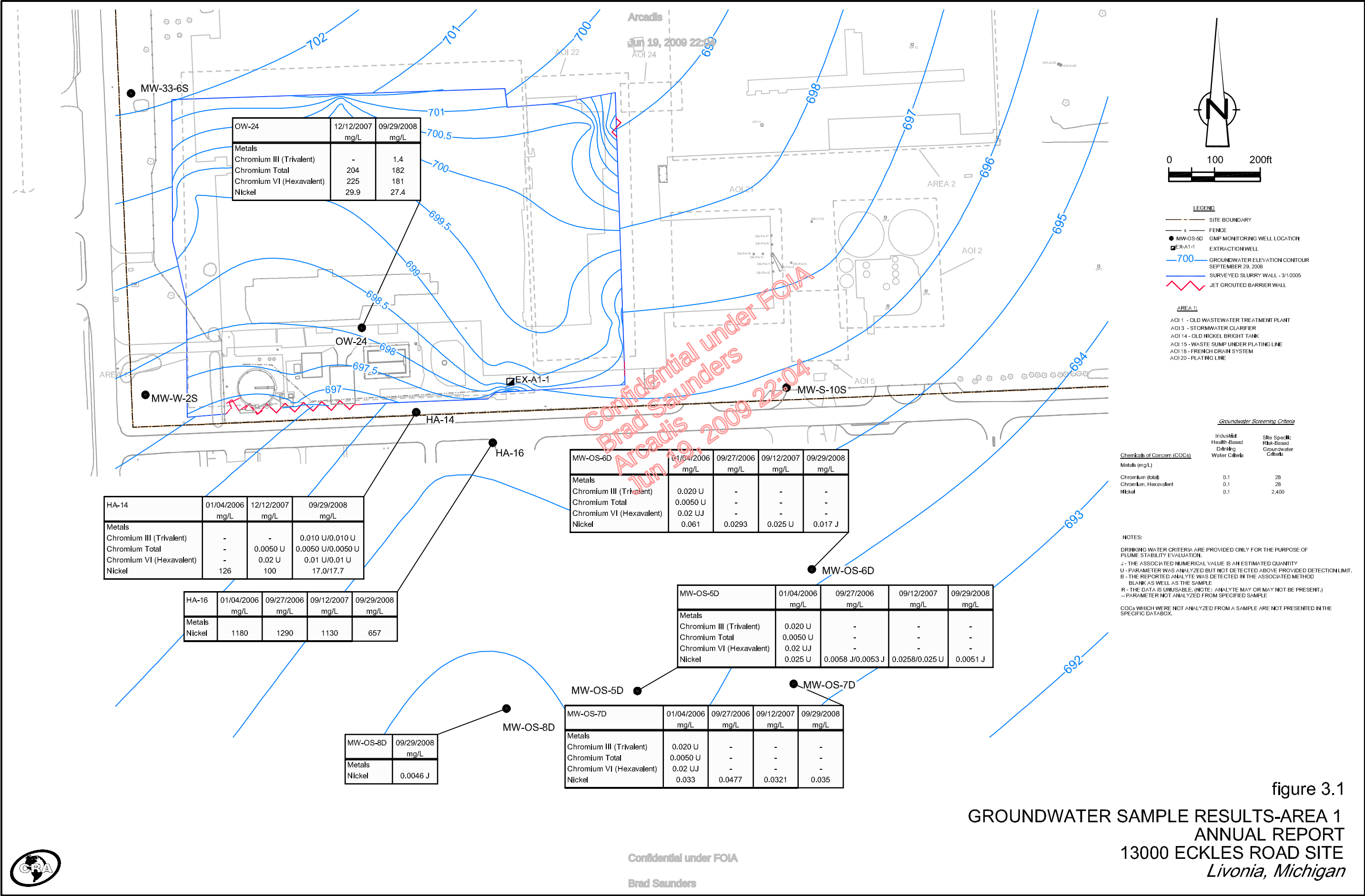


figure 3.1
GROUNDWATER SAMPLE RESULTS-AREA 1
ANNUAL REPORT
13000 ECKLES ROAD SITE
Livonia, Michigan



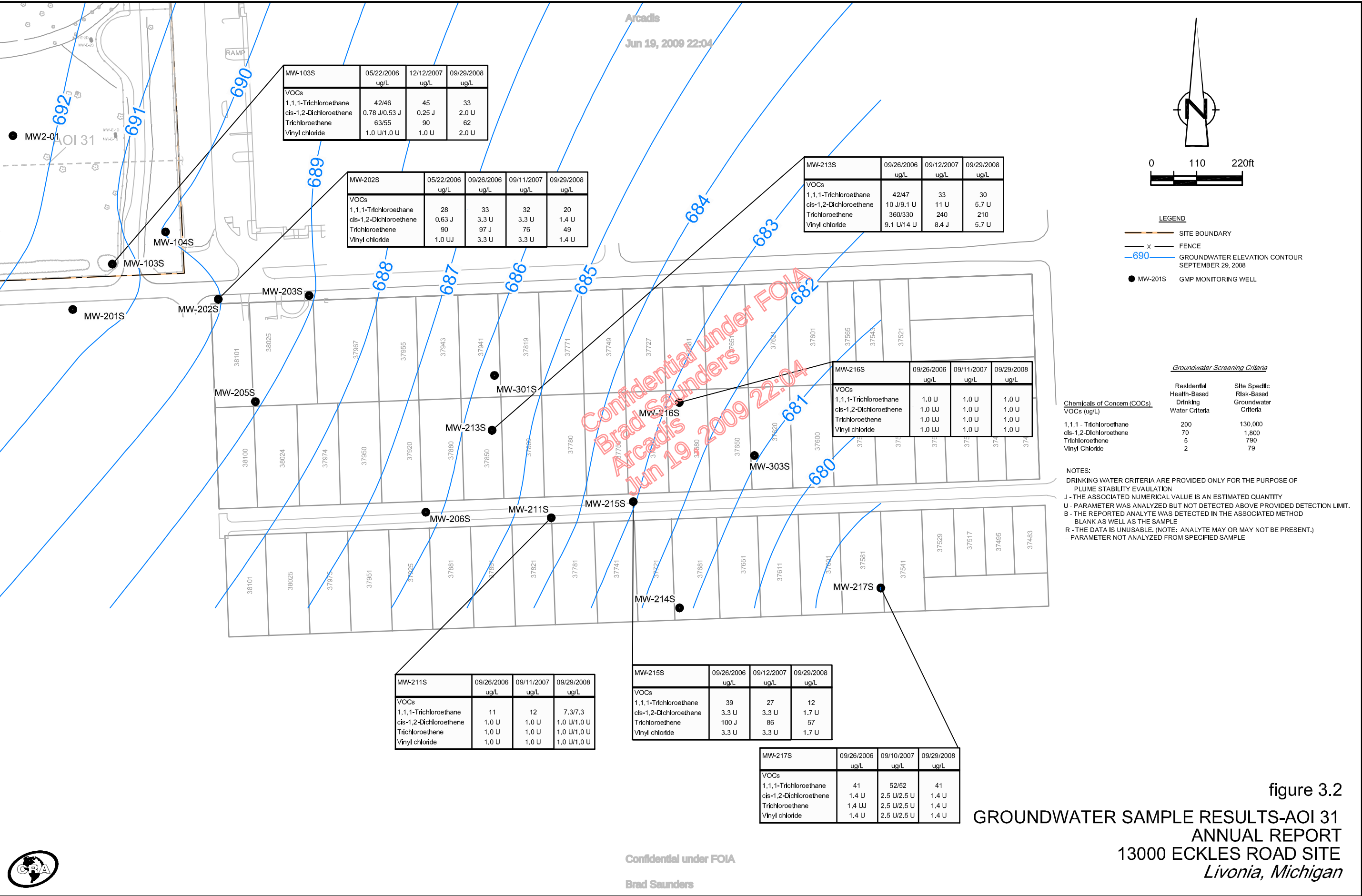


figure 3.2
GROUNDWATER SAMPLE RESULTS-AOI 31
ANNUAL REPORT
13000 ECKLES ROAD SITE
Livonia, Michigan



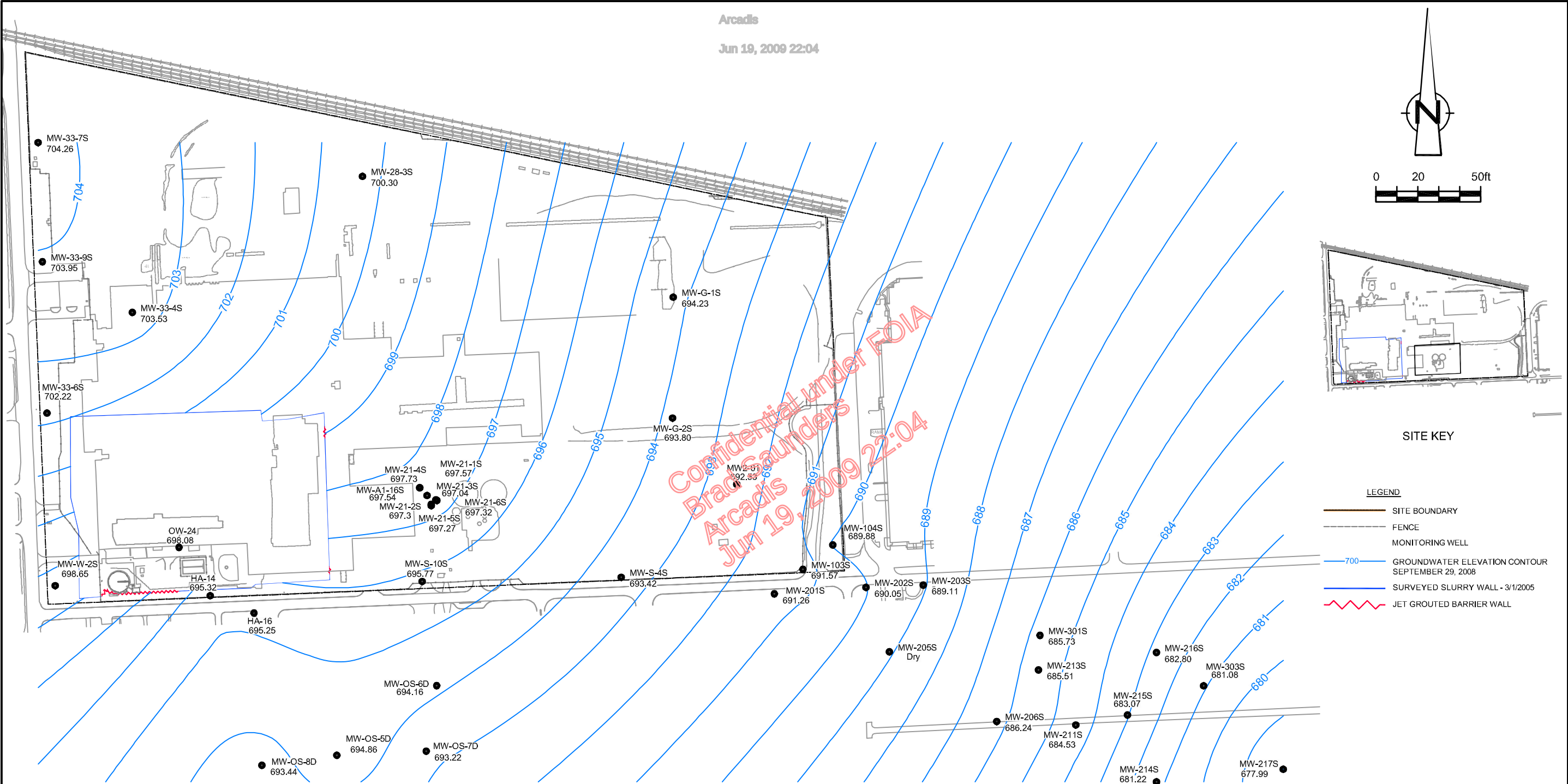


figure 3.3
GROUNDWATER ELEVATION CONTOURS - SEPTEMBER 29, 2008
ANNUAL REPORT
13000 ECKLES ROAD SITE
Livonia, Michigan



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**Table 2.1 - Groundwater Criteria for verifying Plume Stability and
Evaluating Health Significance
GMC - 13000 Eckles Road, Livonia, Michigan**

Area	Chem Group	Chemical	CASRN	Plume Stability Criteria (mg/L)	Risk-Based Criteria (mg/L)
Area 01	INORG	Chromium (total)	7440-47-3	1.0E-01	2.8E+01
Area 01	INORG	Chromium VI	18540-29-9	1.0E-01	2.8E+01
Area 01	INORG	Nickel	7440-02-0	1.0E-01	2.4E+03
AOI 31	VOC	cis-1,2-Dichloroethene	156-59-2	7.0E-02	1.8E+00
AOI 31	VOC	1,1,1-Trichloroethane	71-55-6	2.0E-01	1.3E+02
AOI 31	VOC	Trichloroethene	79-01-6	5.0E-03	7.9E-01
AOI 31	VOC	Vinyl Chloride	75-01-4	2.0E-03	7.9E-02
Notes:					
1. The criteria for verifying plume stability are drinking water criteria.					
2. The risk-based criterion for evaluating health significance for Area 1 is based on construction worker contact with groundwater.					
3. The risk-based criteria for evaluating health significance for AOI 31 are based on the most potential significant exposure among construction worker contact, residential vapor intrusion, residential nonpotable groundwater uses.					

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TABLE 2.2
SAMPLE SUMMARY - GMP SAMPLING
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Area of Interest	On-Site / Off-Site	Sample Matrix	Sample Location	Sample ID	Sample Date	Analysis	Notes
Area 01	On-Site	Groundwater	OW-24	GW-12607-092908-JY-001	9/29/2008	Nickel, Total Chromium, Hexavalent Chromium	
Area 01	On-Site	Groundwater	HA-14	GW-12607-092908-JY-002	9/29/2008	Nickel, Total Chromium, Hexavalent Chromium	
AOI 31	Off-Site	Groundwater	MW-217S	GW-12607-092908-EV-003	9/29/2008	Select VOCs	
AOI 31	Off-Site	Groundwater	MW-211S	GW-12607-092908-EV-004	9/29/2008	Select VOCs	
Area 01	On-Site	Groundwater	HA-14	GW-12607-092908-JY-005	9/29/2008	Nickel, Total Chromium, Hexavalent Chromium	Duplicate (002)
AOI 31	On-Site	Groundwater	MW-103S	GW-12607-092908-JY-006	9/29/2008	Select VOCs	
AOI 31	Off-Site	Groundwater	MW-211S	GW-12607-092908-EV-007	9/29/2008	Select VOCs	Duplicate (004)
AOI 31	Off-Site	Groundwater	MW-213S	GW-12607-092908-EV-008	9/29/2008	Select VOCs	
AOI 31	Area 01	Groundwater	MW-202S	GW-12607-092908-EM-009	9/29/2008	Select VOCs	
Area 01	Off-Site	Groundwater	HA-16	GW-12607-092908-JY-010	9/29/2008	Nickel	
AOI 31	Off-Site	Groundwater	MW-215S	GW-12607-092908-EV-011	9/29/2008	Select VOCs	
AOI 31	Off-Site	Groundwater	MW-216S	GW-12607-092908-EV-012	9/29/2008	Select VOCs	
Area 01	Off-Site	Groundwater	MW-OS-7D	GW-12607-092908-EM-013	9/29/2008	Nickel	
Area 01	Off-Site	Groundwater	MW-OS-6D	GW-12607-092908-EM-014	9/29/2008	Nickel	
Area 01	Off-Site	Groundwater	MW-OS-8D	GW-12607-092908-EM-015	9/29/2008	Nickel	
Area 01	Off-Site	Groundwater	MW-OS-5D	GW-12607-092908-EM-016	9/29/2008	Nickel	

Notes:

Select VOCs - 1,1,1-Trichloroethane, cis-1,2-Dichloroethylene, Trichloroethylene, Vinyl Chloride

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TABLE 2.3

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GROUNDWATER ELEVATION MONITORING LOCATIONS
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

<i>Well ID.</i>	<i>Top of Riser Elevation (ft AMSL)</i>	<i>Top of Screen Depth (ft BGS)</i>	<i>Bottom of Screen Elevation (ft BGS)</i>
AOI 21 - Former Pickling Machines/Flat Polish Area			
MW-A1-16S	702.6	5	15
MW-21-1S	704.0	4	14
MW-21-2S	702.4	5	15
MW-21-3S	702.5	5	15
MW-21-4S	704.1	3	13
MW-21-5S	702.5	3	13
MW-21-6S	702.7	3	13
AOI 31 - Former Fire Training Area			
MW-104S	702.1	5.0	18
MW-201S	702.1	6.8	16.8
MW-203S	697.7	5.1	15.1
MW-205S	697.4	4.8	14.8
MW-206S	695.6	4.8	14.8
MW-214S	687.8	3.0	13
MW-301S	696.9	10.0	20.0
MW-303S	687.4	5.0	15.0
Site-wide Monitoring Wells			
MW-33-4S	706.3	6.0	16.0
MW-33-6S	707.2	6.0	16.0
MW-33-7S	710.4	6.5	16.5
MW-33-9S	709.1	4.0	14.0
MW-28-3S	705.6	5.0	15.0
MW-S-10S	702.7	7.5	17.5
MW-S-4S	700.4	7.0	17.0
MW-W-2S	705.2	6.5	16.5
MW-G-1S	700.0	6.5	16.5
MW-G-2S	705.3	11.5	21.5
MW2-01	702.3	10.0	15.0

Notes:

ft AMSL - feet above mean sea level.

Depth to LNAPL and Depth to Groundwater levels were measured in AOI 21 MWs

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TABLE 2.4
MONITORING WELL STATUS SUMMARY
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

AOI	On-Site/ Off-Site	ID	Constructed DTB	Screen Length	Assumed Diameter	Use	Status
Area 1	off-Site	HA-16	30	10	2 inch	GMP - Sampling	Existing
AOI 31	off-Site	MW-202S	15	10	2 inch	GMP - Sampling	Existing
AOI 31	off-Site	MW-211S	16	10	2 inch	GMP - Sampling	Existing
AOI 21	on-Site	MW-21-2S	15	10	2 inch	GMP - LNAPL Levels	Existing
AOI 31	off-Site	MW-213S	15	10	2 inch	GMP - Sampling	Existing
AOI 21	on-Site	MW-21-3S	15	10	2 inch	GMP - LNAPL Levels	Existing
AOI 31	off-Site	MW-215S	13	10	2 inch	GMP - Sampling	Existing
AOI 31	off-Site	MW-216S	13	10	2 inch	GMP - Sampling	Existing
AOI 31	off-Site	MW-217S	13	10	2 inch	GMP - Sampling	Existing
Area 1/AOI 21	on-Site	MW-A1-16S	15	10	2 inch	GMP - LNAPL Levels	Existing
Area 1	off-Site	MW-OS-5D	27	10	2 inch	GMP - Sampling	Existing
Area 1	off-Site	MW-OS-6D	28	10	2 inch	GMP - Sampling	Existing
Area 1	off-Site	MW-OS-7D	28	10	2 inch	GMP - Sampling	Existing
Area 1	off-Site	MW-OS-8D	27	10	2 inch	GMP - Sampling	Existing
AOI 21	on-Site	MW-21-1S	15	10	2 inch	GMP - LNAPL Levels	Existing
AOI 21	on-Site	MW-21-4S	13	10	2 inch	GMP - LNAPL Levels	Existing
AOI 21	on-Site	MW-21-5S	13	10	2 inch	GMP - LNAPL Levels	Existing
AOI 21	on-Site	MW-21-6S	13	10	2 inch	GMP - LNAPL Levels	Existing
Area 1	on-Site	HA-14	29	10	2 inch	GMP - Sampling	Existing
General	on-Site	MW2-01	15	5	2 inch	GMP - Water levels	Existing
AOI 31	on-Site	MW-103S	18	10	2 inch	GMP - Sampling	Existing
AOI 31	on-Site	MW-104S	18	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-201S	17	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-203S	15	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-205S	15	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-206S	15	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-214S	13	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-301S	20	10	2 inch	GMP - Water Levels	Existing
AOI 31	off-Site	MW-303S	15	10	2 inch	GMP - Water Levels	Existing
AOI 28	on-Site	MW-28-3S	15	10	2 inch	GMP - Water Levels	Existing

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TABLE 2.4
MONITORING WELL STATUS SUMMARY
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

AOI	On-Site/ Off-Site	ID	Constructed DTB	Screen Length	Assumed Diameter	Use	Status
AOI 33	on-Site	MW-33-4S	15	10	2 inch	GMP - Water levels	Existing
AOI 33	on-Site	MW-33-6S	16	10	2 inch	GMP - Water levels	Existing
AOI 33	on-Site	MW-33-7S	16.5	10	2 inch	GMP - Water levels	Existing
AOI 33	on-Site	MW-33-9S	14	10	2 inch	GMP - Water levels	Existing
General	on-Site	MW-G-1S	16.5	10	2 inch	GMP - Water levels	Existing
General	on-Site	MW-G-2S	21.5	10	2 inch	GMP - Water levels	Existing
General	on-Site	MW-S-10S	17.5	10	2 inch	GMP - Water levels	Existing
General	on-Site	MW-S-4S	17	10	2 inch	GMP - Water levels	Existing
Area 1	on-Site	MW-W-2S	16.5	10	2 inch	GMP - Water levels	Existing
Area 1	on-Site	OW-24	25	10	2 inch	GMP - Sampling	Existing

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TABLE 3.1

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**ANALYTICAL RESULTS OF GMP GROUNDWATER SAMPLES
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

<i>Area of Interest:</i>		AOI 31	AOI 31	AOI 31	AOI 31	AOI 31	AOI 31
<i>Location Name:</i>		MW-103S	MW-202S	MW-211S	MW-211S	MW-213S	MW-215S
<i>Sample ID:</i>		GW-12607-092908-JY-006	GW-12607-092908-EM-009	GW-12607-092908-EV-004	GW-12607-092908-EV-007	GW-12607-092908-EV-008	GW-12607-092908-EV-011
<i>Sample Date:</i>		9/29/2008	9/29/2008	9/29/2008	9/29/2008	9/29/2008	9/29/2008
<i>Sample Type:</i>					(Duplicate)		
<i>Parameter:</i>	<i>Units</i>						
VOCs							
1,1,1-Trichloroethane	ug/L	33	20	7.3	7.3	30	12
cis-1,2-Dichloroethene	ug/L	2.0 U	1.4 U	1.0 U	1.0 U	5.7 U	1.7 U
Trichloroethene	ug/L	62	49	1.0 U	1.0 U	210	57
Vinyl chloride	ug/L	2.0 U	1.4 U	1.0 U	1.0 U	5.7 U	1.7 U
Metals							
Chromium III (Trivalent)	mg/L	--	--	--	--	--	--
Chromium Total	mg/L	--	--	--	--	--	--
Chromium VI (Hexavalent)	mg/L	--	--	--	--	--	--
Nickel	mg/L	--	--	--	--	--	--

Notes:

U - Not present at or above the associated value

J - Estimated concentration

-- sample was not analyzed for specific parameter

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TABLE 3.1

ANALYTICAL RESULTS OF GMP GROUNDWATER SAMPLES
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Area of Interest:		AOI 31	AOI 31	Area 01	Area 01	Area 01	Area 01
Location Name:		MW-216S	MW-217S	HA-14	HA-14	HA-16	MW-OS-5D
Sample ID:		GW-12607-092908-EV-012	GW-12607-092908-EV-003	GW-12607-092908-JY-002	GW-12607-092908-JY-005	GW-12607-092908-JY-010	GW-12607-092908-EM-016
Sample Date:		9/29/2008	9/29/2008	9/29/2008	9/29/2008	9/29/2008	9/29/2008
Sample Type:					(Duplicate)		
Parameter:	Units						
VOCs							
1,1,1-Trichloroethane	ug/L	1.0 U	41	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.4 U	--	--	--	--
Trichloroethene	ug/L	1.0 U	1.4 U	--	--	--	--
Vinyl chloride	ug/L	1.0 U	1.4 U	--	--	--	--
Metals							
Chromium III (Trivalent)	mg/L	--	--	0.010 U	0.010 U	--	--
Chromium Total	mg/L	--	--	0.0050 U	0.0050 U	--	--
Chromium VI (Hexavalent)	mg/L	--	--	0.01 U	0.01 U	--	--
Nickel	mg/L	--	--	17.0	17.7	657	0.0051 J

Notes:

U - Not present at or above the associated val

J - Estimated concentration

-- sample was not analyzed for specific param

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TABLE 3.1

ANALYTICAL RESULTS OF GMP GROUNDWATER SAMPLES
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Area of Interest:		Area 01	Area 01	Area 01	Area 01
Location Name:		MW-OS-6D	MW-OS-7D	MW-OS-8D	OW-24
Sample ID:		GW-12607-092908-EM-014	GW-12607-092908-EM-013	GW-12607-092908-EM-015	GW-12607-092908-JY-001
Sample Date:		9/29/2008	9/29/2008	9/29/2008	9/29/2008
Sample Type:					
Parameter:	Units				
VOCs					
1,1,1-Trichloroethane	ug/L	--	--	--	--
cis-1,2-Dichloroethene	ug/L	--	--	--	--
Trichloroethene	ug/L	--	--	--	--
Vinyl chloride	ug/L	--	--	--	--
Metals					
Chromium III (Trivalent)	mg/L	--	--	--	1.4
Chromium Total	mg/L	--	--	--	182
Chromium VI (Hexavalent)	mg/L	--	--	--	181
Nickel	mg/L	0.017 J	0.035	0.0046 J	27.4

Notes:

U - Not present at or above the associated val
J - Estimated concentration
-- sample was not analyzed for specific param

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TABLE 3.2

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GROUNDWATER ELEVATION MEASUREMENTS
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Well ID	Groundwater Elevation 2/27/2008	Groundwater Elevation 6/11/2008	Groundwater Elevation 9/29/2008	Groundwater Elevation 12/16/2008
HA-14	-	-	695.32	-
HA-16	-	-	695.25	-
MW-103S	-	-	691.57	-
MW-104S	-	-	689.88	-
MW2-01	-	-	692.53	-
MW-201S	-	-	691.26	-
MW-202S	-	-	690.05	-
MW-203S	-	-	689.11	-
MW-205S	-	-	Dry	-
MW-206S	-	-	686.24	-
MW-211S	-	-	684.53	-
MW-213S	-	-	685.51	-
MW-214S	-	-	681.22	-
MW-215S	-	-	683.07	-
MW-216S	-	-	682.80	-
MW-217S	-	-	677.99	-
MW-21-1S	698.92	698.67	697.57	697.45
MW-21-2S	698.58	698.22	697.30	696.90
MW-21-3S	698.61	698.10	697.04	696.70
MW-21-4S	699.27	698.89	697.73	697.36
MW-21-5S	698.52	698.16	697.27	696.86
MW-21-6S	698.6	698.23	697.32	696.90
MW-A1-16S	698.75	698.42	697.54	697.17
MW-28-3S	-	-	700.30	-
MW-301S	-	-	685.73	-
MW-303S	-	-	681.08	-
MW-33-4S	-	-	703.53	-
MW-33-6S	-	-	702.22	-
MW-33-7S	-	-	704.26	-
MW-33-9S	-	-	703.95	-
MW-G-1S	-	-	694.23	-
MW-G-2S	-	-	693.80	-
MW-OS-5D	-	-	694.86	-
MW-OS-6D	-	-	694.16	-
MW-OS-7D	-	-	693.22	-
MW-OS-8D	-	-	693.44	-
MW-S-10S	-	-	695.77	-
MW-S-4S	-	-	693.42	-
MW-W-2S	-	-	698.65	-
OW-24	-	-	698.08	-

Notes:

Groundwater Elevation measured in feet above mean sea level
- Groundwater Elevation was not measured

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TABLE 3.3

Page 1 of 3

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**LNAPL THICKNESS MONITORING
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

Area of Interest:

Location:

Date:

	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21
	MW-21-1S	MW-21-1S	MW-21-1S	MW-21-1S	MW-21-2S	MW-21-2S	MW-21-2S	MW-21-2S	MW-21-2S	MW-21-3S	MW-21-3S	MW-21-3S
	2/27/2008	6/11/2008	9/29/2008	12/16/2008	2/27/2008	6/11/2008	9/29/2008	12/16/2008	2/27/2008	6/11/2008	9/29/2008	12/16/2008

LNAPL Monitoring**Units**

Depth to Product	feet	-	-	5.98	6.38	-	-	-	-	-	4.49	5.25	5.66
Depth to Water	feet	5.07	5.33	6.43	6.55	3.96	4.35	5.27	5.67	3.99	4.50	5.56	5.9
LNAPL Thickness (feet)	feet	-	-	0.45	0.17	-	-	-	-	-	0.01	0.31	0.24

Notes:

- LNAPL not identified in Monitoring Well

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TABLE 3.3

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**LNAPL THICKNESS MONITORING
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

Area of Interest:

Location:

Date:

AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21	AOI 21
MW-A1-16S	MW-A1-16S	MW-A1-16S	MW-A1-16S	MW-21-4S	MW-21-4S	MW-21-4S	MW-21-4S	MW-21-4S	MW-21-5S	MW-21-5S
2/27/2008	6/11/2008	9/29/2008	12/16/2008	2/27/2008	6/11/2008	9/29/2008	12/16/2008	2/27/2008	6/11/2008	6/11/2008

LNAPL Monitoring**Units**

Depth to Product	feet	3.94	-	-	-	4.69	4.92	-	-	-	-
Depth to Water	feet	3.95	4.28	5.16	5.53	4.87	5.25	6.41	6.78	4.01	4.37
LNAPL Thickness (feet)	feet	0.01	-	-	-	0.18	0.33	-	-	-	-

Notes:

- LNAPL not identified in Monitoring Well

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TABLE 3.3

**LNAPL THICKNESS MONITORING
ANNUAL REPORT
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

<i>Area of Interest:</i>	<i>AOI 21</i>	<i>AOI 21</i>	<i>AOI 21</i>	<i>AOI 21</i>	<i>AOI 21</i>	<i>AOI 21</i>
<i>Location:</i>	<i>MW-21-5S</i>	<i>MW-21-5S</i>	<i>MW-21-6S</i>	<i>MW-21-6S</i>	<i>MW-21-6S</i>	<i>MW-21-6S</i>
<i>Date:</i>	<i>9/29/2008</i>	<i>12/16/2008</i>	<i>2/27/2008</i>	<i>6/11/2008</i>	<i>9/29/2008</i>	<i>12/16/2008</i>

LNAPL Monitoring	Units						
Depth to Product	feet	-	-	-	-	-	-
Depth to Water	feet	5.26	5.67	4.13	4.5	5.41	5.83
LNAPL Thickness (feet)	feet	-	-	-	-	-	-

Notes:

- LNAPL not identified in Monitoring Well

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APPENDIX A

GM AND REALM PERMANENT MARKER PLANS

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NOT TO SCALE

PERMANENT MARKER PLAN

THIS IS A SITE OF ENVIRONMENTAL CONTAMINATION. RESTRICTIONS ARE IN PLACE TO PREVENT UNACCEPTABLE EXPOSURE TO SUBSURFACE CONTAMINATION THAT IS PRESENT. THESE RESTRICTIONS GENERALLY: 1) PROHIBIT GROUNDWATER USE FOR ANY PURPOSE; 2) RESTRICT THE USES OF THE SITE INCLUDING PROHIBITING RESIDENTIAL USE; 3) RESTRICT THE USES OF THE SITE FOR ANY PURPOSE WHICH WILL INTERFERE WITH THE PERFORMANCE OF THE GROUNDWATER EXTRACTION SYSTEM AND TREATMENT OPERATIONS; 4) REQUIRE A DUST CONTROL PLAN FOR THE DISTURBANCE OF SURFACE AND SUBSURFACE SOILS WHICH COULD CAUSE AN UNACCEPTABLE DUST EXPOSURE IN THE NORTH BOUNDARY AREA; AND 5) PROHIBIT THE DISTURBANCE OF THE EXISTING COVER OR BARRIER WALL IDENTIFIED IN THE SOUTHWEST CORNER OF THE SITE WITHOUT THE EXPRESSED WRITTEN APPROVAL FROM GENERAL MOTORS CORPORATION. DETAILS CONCERNING THESE LAND AND RESOURCE RESTRICTIONS CAN BE FOUND AT THE WAYNE COUNTY REGISTER OF DEEDS, LIBER 45871, PAGES 446-461.

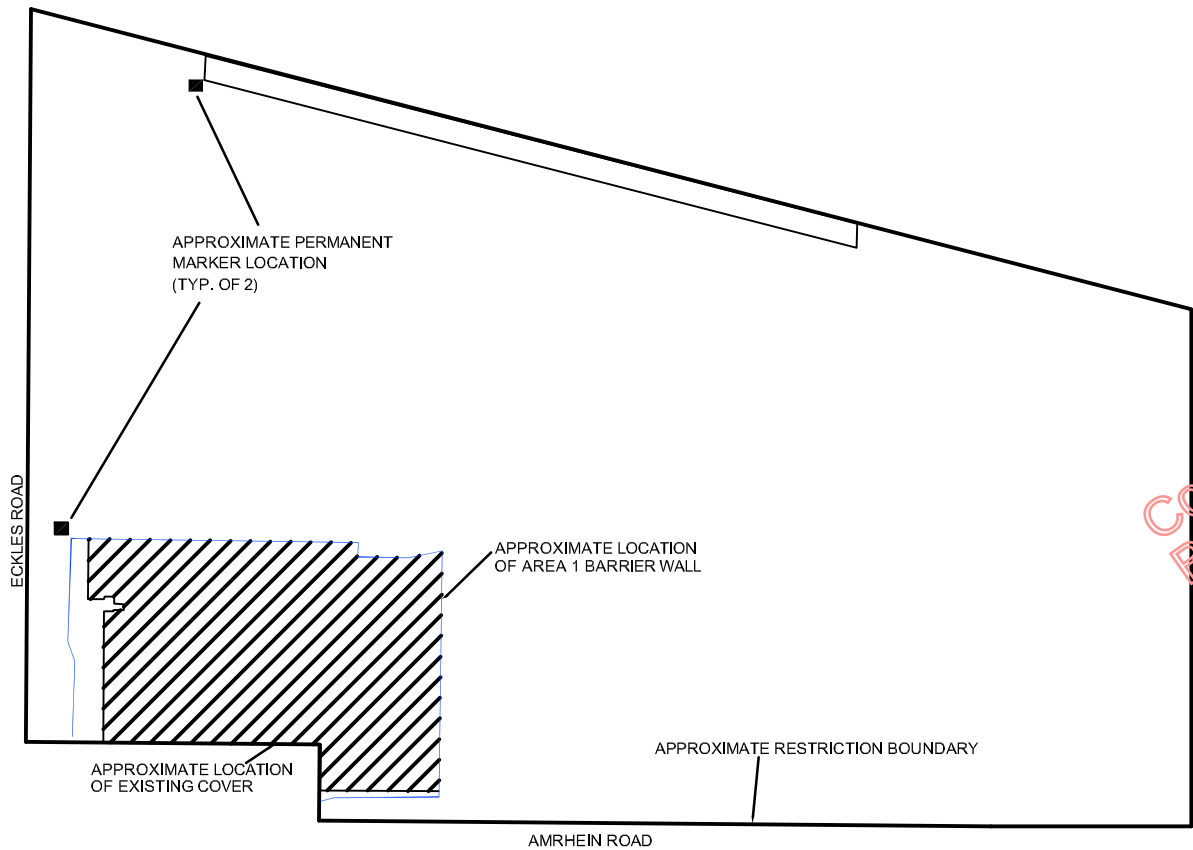
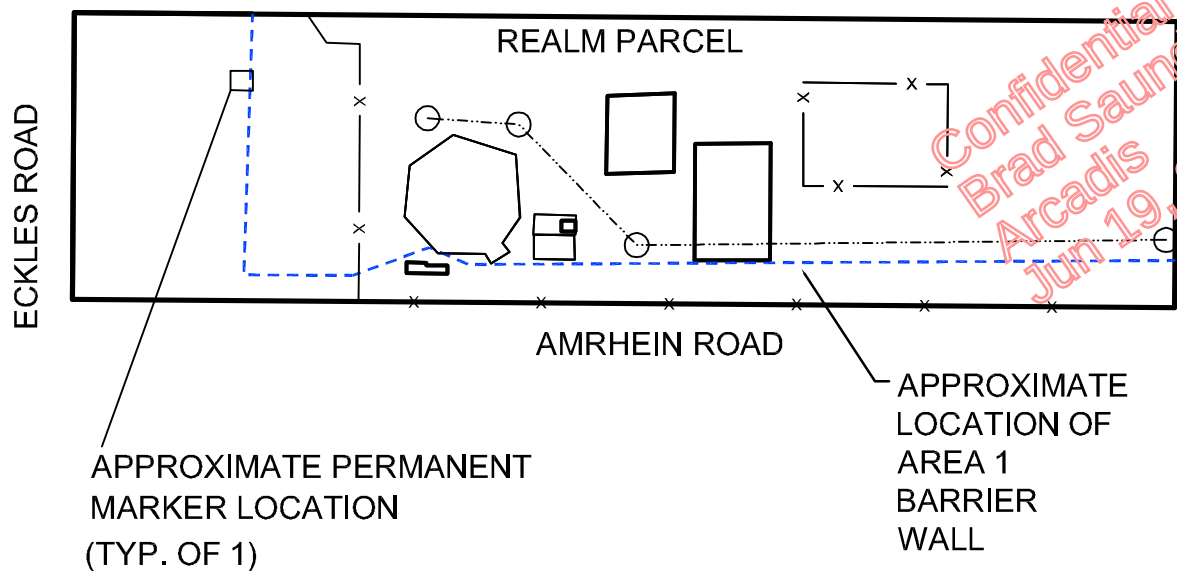
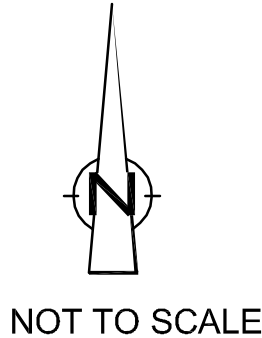


figure A.1

PERMANENT MARKER PLAN
RESTRICTIVE COVENANT
13000 ECKLES ROAD SITE
Livonia, Michigan





PERMANENT MARKER PLAN

THIS IS A SITE OF ENVIRONMENTAL CONTAMINATION. RESTRICTIONS ARE IN PLACE TO PREVENT UNACCEPTABLE EXPOSURE TO SUBSURFACE CONTAMINATION THAT IS PRESENT. THESE RESTRICTIONS GENERALLY: 1) PROHIBIT GROUNDWATER USE FOR ANY PURPOSE; 2) RESTRICT THE USES OF THE SITE INCLUDING PROHIBITING RESIDENTIAL USE; 3) RESTRICT THE USES OF THE SITE FOR ANY PURPOSE WHICH WILL INTERFERE WITH THE PERFORMANCE OF THE GROUNDWATER EXTRACTION SYSTEM AND TREATMENT OPERATIONS; AND 4) PROHIBIT THE DISTURBANCE OF THE BARRIER WALL WITHOUT THE EXPRESSED WRITTEN APPROVAL FROM GENERAL MOTORS CORPORATION. DETAILS CONCERNING THESE LAND AND RESOURCE RESTRICTIONS CAN BE FOUND AT THE WAYNE COUNTY REGISTER OF DEEDS, LIBER 46089, PAGE 412-426.

figure A.2
PERMANENT MARKER PLAN
RESTRICTIVE COVENANT
12950 ECKLES ROAD
Livonia, Michigan



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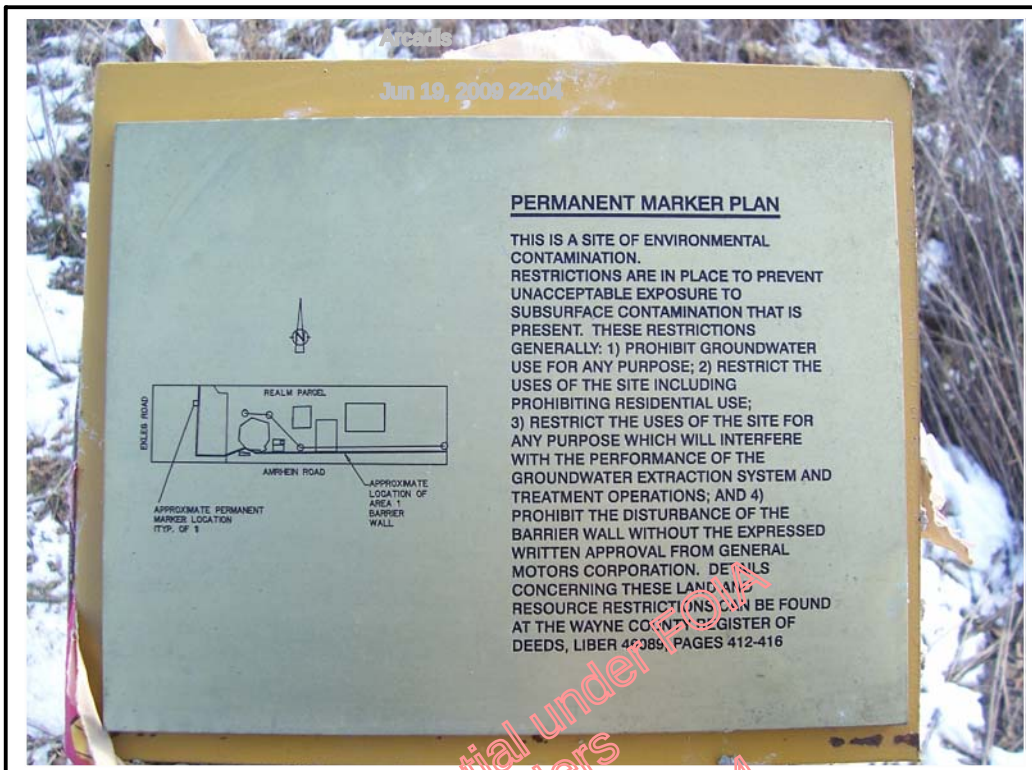


PHOTO 1: PERMANENT MARKER, 12950 ECKLES ROAD SITE.



PHOTO 2: PERMANENT MARKER, 13000 ECKLES ROAD SITE.

figure A.3

SITE PHOTOGRAPHS
12950 ECKLES ROAD
13000 ECKLES ROAD
Livonia, Michigan



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APPENDIX B

DWSD SPECIAL DISCHARGE PERMIT

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CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
INDUSTRIAL WASTE CONTROL DIVISION

303 S. LIVERNOIS AVENUE
DETROIT, MICHIGAN 48209
PHONE: 313.297.9400
FAX: 313.297.5860
WWW.CLDetroit.MI.US

CERTIFIED MAIL

August 31, 2007

Mr. Robert Hare
General Motors
2000 Centerpoint Parkway, MC 483-520-190
Pontiac, MI 48341-3147

SEP 13 2007
MAIL
DETROIT

Dear Mr. Hare:

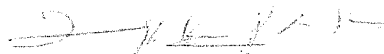
Re: Special Discharge Permit No. DWSD-SD-0092165
Site: GM/REALM-Livonia
12950 Eckles Road
Livonia, MI 48150

Enclosed is your Special Discharge Permit issued by the Detroit Water and Sewerage Department (DWSD) to discharge remediated groundwater from the above site into the Detroit sewer system. The DWSD based this permit on the data and other related information your company submitted to Industrial Waste Control Division.

Your permit contains specific discharge limitations, flow rate, self-monitoring and reporting requirements. The DWSD can rescind this permit at any time if the discharge shows noncompliance with the discharge limitations or if the DWSD determines that the effluent has an adverse effect on the Detroit Wastewater Treatment Plant. Failure to comply with these terms and conditions may result in the immediate permit revocation and appropriate enforcement action.

Should you have any questions, please contact Mr. Onoawarie Edevbie at (313) 297-5857 or myself at (313) 297-5882.

Sincerely,



Jayakumar Pallegar, P.E.
Sr. Assoc. Engineer
Industrial Waste Control Division

JP/OE/jj

cc: Mr. Chris Meincke,
Conestoga-Rovers & Associates
14496 Sheldon Road, Suite 200
Plymouth, MI 48170-6026

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KWAME KILPATRICK, MAYOR

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CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
INDUSTRIAL WASTE CONTROL DIVISION

303 S. LIVERNOIS AVENUE
DETROIT, MICHIGAN 48209
PHONE: 313.297.9400
FAX: 313.297.5860
WWW.CIDETROIT.MI.US

**SPECIAL DISCHARGE PERMIT
PERMIT NO.: DWSD-SD-0092165**

SECTION A: GENERAL INFORMATION

Site Information: GM/REALM-LIVONIA
12950 Eckles Road
Livonia, MI 48150

Consultant Information: Conestoga-Rovers & Associates
14496 Sheldon Road, Suite 200
Plymouth, MI 48170-6026
Mr. Chris Meincke
Tel: (734) 453-5123

The Detroit Water and Sewerage Department (DWSD) hereby authorizes General Motors to discharge remediated groundwater from the said site into the Detroit sewer system. The DWSD grants this permit in accordance with the company's application and in conformity with plans, specifications, and other substantial data submitted to the DWSD.

All parameters listed in the permit must be analyzed. If there is a need to extend the permit, the company must submit a written request for an extension to the DWSD at least ninety (90) days before the permit's expiration date.

Effective Date: August 31, 2007

Expiration Date: August 30, 2009

Issued by:

Authorized by:



Jayakumar Pallegar, P.E.
Sr. Assoc. Engineer



Jose Belen, P.E.
Chemical Engineer
Industrial Waste Control Division

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KYANNE M. KILPATRICK, MAYOR

Jun 19, 2009 22:04

SECTION B: DISCHARGE LIMITATIONS**1. Representative Sampling Location/Discharge Point:**

Sampling Location: At effluent sampling port, after final pH adjustment tank, T12

Discharge Point: MH located 42.5 feet N. of Amrhein Road and 715 feet E. of Eckles Road

The following parameters shall be analyzed and reported as per reporting requirements.

PARAMETER		Daily Max. (mg/l)	Self-Monitoring Required (Y/N)
Arsenic	As	1	No
Biochemical Oxygen Demand	BOD	7500	No
Cadmium	Cd	1	No
Chromium	Cr	2.77	Yes
Copper	Cu	2.5	No
Cyanide (Available)	AVCN	1	No
Fats, Oil or Grease	FOG	1500	Yes
Iron	Fe	1000	No
Lead	Pb	0.69	Yes
Mercury	Hg	0.0002	Yes
Nickel	Ni	3.98	Yes
Phosphorus	P	250	No
Silver	Ag	1	No
Total PCB	PCB	0.0002	Yes
Total Phenolic Compounds	PHENOL	1	No
Total Suspended Solids	TSS	7500	Yes
Zinc	Zn	2.61	Yes
Acidity/Alkalinity (pH)	pH	5.0 - 11.5 Units	Yes
Total Toxic Organics, (TTO) *			Yes

*A Minimum of one (1) sample per year shall be analyzed. The Toxic Organics are listed in Attachment A.

Limitations are based on grab samples. All parameters must be analyzed according to methods outlined by EPA in 40 CFR Part 136.

The toxic organics must be analyzed with detection limit range of 1-10 µg/l. The detection limit must be indicated in the wastewater analytical report. Matrix interference must be specified where applicable.

Jun 19, 2009 22:04

2. Permit Definition

The site is the former Delphi Chassis-Livonia Plant. The plant is demolished and there is no metal finishing categorical operations at the site. The site is being remediated and the only wastewater discharge from the site is treated groundwater and storm water collected in the pits on the east side of the treatment building.

3. Discharge Flow Rate

The maximum discharge rate from remediation site shall not exceed 100,000 gallons per day (batch discharge). The treatment system operates 24 hours per day, seven (7) days per week. Any plans to increase the flow rate must be approved in writing by the DWSD prior to implementation.

SECTION C: MONITORING REQUIREMENTS**1. Analytical Requirements**

The company shall monitor and analyze the discharge one (1) per month for all parameters.

2. The DWSD may collect independent samples for analysis, or may request "split" portion of the sample the company collected.

SECTION D: REPORTING REQUIREMENTS

1. a) The company shall submit the analytical data to the DWSD every six (6) months.
- b) In addition to the laboratory analysis, each report shall include the following information:
 - i) Reporting period, date of sampling, sampling location and total flow to date
 - ii) Certification that the analyzed discharge is, or is not in compliance with the permit discharge limits
 - iii) Copy of the maintenance logbook. (Refer to Section E, paragraph 8)
 - iv) Signature of the company's authorized representative

SECTION E: GENERAL CONDITIONS AND REQUIREMENTS

1. If the sampling performed indicates non-compliance of the permit limitations; the company must:
 - a) Cease the discharge to the Detroit sewer system,
 - b) Notify the Department within 24 hours of becoming aware of the violation, and
 - c) Arrange a meeting with the Industrial Waste Control Division to discuss corrective actions prior to resumption of discharge.
2. The company shall report all interruptions and shutdowns due to rainfall, mechanical breakdowns or other major causes within 24 hours of becoming aware of the event.

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3. The company must comply with the General and Specific Pollutant Prohibitions described in the City of Detroit Ordinance 08-05.
4. No other discharge beyond those described and authorized by this permit shall occur without written approval from the DWSD.
5. Non-compliance with any term or condition of this permit shall constitute a violation of the City of Detroit sewer use ordinance, and may result in immediate revocation of the permit and appropriate enforcement action.
6. The requirements and conditions established in this permit do not relieve the company of its obligation to comply with any applicable pretreatment regulations, standards, requirements, or laws that may become effective during the term of this permit.
7. The company shall take all necessary precautions to avoid the obstruction of the normal flow of traffic customary to the street(s).
8. The company must maintain a maintenance log. This log shall at least contain dated and timed records of all:
 - a) Inspection visits
 - b) Changes or replacements of the Activated Carbon Units
 - c) Samples taken
 - d) Breakdown of operations with:
 - i) Reason for breakdown
 - ii) Actions taken to prevent reoccurrence of breakdown
9. The company shall notify the DWSD in writing or by telephone at least twenty-four (24) hours prior to initial discharge.
10. The Turbidimeter in the treatment system shall be checked two (2) times per day to ensure it will function well during the hours when operators are not present at the site.
11. Any violations of the permit parameter limitations shall be subjected to a penalty of \$250.00 per violation per day.

Attachment A

Purgeable Compounds	Limit	Extractable Compounds	Limit
1,1,1-Trichloroethane	20 ppb	Benzo (k) Fluoranthene or (11,12-Benzofluoranthene)	20 ppb
1,1,2,2-Tetrachloroethane	20 ppb	Bis (2-Chloroethoxy) Methane	20 ppb
1,1,2-Trichloroethane	20 ppb	Bis (2-Chloroethyl) Ether	20 ppb
1,1-Dichloroethane	20 ppb	Bis (2-Chloroisopropyl) Ether	20 ppb
1,1-Dichloroethylene	20 ppb	Bis (2-Ethylhexyl) Phthalate	20 ppb
1,2-Dichlorobenzene	20 ppb	Butyl benzyl phthalate or (Benzyl butyl phthalate)	20 ppb
1,2-Dichloroethane	20 ppb	Chrysene	20 ppb
1,2-Dichloropropane	20 ppb	Dibenzo (a,h) Anthracene or (1,2,5,6-Dibenzanthracene)	20 ppb
1,2-Dichloropropylene or (1,2-Dichloropropene)	20 ppb	Diethyl Phthalate	20 ppb
1,2-Trans-Dichloroethylene or (Trans-1,2-Dichloroethene)	20 ppb	Dimethyl Phthalate	20 ppb
1,3-Dichlorobenzene	20 ppb	Di-N-Butyl Phthalate	20 ppb
1,4-Dichlorobenzene	20 ppb	Di-N-Octyl Phthalate	20 ppb
2-Chloroethylvinyl Ether	20 ppb	Fluorene	20 ppb
Acrolein	20 ppb	Hexachlorobenzene	20 ppb
Acrylonitrile	20 ppb	Hexachlorobutadiene	20 ppb
Benzene	20 ppb	Hexachlorocyclopentadiene	20 ppb
Bromoform (Tribromomethane)	20 ppb	Hexachloroethane	20 ppb
Carbon Tetrachloride or (Tetrachloromethane)	20 ppb	Indeno (1,2,3-cd) Pyrene or (2,3-o-Phenylene Pyrene)	20 ppb
Chlorobenzene	20 ppb	Isophorone	20 ppb
Chlorodibromomethane or (Dibromochloromethane)	20 ppb	Naphthalene	20 ppb
Chloroethane	20 ppb	Nitrobenzene	20 ppb
Chloroform or (Trichloromethane)	20 ppb	N-Nitrosodimethylamine	20 ppb
Dichlorobromomethane or (Bromodichloromethane)	20 ppb	N-Nitrosodi-N-Propylamine	20 ppb
Ethylbenzene	20 ppb	N-Nitrosodiphenylamine	20 ppb
Methyl Bromide or (Bromomethane)	20 ppb	p-Chloro-m-Cresol or (4-chloro-3-methyl phenol)	20 ppb
Methyl Chloride or (Chloromethane)	20 ppb	Pentachlorophenol	20 ppb
Methylene Chloride or (Dichloromethane)	20 ppb	Phenanthrene	20 ppb
Tetrachloroethylene or (Tetrachloroethene)	20 ppb	Phenol	20 ppb
Toluene	20 ppb	Pyrene	20 ppb
Trichloroethylene or (Trichloroethene)	20 ppb	Pesticides & PCB	
Vinyl Chloride or (Chloroethylene)	20 ppb	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	20 ppb
Xylene	20 ppb	4,4-DDD or (p,p-TDE)	20 ppb
Extractable Compounds		4,4-DDE or (p,p-DDX)	20 ppb
1,2,4-Trichlorobenzene	20 ppb	4,4-DDT	20 ppb
1,2-Diphenylhydrazine	20 ppb	Aldrin	20 ppb
2,4,6-Trichlorophenol	20 ppb	Alpha-BHC	20 ppb
2,4-Dichlorophenol	20 ppb	Alpha-Endosulfan or (Endosulfan I)	20 ppb
2,4-Dimethylphenol	20 ppb	Beta-BHC	20 ppb
2,4-Dinitrophenol	20 ppb	Beta-Endosulfan or (Endosulfan II)	20 ppb
2,4-Dinitrotoluene	20 ppb	Chlordane	20 ppb
2,6-Dinitrotoluene	20 ppb	Delta-BHC	20 ppb
2-Chloronaphthalene	20 ppb	Dieldrin	20 ppb
2-Chlorophenol	20 ppb	Endosulfan sulfate	20 ppb
2-Nitrophenol	20 ppb	Endrin	20 ppb
3,3-Dichlorobenzidine	20 ppb	Endrin Aldehyde	20 ppb
4,6-Dinitro-O-Cresol	20 ppb	Fluoranthene	20 ppb
4-Bromophenyl Phenyl Ether	20 ppb	Gamma-BHC	20 ppb
4-Chlorophenyl Phenyl Ether	20 ppb	Heptachlor	20 ppb
4-Nitrophenol	20 ppb	Heptachlor Epoxide or (BHC-Hexachlorocyclohexane)	20 ppb
Acenaphthene	20 ppb	Toxaphene	20 ppb
Acenaphthylene	20 ppb	PCB-1016 (Arochlor 1016)	0.5 ppb
Anthracene	20 ppb	PCB-1221 (Arochlor 1221)	0.5 ppb
Benzidine	20 ppb	PCB-1232 (Arochlor 1232)	0.5 ppb
Benzo (a) Anthracene or (1,2-Benzanthracene)	20 ppb	PCB-1242 (Arochlor 1242)	0.5 ppb
Benzo (a) Pyrene or (3,4-Benzopyrene)	20 ppb	PCB-1248 (Arochlor 1248)	0.5 ppb
Benzo (b) Fluoranthene or (3,4-Benzofluoranthene)	20 ppb	PCB-1254 (Arochlor 1254)	0.5 ppb
Benzo (ghi) Perylene or (1,12-Benzoperylene)	20 ppb	PCB-1260 (Arochlor 1260)	0.5 ppb

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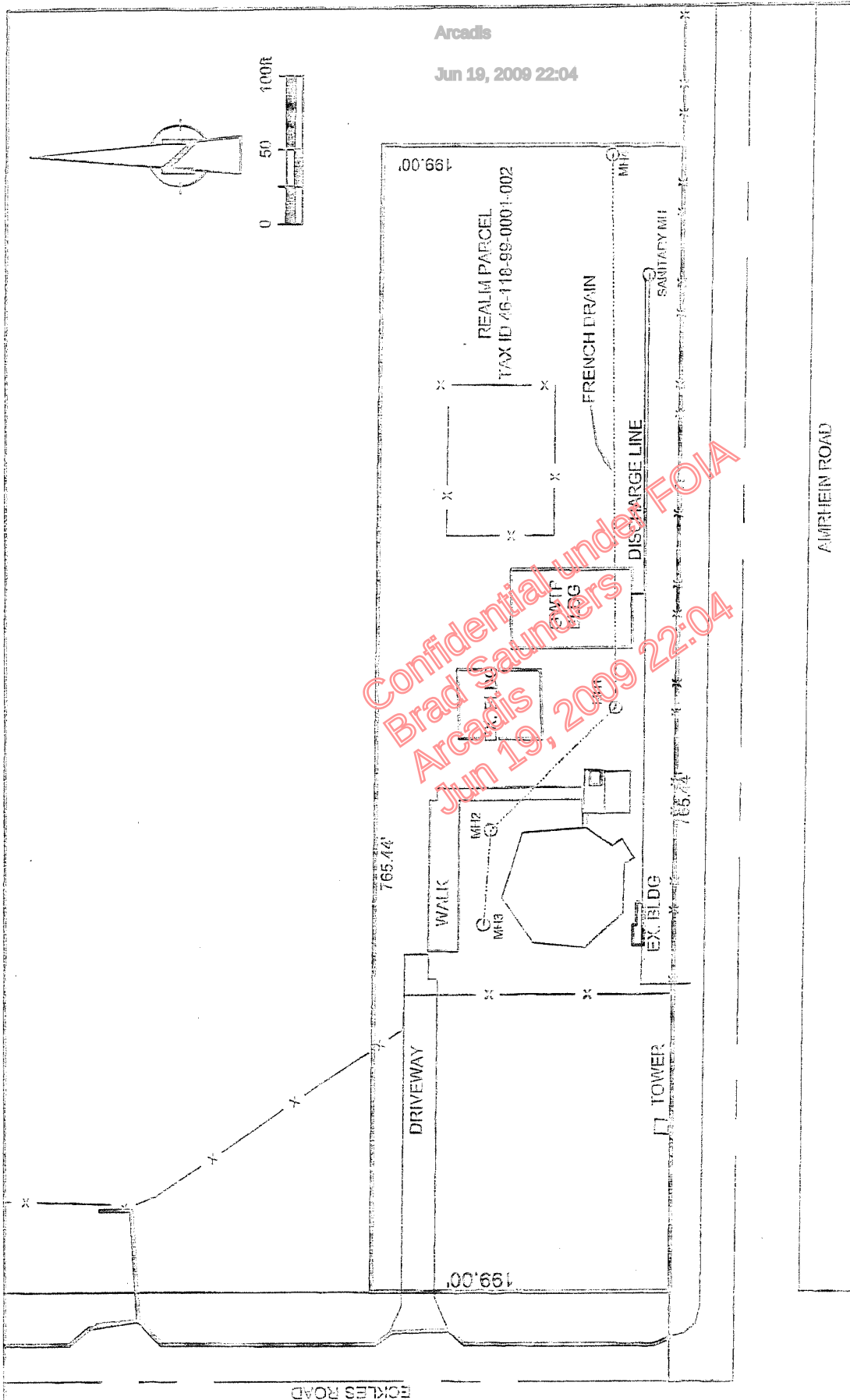


Figure 1

REALM SITE PLAN
1990 ECKLES ROAD
SANITARY MI

AMRHEIN ROAD

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APPENDIX C

DATA VALIDATION MEMORANDUM

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**CONESTOGA-ROVERS
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MEMORANDUM

TO: Chris Meincke REF. NO.: 12607

FROM: Cindy Zadorozny/tl/1/Det  DATE: November 14, 2008

RE: Data Quality Assessment and Validation – Full Validation SSOW: R007022
Groundwater Sampling – September 2008
13000 Eckles Road Site – Livonia, Michigan

The following details a quality assessment and validation of the analytical data resulting from the September 29, 2008 collection of 14 groundwater and three (3) quality control samples from the 13000 Eckles Road Site in Livonia, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at TestAmerica Laboratories, Inc. in North Canton, Ohio (TA-NC) in accordance with the methodologies presented in Table 2.

The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP). Application of quality assurance criteria was consistent with following guidance documents:

- i. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999; and
- ii. "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1994.

These guideline are referred to as "NFGs" in this Memorandum.

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The following elements are addressed in this memorandum with qualification if necessary in the identified tables:

	Data Review Element	Qualification Table
1	Sample Quantitation	NA
2	Sample Preservation and Holding Times	NA
3	Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) – Organic Analyses	NA
4	Initial Calibration – Organic Analyses	NA
5	Continuing Calibration – Organic Analyses	NA
6	Initial Calibration – Inorganic Analyses	NA
7	Continuing Calibration – Inorganic Analyses	NA
8	Method Blank Samples	NA
9	Laboratory Blank Samples – Inorganic Analyses	NA
10	Surrogate Compounds – Organic Analyses	NA
11	Matrix Spike/Matrix Spike Duplicate Analyses	NA
12	Laboratory Control Sample /Laboratory Control Duplicate Analyses	NA
13	Inductively Coupled Plasma (ICP) Interference Check Sample Analyses – Inorganic Analyses	NA
14	Internal Standard Summaries – Organic Analyses	NA
15	Serial Dilution – Inorganic Analyses	NA
16	Target Compound Identification	NA
17	Target Compound Quantitation	NA
18	Field Quality Assurance/Quality Control	NA
19	System Performance	NA

Sample Quantitation

The laboratory reported detected concentrations of Nickel below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "B". These concentrations should be qualified as estimated (J) values unless qualified otherwise in this memorandum. The laboratory "B" flags may be disregarded.

Sample Preservation and Holding Times

Sample holding time periods and preservation requirements are presented in Table 2. The samples were prepared and/or analyzed within the specified holding time periods. The samples were shipped and maintained in accordance with the sample preservation requirements.

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Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) – Organic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each GC/MS instrument used for volatile organic compounds (VOC) analyses was checked at the beginning of each 12-hour period using bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the NFGs before initiating an analysis sequence.

Instrument performance check data were reviewed. These tuning compounds were analyzed at the required frequency throughout the VOC analyses. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

Initial Calibration – Organic Analyses

Initial calibration data are used to demonstrate that each instrument is capable of generating acceptable quantitative data. A minimum of a five point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each over a specific concentration range.

Initial calibration criteria for organic analyses are evaluated against the following criteria:

- i. GC/MS (all compounds) – must meet a minimum mean relative response factor (RRF) of 0.05 ;
- ii. GC/MS (all compounds) – the percent relative standard deviation (RSD) values must not exceed 30.0 percent or a minimum coefficient of determination of 0.99 if quadratic equation calibration curves are used.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument linearity and sensitivity.

Continuing Calibration – Organic Analyses

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, continuing calibration standards must be analyzed every 12 hours for GC/MS analyses. The following criteria are employed to evaluate the continuing calibration data:

- i. GC/MS (all compounds) – must meet a minimum mean RRF of 0.05;
- ii. GC/MS (all compounds) – the percent difference between the mean initial calibration RRF and the continuing calibration RRF must not exceed 25 percent; and
- iii. GC/MS (compounds determined by quadratic curve) – the percent drift between the true value and the continuing calibration value must not exceed 25 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity of response.

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Initial Calibration – Inorganic Analyses

The initial calibration for inductively coupled plasma (ICP) includes a blank and at least one standard to establish the analytical curve. Hexavalent chromium analysis requires the analysis of a calibration blank and a minimum of five standards to establish the calibration curve. The coefficient of variation for calibration curves must exceed 0.995.

Initial calibration is verified with an initial calibration verification (ICV) standard which must recover within 90 to 110 percent for each metal analyses.

A review of the laboratory data showed that the inorganic initial calibration curves and ICVs were analyzed at the appropriate frequency and were within the acceptance criteria.

Continuing Calibration – Inorganic Analyses

Continuing calibration verification (CCV) standards are analyzed at method specified frequency (one every 10 samples). The CCVs must meet the percent recovery control limits specified above for the ICVs. Criteria for inorganic analyses are the same criteria as used for assessing the initial calibration data.

A review of the laboratory data showed that CCVs were analyzed at the appropriate frequency and the data were within the acceptance criteria.

Method Blank Samples

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

The method blank samples were reported to be free from detectable levels of target analytes, indicating no laboratory-attributable contamination occurred.

Laboratory Blank Samples – Inorganic Analyses

Metals analyses include the analysis of initial calibration blanks (ICB) and continuing calibration blanks (CCB) to assess the presence and the magnitude of sample contamination introduced during sample analysis. The CCBs are analyzed at a minimum frequency of one every 10 samples and target analytes should be non-detect.

The ICB and CCBs were reported to be free from detectable levels of target analytes, indicating no laboratory-attributable contamination occurred.

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Surrogate Compounds – Organic Analyses

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. Surrogate percent recoveries are reviewed against the laboratory developed control limits provided in the analytical report.

Surrogate recoveries could not be measured or evaluated in a sample due to the dilution required to successfully analyze the sample. No qualification of this sample was required. The surrogate recovery acceptance criteria were met for all samples that could be evaluated.

Matrix Spike/Matrix Spike Duplicate Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory. The inorganic control limits are defined by the methods and the NFG, which require recoveries between 75 to 125 percent with RPDs less than 20 percent for water samples. The samples selected for MS/MSD analysis are identified in Table 1.

The MS/MSD percent recoveries and associated RPD acceptance criteria were met or did not warrant qualification for each analysis performed.

Laboratory Control Sample/Laboratory Control Duplicate Analyses

The laboratory control sample and laboratory control duplicate (LCS/LCD) analyses serve as a monitor of the overall performance in all steps of the sample analysis and are analyzed with each sample batch. The LCS/LCD percent recoveries were evaluated against method and laboratory established control limits.

The LCS/LCD percent recoveries were within the laboratory control limits or did not warrant qualification, indicating that an acceptable level of overall performance was achieved.

Laboratory precision was verified by the RPD of the LCS/LCD when a matrix spike/matrix spike duplicate was not analyzed.

The RPDs were within the laboratory control limits or did not warrant qualification, indicating that an acceptable level of overall laboratory precision was achieved.

Internal Standard Summaries – Organic Analyses

To correct for variability in the GC/MS response and sensitivity, internal standard (IS) compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for VOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

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Internal Standard Summaries – Organic Analyses (continued)

- i. IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated continuing calibration standard IS area counts; and
- ii. the RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard.

A review of the VOC internal standard data showed that the IS area counts and retention time data were within the acceptance criteria.

Inductively Coupled Plasma (ICP) Interference Check Sample Analysis – Inorganic Analyses

To verify that proper inter-element and background correction factors had been established by the laboratory for metals analyses, the ICP interference check samples (ICS) are analyzed. The ICSs are evaluated against recovery control limits of 80 to 120 percent.

The ICS analysis results were evaluated for all samples and were within the control limits.

Serial Dilution – Inorganic Analyses

The percent difference (D) between a serial dilution of a sample for each matrix was monitored to determine physical or chemical interference. A minimum of one sample per 20 investigative samples is analyzed at a five-fold dilution. The serial dilution results must agree within 10 percent D of the original results for samples with detected concentrations greater than 50 times the instrument detection limit.

Serial dilution analysis was not performed on a site-specific sample; therefore, review of this parameter was not required.

Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

Target Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. The samples identified in Table 1 were reviewed. No discrepancies were found between the raw data and the sample results reported by the laboratory.

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Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of two (2) field duplicate sample sets and one (1) trip blank sample.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five (5) times the RL, the evaluation criteria is one (1) times the RL value for water samples.

Table 3 presents the RPDs of detected analytes in duplicate sample sets with qualifiers if applicable. The data indicates that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples.

No target analytes were reported as detected in the trip blank sample.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. The samples identified in Table 1 were reviewed. No technical problems or chromatographic anomalies were observed which would require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Sample Identification	Location	Matrix	QC Samples	Collection Date (mm/dd/yyyy)	TCL VOC	Metals (Cr)	Metals (Ni)	Hexavalent Chromium	Trivalent Chromium
CRA SDG No. 22-1 ⁽¹⁾									
TA-NC Lot No. A81300131									
GW-12607-092908-JY-001	OW-24	water	MS/MSD (1)	9/29/2008		X	X	X	X
GW-12607-092908-JY-002	HA-14S	water		9/29/2008		X	X	X	X
GW-12607-092908-EV-003	MW-217S	water	MS/MSD	9/29/2008	X				
GW-12607-092908-EV-004	MW-211S	water		9/29/2008	X				
GW-12607-092908-JY-005	HA-14S	water	Duplicate (002)	9/29/2008		X	X	X	X
GW-12607-092908-JY-006	MW-103S	water	Duplicate (004)	9/29/2008	X				
GW-12607-092908-EV-007	MW-211S	water		9/29/2008	X				
GW-12607-092908-EV-008	MW-213S	water		9/29/2008	X				
GW-12607-092908-EM-009	MW-202S	water		9/29/2008	X				
GW-12607-092908-JY-010	HA-16S	water		9/29/2008			X		
GW-12607-092908-EV-011	MW-215S	water		9/29/2008	X				
GW-12607-092908-EV-012	MW-216S	water		9/29/2008	X				
GW-12607-092908-EM-013	MW-OS-7D	water		9/29/2008					
GW-12607-092908-EM-014	MW-OS-6D	water		9/29/2008			X		
GW-12607-092908-EM-015	MW-OS-8D	water		9/29/2008			X	X	
GW-12607-092908-EM-016	MW-OS-5D	water		9/29/2008			X		
TB-12607-092908-EM-017	---	water	Trip Blank	9/29/2008	X				

Notes:

- QC - Quality Control
- TCL - Target Compound List
- VOC - Volatile Organic Compounds
- Ni - Nickel
- Cr - Chromium
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- MS/MSD (1) - Matrix Spike / Matrix Spike Duplicate analyzed for all parameters except Trivalent Chromium
- (1) - Additional review per Tier 3 requirements

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TABLE 2

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

<i>Parameter</i>	<i>Method</i>	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i>
TCL VOC	SW-846 8260B	Water	- 14 days from sample collection to completion of analysis	pH < 2 and Iced, 4 ± 2° C
Metals				
Chromium	SW-846 6010B	Water	- 180 days from sample collection to completion of analysis	pH < 2 and Iced, 4 ± 2° C
Nickel	SW-846 6010B	Water	- 180 days from sample collection to completion of analysis	pH < 2 and Iced, 4 ± 2° C
General Chemistry				
Hexavalent Chromium	SW-846 7196	Water	- 24 hours from sample collection to completion of analysis	Iced, 4 ± 2° C
Trivalent Chromium	SW-846 7196 (calculation)	Water	- N/A	

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TABLE 3
SUMMARY OF QUALIFIED SAMPLE DATA DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

Parameter	Analyte	Original Sample ID		Duplicate Sample ID		Diff.	RPD	Units	Qualifier
		Result	RL	5 x RL	Result	RL	5 x RL		
TCL VOC	1,1,1-Trichloroethane	GW-12607-092908-EV-004	7.3	1.0	5.0	GW-12607-092908-EV-007	7.3	1.0	5.0
									0
Metals	Nickel	GW-12607-092908-JY-002	17.0	0.025	0.125	GW-12607-092908-JY-005	17.7	0.025	0.125
									4.0
									mg/L
									None

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Notes:

RL - Reporting Limit
Diff. - The absolute difference between the concentrations of the Original Sample Result and the Duplicate Sample Results
RPD - Relative Percent Difference
TCL - Target Compound List
VOC - Volatile Organic Compounds
NA - Not applicable

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APPENDIX D

AOI 39 SOIL DUST CONTROL PLAN

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January 25, 2007

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**AOI 39 Soil Dust Control Plan
Former General Motors Delphi Chassis Systems Plant
13000 Eckles Road
Livonia, Michigan
USEPA No. MID005356621**

INTRODUCTION

This Dust Control Plan (Plan) sets forth requirements for institutional and engineering controls to be implemented in Area Of Interest (AOI) 39 – North Boundary Area under an Administrative Order on Consent (Consent Order), signed by General Motors Corporation (“GM”) and United States Environmental Protection Agency (“USEPA”). This Plan is part of the final corrective measures per the Consent Order under the Resource Conservation and Recovery Act (“RCRA”) by GM at its Former Delphi Chassis Systems Plant (Property).

On June 27, 2005, GM submitted to USEPA a Revised RCRA Corrective Measures Proposal (“CMP”) that proposed final corrective measures for the Property. The June 27, 2005, CMP described and documented the investigations, corrective action activities, and proposed controls for contamination remaining at the Property. USEPA reviewed GM’s CMP, inspected the Property, and issued a RCRA Final Decision and Response to Comments dated March 13, 2006, determining that the proposed corrective measures at the Property are approved as long as an enforceable mechanism is in place to ensure that the controls proposed by GM are implemented and remain in place. The Restrictive Covenant and the Administrative Order on Consent are collectively the mechanism to ensure controls remain in place.

This Plan addresses activities required to ensure the continued effectiveness of corrective measures in AOI 39.

OBJECTIVES

The objective of establishing this Plan is to ensure that control of dust generated during activities in AOI 39 (such as vehicular traffic, site redevelopment, or other excavation activities) is conducted in a way that is protective of human health and the environment as well as being in compliance with applicable laws. The Plan is specifically applicable to AOI 39 – Northern Boundary of the Site identified in the RCRA Facility Investigation (RFI), which requires engineering and institutional controls as described in the RCRA Final Decision and shown on Plan 1.

This plan does not supersede Federal, State or Local laws regarding the excavation, movement, or grading of soil, or the national ambient air quality standards (NAAQS) for respirable particulate matter (PM₁₀), but rather presents additional considerations that need to be taken into account during activities that disturb the soil in AOI 39. It is expected that qualified and trained individuals will implement this Plan.

January 25, 2007

CONTROLS

Jun 19, 2009 22:04

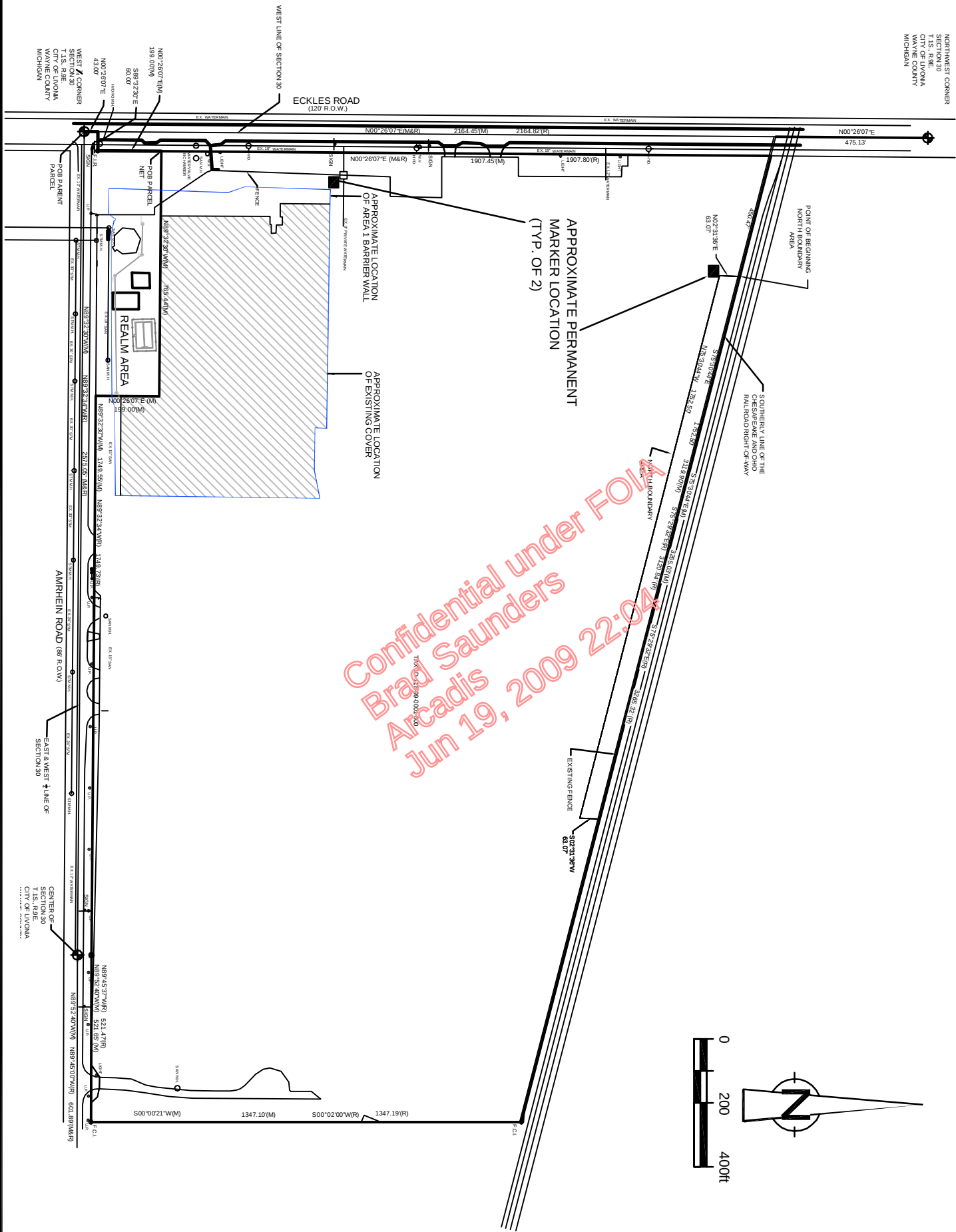
Institutional Control

AOI 39 is subject to the same Restrictive Covenant that applies to the rest of the Property. A Restrictive Covenant will be recorded with the Wayne County Register of Deeds to: 1) prohibit groundwater use on the Property for any purpose; 2) restrict the uses of the Property for any purpose other than those characterized by the Michigan Department of Environmental Quality ("MDEQ") as Limited Commercial II, Limited Commercial III, Limited Commercial IV and Limited Industrial, unless otherwise agreed to by GM and USEPA; 3) maintain the barrier wall and cover located in the area of the Property as generally shown on Exhibit 3 of the restrictive covenant; and 4) control particulate emissions from surface soil on certain areas of the Property so that there are no unacceptable inhalation risks.

Engineering Control

Manganese has been identified at AOI 39 – North Boundary Area at concentrations greater than Michigan Department of Environmental Quality (MDEQ) generic industrial particulate soil inhalation criteria (PSIC). As discussed in the Supplement to the RFI Report (Section 5.3.4), activities that generate airborne dust at AOI 39 (such as vehicular traffic, site redevelopment activities, or other construction activities) should include the use of appropriate engineering controls to limit generation and off-site transport of airborne manganese and dust, and the use of proper personal protective equipment to protect workers to prevent any unacceptable exposures. Based on the RFI baseline risk assessment presented in the Supplement to the RFI Report, dust generating activities at AOI 39 that last longer than 5 consecutive days warrant engineering controls beyond those otherwise necessary for compliance with the NAAQS for PM₁₀ (which are 150 µg/m³ as a 24-hr average and 50 µg/m³ as an annual average).

Mechanisms for controlling manganese particulate emissions from AOI 39 could include wetting of the soil, slowing the work, minimizing the disturbed area, covering with a temporary tarp or liner, covering with clean gravel, pavement, or installing other improved surfaces. Additionally, performing work on days with little or no wind could reduce the potential for off-site exposure. For any dust generating activities in AOI 39 that last longer than 5 consecutive days, a written dust control plan must be submitted to USEPA by the current owner for review at least 21 days in advance of dust generating activities and be approved by USEPA before the dust generating activities begin. The dust control plan must describe the nature and duration of the dust generating activities and the specific details of the measures that will be implemented to monitor and control manganese particulate emissions during the activities.



WEST ¼ CORNER
SECTION 30
T.1S., R.9E.
CITY OF LIVONIA
WAYNE COUNTY
MICHIGAN



**CONESTOGA-ROVERS
& ASSOCIATES**

TITLE
PLAN 1
CORRECTIVE ACTION COMPONENTS
RESTRICTIVE COVENANT
LIVONIA, MICHIGAN

DRAWN S.S.

APPROVED C.M.

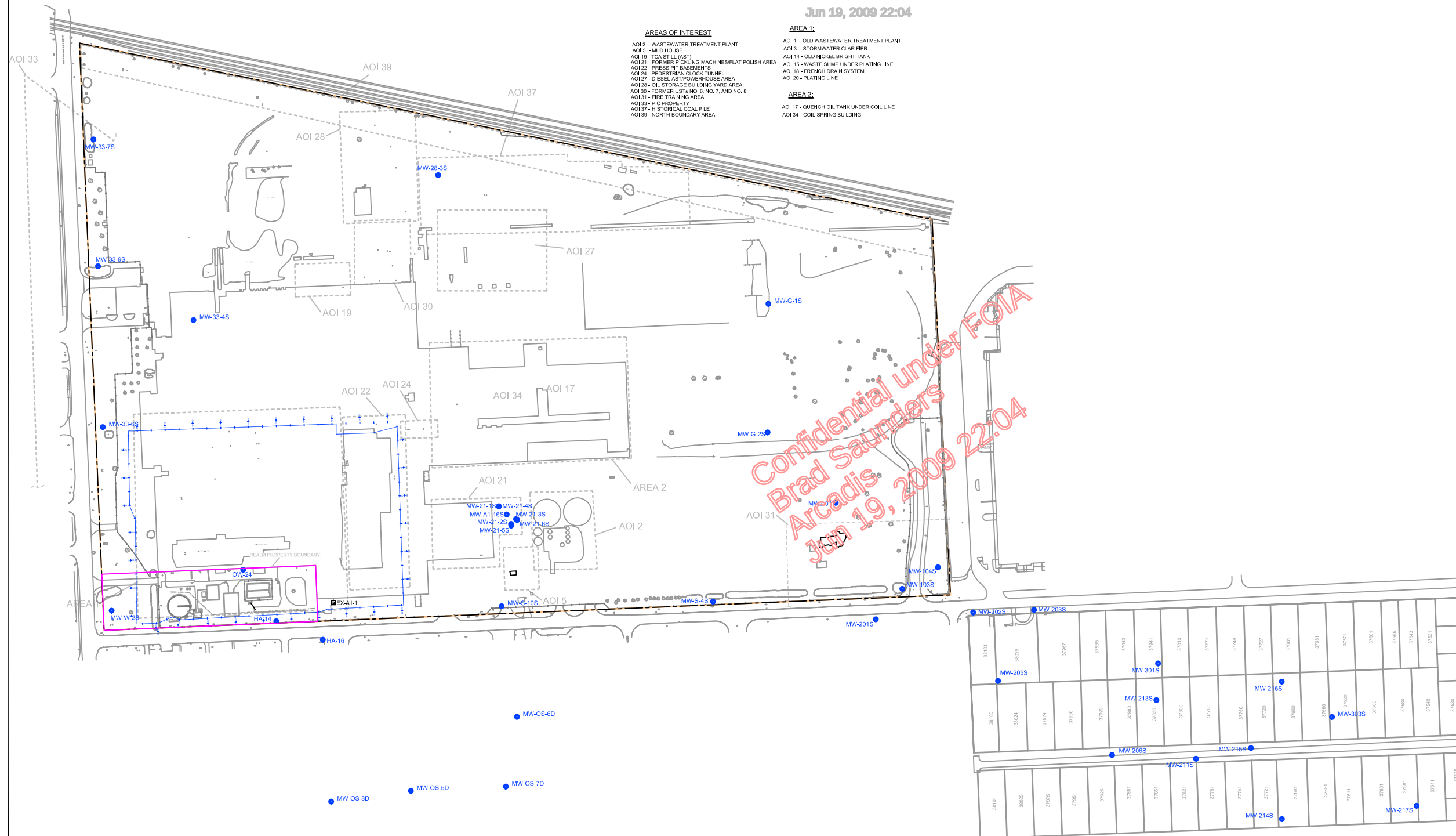
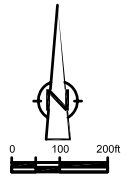
PROJECT No. 12607-40

SCALE 1"=400'

DATE 01/29/07

DRAWING NUMBER SHEET 1 OF 1

Jun 19, 2009 22:04

[illegible]

LEGEND

- SITE BOUNDARY
 FENCE
 MW-104S GMP MONITORING WELL
 EX-A1-1 AREA 1 EXTRACTION WELL

SCALE VERIFICATION

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



Approved

DRAWING STATUS

[illegible]

MONITORING WELL LOCATIONS

ANNUAL REPORT

13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN



CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager: C.M.	Reviewed By: K.A.	Date: FEBRUARY 27, 2009	
Scale: 1"=200'	Project №: 012607-74	Report №: 060	Drawing №: PLAN 1

Arcadis

Jun 19, 2009 22:04