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Revitalizing Auto Communities Environmental Response (RACER) Trust

Resource Conservation and Recovery Act Facility Investigation (RFI) Work Plan

Lansing Plants 2, 3, and 6 Industrial Land

Lansing, Michigan

August 26, 2011

ARCADIS

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Resource Conservation and Recovery Act Facility Investigation Work Plan

Lansing Plants 2, 3, and 6
Industrial Land
Lansing, Michigan

Prepared for:
Revitalizing Auto Communities Environmental Response (RACER) Trust

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Acronyms and Abbreviations

AOC	Area of Concern
AOI	Area of Interest
APCS	Air Pollution Control Systems
AST	Aboveground Storage Tank
CCR	Current Conditions Report
COC	chain of custody
CQAP	Construction Quality Assurance Plan
Cy	cubic yards
DWC	Drinking Water Criteria
DWP	Drinking Water Protection
FSP	Field Sampling Plan
ft	feet
GIS	Geographic Information System
GMC	General Motors Corporation
GSIP	Groundwater Surface Water Interface Protection
HASP	Health and Safety Plan
IDW	investigation-derived wastes
LCA	Lansing Car Assembly
l	liters

LNAPL	Light Non-Aqueous Phase Liquids
l/min	liters per minute
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
MLC	Motors Liquidation Company
MS	Matrix Spike
MSD	Matrix Spike Duplicate
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PCB	polychlorinated biphenyl
PID	Photo Ionization Detector
PPE	personal protective equipment
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RACER	Revitalizing Auto Communities Environmental Response
RCRA	Resource, Conservation, and Recovery Act
RI	Remedial Investigation
RFI	RCRA Facility Investigation

RRD	Remediation and Redevelopment Division
S3TM	Sampling Strategies and Statistics Training Manuel
SDBL	Statewide Default Background Levels
SOP	Standard Operating Procedure
SOW	Scope of Work
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	volatile organic compound
VSI	Visual Site Inspection
WWTP	Waste Water Treatment Plant
WWTS	Waste Water Treatment System

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1. Introduction

This Resource Conservation Recovery Act (RCRA) Facility Investigation (RFI) Work Plan has been prepared on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust. The RFI Work Plan is part of the corrective action program being implemented at the Lansing Plants 2, 3, and 6, Industrial Land.

On June 1, 2009, General Motors Corporation (GMC) filed for Chapter 11 protection under U.S. bankruptcy code. On July 10, 2009 GMC was renamed Motors Liquidation Company (MLC) and on the same day some of the operating assets of GMC were sold to a newly formed company "General Motors Company". General Motors Company changed its name to General Motors LLC (GM LLC) on October 16, 2009. Assets not sold to GM LLC remained the property of the MLC, in its capacity as debtor-in-possession in the bankruptcy case. On March 31, 2011 the environmental remediation of the property was transferred from MLC to the RACER Trust. Ownership of the properties was transferred to RACER Properties LLC, a wholly owned subsidiary of RACER Trust.

This Work Plan for the RACER Trust Lansing Plants 2, 3 and 6, Industrial Land (herein referred to as the Site), has been prepared for review and approval by the Michigan Department of Environmental Quality (MDEQ).

1.1 Site Description

Plants 2, 3, and 6 are located at 2801 West Saginaw Street, 2800 West Saginaw Street, and 401 North Verlinden Street, respectively, in Lansing, Michigan. Plant 2 encompasses approximately 63 acres of land, Plant 3 encompasses approximately 104 acres of land, and Plant 6 encompasses approximately 72 acres of land. The locations of Plants 2, 3, and 6 are shown on Figure 1.The buildings comprising Plant 2 were constructed between 1900 and 1910. Past facility operations have included automobile parts manufacturing, foundry operations, and welding operations. Most recently, Plant 2 assembled the Chevrolet SSR. With the exception of the wastewater treatment plant (WWTP), Plant 2 ceased operations on March 17, 2006 and decommissioning activities began in 2007. A Site layout map for Plant 2 is shown on Figure 2.

The buildings comprising Plant 3 were constructed in the 1930s. Past facility operations at Plant 3 have included stamping and electroplating bumpers, general machining of crankshafts and connecting rods, and machining, welding, and stamping

of automobile parts. In May 1987, electroplating operations at Plant 3 ceased, and decommissioning activities began July 2007. A building layout map for Plant 3 is shown on Figure 3.

Plant 6 has been used to manufacture automobiles and automobile parts since 1921. The plant previously manufactured the bodies for the Pontiac Grand Am and Chevrolet Classic, and is currently considered part of Lansing Car Assembly (LCA). Plant 6 decommissioning activities began in July 2007. A building layout map for Plant 6 is shown on Figure 4.

For additional descriptions of previous Site operations, refer to the *Current Conditions Report* [CCR] (ARCADIS, 2008).

1.2 Work Plan Approach and Objectives

Due to the limited amount of available soil and groundwater data on Site, the investigation will be performed in two or more phases to fill the data gaps in order to efficiently define the nature and extent of contamination on and in the vicinity of the Site. This Work Plan has been prepared to present the initial investigation plan for the Site. The sampling locations proposed in this Work Plan are designed to investigate the impact of contamination from previously identified Site releases, so that appropriate response activities can be implemented. These response activities could include risk-based closure (deed restrictions, engineering controls) and monitoring, active soil and/or groundwater remediation, or a combination of these responses.

The initial phase of investigation (Phase I) will include completion of soil borings within the Areas Of Interest (AOIs) and monitoring wells installed in the first saturated zone at the perimeter of Plant 2. This RFI Work Plan is intended to be used in conjunction with the Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP) prepared and submitted under a separate cover.

A second phase of investigation will be performed based upon the results of Phase I. For Phase II and any subsequent phases, it is the intent of ARCADIS to use the associated FSP and QAPP for future investigation phases but to supplement this work plan as necessary with a sampling and analysis matrix to identify additional investigation locations.

1.3 Work Plan Schedule

The following schedule covers the period from July 2011 through December 2011. Schedules covering future phases will be included as part of the quarterly progress reports.

Project Name	Days	Start	End	7/10	7/17	7/24	7/31	8/7	8/14	8/21	8/28	9/4	9/11	9/18	9/25	10/2	10/9	10/16	10/23	10/30	11/6	11/13	11/20	11/27	12/4	12/11	12/18
RACER Trust Lansing Plants 2, 3 & 6	**150**	**7/18/11**	**12/15/11**																								
Task Item																											
Phase I Soil Borings	65	7/18/11	9/21/11																								
Soil Boring Data Analysis and Validation	65	8/1/11	10/5/11																								
Phase I Survey, Gauge and Groundwater Sample Collection	30	9/26/11	10/26/11																								
Groundwater Monitoring Data Analysis and Validation	30	10/10/11	11/9/11																								
Data Evaluation and Phase II Planning	45	11/2/11	12/17/11																								
Quarterly Progress Report	7	10/10/11	10/17/11																								
Phase II Scope/Matrix Update to MDEQ	7	12/17/11	12/24/11																								

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2. Areas of Interest for Further Action

On August 1, 2008 ARCADIS submitted a *Current Conditions Report* (CCR) describing the current conditions and historical waste management practices at the Lansing Plants 2, 3 and 6 in Lansing, Michigan. The CCR identified the AOIs for the RCRA Corrective Action at the Site that included areas identified during prior investigations as Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), as well as additional areas identified by GMC.

The CCR identified the following number of AOIs for further action of each plant:

- 5 AOIs were identified at Plant 2.
- 5 AOIs were identified at Plant 3.
- 18 AOIs were identified by at Plant 6.

On August 7, 2008, GMC submitted a draft Remedial Investigation (RI)/RCRA Facility Investigation (RFI) Activities Matrices (Matrices) that would become the outline of the RI/RFI Work Plan (Work Plan). Following review and MDEQ comments a February 2009 Draft Work Plan Matrix was submitted. Based on the previous submittals and an August 2010 meeting in Lansing between MLC and MDEQ staff, the Project Team evaluated the pre-RFI data further by re-screening the metals data against criteria including earth metals, re-calculating Ambient Air Soil Inhalation Criteria factoring in site size, and performing preliminary human health risk assessment calculations. The evaluation found that additional samples were warranted to support the corrective action assessment. Therefore, the Matrices and associated figures were updated to add additional analytical results and AOIs. In addition to the re-evaluation of the Pre-RFI data, further assessments were completed of the Miscellaneous Items listed in the CCR. The assessment consisted of review of demolition inspection notes, photo logs, and communications with demolition oversight contractors. This was completed to make determinations whether further action was needed at some locations.

In March 2011, on behalf of MLC (now RACER), ARCADIS submitted updated draft Matrices and associated figures to the MDEQ. The Miscellaneous Items Table was provided with rationale for No Further Action or rationale for adding to the AOI List for further action. A Hydrogeologic Table was added to; provide a summary of the monitoring well network condition, list hydrogeologic information previously collected, and to detail the planned hydrogeological data to be collected.

The MDEQ responded to the March 2011 RFI Matrices in writing on May 18, 2011. On June 8, 2011, a joint working session was held with ARCADIS, RACER and MDEQ Staff. The purpose of the working session was to discuss the March 2011 RFI Matrix and MDEQ comments. On June 22, 2011 updated RFI Matrices and associated figures were submitted to the MDEQ. This revised RFI Matrix was prepared based on the working session, a Site Walk with MDEQ on June 1, 2011 (Site Walk) and a follow up e-mail from Joe Rogers of MDEQ dated June 9, 2011. MDEQ subsequently approved the June 22, 201 updated RFI Matrix in a letter dated July 8, 2011.

2.1 Plant 2 Further Actions

This section describes and summarizes the 25 AOIs identified for further action at the Plant 2 Site based on the approved RFI Matrix (ARCADIS, June 2011). These AOIs are summarized in Table 1 and are shown on Figure 2.

2.1.1 AOI 2-1 SWMU 1 Wastewater Treatment System (WWTS)

AOI 2-1 is located south of Building 204 and consists of 15 steel process tanks that were used to treat up to 1.75 million gallons per day of wastewater containing ELPO paint, oil, suspended solids, and heavy metals. The tanks range in capacity from 1,000 gallons to 1.75 million gallons. Two 75-foot-diameter clarifiers and three 1.75-million-gallon wastewater holding tanks are located outside, while the remaining 10 tanks, associated pumps, and equipment are located inside. The unit began operations in late 1986. This AOI is estimated to be at grade level.

AOI 2-1 treated wastewater generated from Plant 6 automobile assembly and painting operations. From 1987 to 1990, wastewater generated from Plant 2 painting operations and floor drains was also treated. Sludge generated from treatment operations contained trace amounts of lead, zinc, copper, and nickel, but is excluded from being a hazardous waste (40 CFR, Part 261, Subpart E, Appendix IX). At the time of the ARCADIS Plant 2 walk-through (June 2006) the WWTS was processing a minimal quantity of waste generated by the maintenance personnel as the building was being vacated.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 2-1 ceased operations early in 2007. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of

any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions three soil borings will be advanced for TAL Metals.

2.1.2 AOI 2-6 SWMU 6 – Former Plant 2 Oily Waste Treatment System

AOI 2-6 was located in Building 244 and consisted of three rectangular, 10,000-gallon, concrete tanks; two dissolved air flotation treatment tanks; two gravity separators; treatment chemical storage tanks; and various pumps and valves. Portions of the unit are below grade in a basement. The unit began operations in 1953 and ceased before 1990. This AOI is estimated to be less than 15 ft deep.

Wastes managed at this unit included used insoluble oil and oily wastewater generated from automobile manufacturing operations in Plant 2. Separated used oil, which was considered to be hazardous waste because of its chromium and lead content, was accumulated in a collection pit that was part of the unit. The used oil was then pumped into a tanker truck for off-site disposal or reclamation. The unit has been inactive since 1990.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found. PRC observed no visible evidence of a release at the time of the visual site investigation VSI (1994).

AOI 2-6 has been inactive since 1990. Based on the nature of the operations at this AOI, the construction and waste management practices employed, the visual inspection performed during the VSI, and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions two soil borings will be advanced for TCL SVOCs and TAL Metals.

2.1.3 AOI 2-7 SWMU 7 – Building 242 Former Drum Storage Area

AOI 2-7 was initially identified on the Plant 2 Part A permit application in 1980; however, subsequent documents do not mention this unit. Based upon a review of historical drawings, a 20-ft by 30-ft by 10-ft roofed concrete pit located north of Building 242 was identified and is believed to be the former DSA. According to the Lansing

Plant 2 and 3 USEPA Preliminary Assessment and Visual Site Investigation (PA/VSI) (PRC, 1994), the unit began operations before 1980 and ceased in 1986.

During the PRC Plant 2 walk-through plant personnel were interviewed and indicated that wastes managed at AOI 2-7 included drummed paint waste, spent solvents, and used oil generated from maintenance activities at Plant 2. Site representatives indicated that the storage of hazardous wastes in this unit ceased in 1982 or 1983 and that the unit was used until 1986 to store capacitors, light ballasts, and oil that was contaminated with polychlorinated biphenols (PCBs). All waste operations ceased at the unit in 1985 or 1986, at which point it was backfilled with sand and covered with a concrete and wood-block floor.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 2-7 has been covered with a concrete and wood-block floor. Based on the nature of the operations at this AOI which utilized a secondary containment area where fluids were not normally present, and the waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.1.4 AOI 2-8 SWMU 8 – Former Outdoor Storage Area

AOI 2-8 was initially identified on the Plant 2 Part A permit application in 1980; however, subsequent documents do not mention this unit. The unit was a 10-ft by 10-ft concrete paved area located northwest of Building 241. No secondary containment existed at the unit, and two drains existed near the unit that drained to the Plant 3 Clarifier. The unit began operations before 1980 and ceased in 1982.

Specific wastes managed by AOI 2-8 are unknown. The Lansing Plant 2 and 3 *USEPA PA/VSI* (PRC, 1994) indicated that wastes managed were likely to include: drummed waste paint, spent solvents, and used oils generated from rear axle production in Plant 2.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

Operations ceased at AOI 2-8 in 1982. Fluids were not normally present on the pavement during operations at this AOI. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOC, TCL SVOCs, TAL Metals and PCBs.

2.1.5 AOI 2-11 SWMU 11 – Former Gondola Storage Areas

AOI 2-11 included two paved outdoor areas used to store 1 to 3 cubic yard steel gondolas that were used throughout Plant 2 to transport and store raw material, parts, and wastes. AOI 2-11 had an asphalt or concrete-paved base. AOI 2-11 began operations before 1980 and ceased in 1990.

Wastes managed at AOI 2-11 were limited to residual material in steel waste gondolas. Gondolas typically were used to manage a nonhazardous oil filter residue and air filter residue, which was a wet, oily sludge-like material consisting of dirt and grease from oil and air filters.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

Operations ceased at this unit in 1990. Fluids were not normally present on the asphalt or concrete during operations at this AOI. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI are warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL SVOCs, TAL Metals and PCBs.

2.1.6 AOI 2-12 SWMU 12 – Former Empty CSA

AOI 2-12 was located on an outdoor asphalt or concrete paved area southwest of Building 241. This AOI consisted of empty 55-gallon drums generated from Site operations. This AOI was located at grade level.

Wastes managed at AOI 2-12 included empty 55-gallon drums generated from Site operations. When a sufficient number of drums accumulated (between 20 and 300),

they were taken to an offsite re-conditioner and recycler. AOI 2-12 began operations before 1980 and ceased operations in 1990. Fluids were not normally present on the concrete during operations at this AOI.

No investigations or remedial action has been conducted at this AOI and none appear to be warranted. No releases to the environment from these units have been documented. PRC observed no visible evidence of a release at the time of the VSI (1994). In addition, this AOI managed empty drums and was located on asphalt or concrete pavement. Therefore, a release to the environment would not have been likely to occur.

Operations at AOI 2-12 ceased in 2006. Based on the nature of the operations at this AOI, the visual inspection conducted during the VSI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.1.7 AOI 2-14 SWMU 14 – Former Scrap Metal Storage Areas

AOI 2-14 consisted of two paved Plant 2 areas that were used to accumulate scrap metal. AOI 2-14 began operation before 1980 and ceased in 1990. This AOI is located at grade level.

Wastes managed at AOI 2-14 included nonhazardous scrap metal such as machining chips, turnings, trimmings, and scrap parts. Scrap metal was accumulated in these areas in gondolas, open-topped roll off boxes, concrete enclosures, or on the pavement. AOI 2-14 became inactive in 1990. AOI 2-14 was replaced by scrap part storage sometime after 1990.

During the removal of AOI 2-14, oil stained soil was excavated and disposed of offsite. Verification soil sampling was completed but the verification sampling report was not able to be obtained.

AOI 2-14 was replaced by scrap part storage sometime after 1990. A release at this AOI occurred, oil stained soil was excavated from this AOI and a verification sampling report is not available, further action at this AOI is anticipated. Actions planned are

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described in Table 1. Through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL SVOCs and TAL Metals..

2.1.8 AOI 2-15 AOC 1 – Building 225 UST Farm

AOI 2-15 consisted of eight 30,000-gallon USTs, which were removed in 1989. This AOI is estimated to be less than 15 ft deep.

The USTs located in the Building 225 Tank Farm Area held waste process oil, quench oil, cutting oil, and lubrication oil.

The USTs were removed from August through September 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Soil borings were advanced at and near the USTs and samples were collected and analyzed. Eight monitoring wells were installed and groundwater samples were collected and analyzed. Approximately 513 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Refer to the CCR for additional information.

In accordance with NREPA Part 213, an industrial Tier II closure report incorporating a restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996. The restrictive covenant was filed with the Ingham County Registrar of Deeds on August 11, 2003. Refer to the CCR for additional information.

The USTs in AOI-2-15 have been removed. A closure report was submitted to the MDEQ that relied on land and resource use restrictions documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described in the CCR. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions two new soil borings will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs. Two soil borings will also be advanced at previous boring locations (reoccupied) B-2 and B-7 and analyzed for TCL VOCs, TCL SVOCs, TAL Metals and PCBs. Maintaining the restrictive covenant will continue.

2.1.9 AOI 2-16 AOC 3 – Building 250 USTs

This unit consisted of two 20,000-gallon USTs that held gasoline and diesel fuel located East of Building 250, one 1,500 gallon UST that held used oil located Southeast of Building 250, and one 12,000 gallon UST that held heating oil located

West of Building 250. The USTs were removed in 1990 and 1991. This AOI is estimated to be less than 15 ft deep.

The Building 250 Tank Farm Area is located in vicinity of the Transportation Services Site at Plant 2. The unit was comprised of two buildings and one UST farm, primarily for vehicle refueling and maintenance. The UST farm contained four USTs that comprised this AOI were identified as Tanks 18, 19, 20, and an unregulated heating oil tank. The gasoline and diesel fuel tanks were the largest of the four USTs, with a capacity of 20,000 gallons each. The heating oil UST was removed in November 1990. The diesel fuel UST (1,500 gal.) was removed in October 1991. The used oil UST was removed in 1991. A confirmed release for the gasoline and diesel USTs was reported to the MDEQ in accordance with NREPA Part 213 on October 9, 1990.

Investigations and remedial actions were conducted at this AOI from 1990 to 1996. All four USTs were removed between November 1990 and the fall of 1991. Soil borings were advanced near the USTs and samples were collected and analyzed. Three monitoring wells were installed and groundwater samples were collected and analyzed. Approximately 980 cy of soil were removed from the vicinity of Tanks 18 and 19 and appropriately disposed off-site. Refer to the CCR for additional information.

An industrial Tier II closure report incorporating a draft restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996 by ESE. The final restrictive covenant was filed with the Ingham County Registrar of Deeds on August 11, 2003. Refer to the CCR for additional information.

The USTs in AOI 2-16 have been removed. A closure report was submitted to the MDEQ that relied on land and resource use restriction documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described in the CCR. Maintaining the restrictive covenant will continue. Although, the CCR had determined no further actions at this AOI were warranted, through MDEQ Matrix review and meeting discussions groundwater samples will be collected from existing well MW-2 for TCL VOCs, TCL SVOCs, lead and chromium (VI).

2.1.10 AOI 2-23 Acid House

AOI 2-23 consists of an acid house located west of Building 206. An 8-inch steam line led into the acid house. Two tunnels containing acid, air, and electric lines led away from the acid house. Two storage tanks with unknown contents were located immediately south of the acid house. The historical drawing did not indicate if the tanks

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were above ground storage tanks or below ground storage tanks. This AOI is estimated to be less than 15 ft deep.

The historical operations and use of the acid house are unknown. Wastes managed at this AOI are unknown, but likely included acids.

There have been no previous investigations or remedial actions at this AOI.

The Acid House was identified during the historical drawing review and the use and closure of the Acid House is unknown. Due to the possibility that this AOI held acids which could have deteriorated the integrity of the AOI and resulted in a release of hazardous constituents to the environment, further action at this AOI is anticipated. Further actions planned are described in Table 1 and consist of one soil boring for TCL VOCs, TCL SVOCs and TAL Metals.

2.1.11 AOI 2-52 Pickling Room

AOI 2-52 consists of a pickling room located in Column A3 of Building 203. AOI 2-52 has a concrete wall and an acid-resistant brick floor. This AOI is located at grade level.

The Pickling Room was identified during the historical drawing review and the exact use of the room is unknown, but, from discussions with Plant 2 personnel, acids were used at this AOI. The room is adjacent to a shot blast room, as well as an air washing room.

There have been no previous investigations or remedial actions at this AOI.

AOI 2-52 ceased operations prior to March 2006. Due to the possibility that this AOI held acids which could have deteriorated the integrity of the AOI and resulted in a release of hazardous constituents to the environment, further action at this AOI is anticipated. Further actions planned are described in Table 1 and consist of one soil boring for TCL VOCs, TCL SVOCs and TAL Metals.

2.1.12 AOIs / Miscellaneous Items List

The list of AOIs identified in the above paragraphs originated in the CCR. Those areas originally identified in the CCR as Miscellaneous Items, where further investigation activities are planned, are now listed on Table 1 as AOIs with the prefix I.D.

These areas are listed below and the proposed investigation activity for each area is listed on Table 1:

AOI I.D	AOI Title	Materials Handled
ID 2-26	Quench Oil Operations	Quench Oil
ID 2-27	Paint Shop Sumps and Trenches	Paint Shop Liquid Wastes
ID 2-31	Press Pit and Associated Sumps, Pits, and Trenches	Used Hydraulic Oil
ID 2-32		Used Oil
ID 2-33		Oily Waste
ID 2-34		Used Hydraulic Oil
ID 2-35		Used Tramp Oil
ID 2-49		Unknown
ID 2-36	Oil Separator and Sump	Used Oil
ID 2-37	Press Pits	Used Hydraulic Oil
ID 2-38	Scrap Steel Operations Pits	Scrap Steel and Oily Waste
ID 2-39	Fuel Oil Pump House and Tank Farm	Fuel Oil
ID 2-55	PCB Storage Deck	PCBs
ID 2-59	Press Pits	Used Hydraulic Oil

Those Miscellaneous Items summarized in Table 2 and listed below, where no further action is planned, will be investigated through the completion of "Data Gap Filler" soil borings (Table 1). Through MDEQ Matrix review and meeting discussions a total of 7 Data Gap Filler soil borings will be advanced at Plant 2 to 30 feet bgs, or to groundwater, whichever is encountered first, and analyzed for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

Purpose	Miscellaneous Items I.D.	Materials Handled
Misc Item Data Gap Filler Borings (7 total)	IDs: 2-20, 2-21, 2-22, 2-42, 2-43, 2-44, 2-46, 2-47, 2-48, 2-56, 2-57, 2-58, 2-59, 2-60, 2-63, 2-64,	SEE TABLE 2 FOR DESCRIPTIONS

2.2 Plant 3 Further Actions

This section describes and summarizes the 13 AOIs identified for further action at Plant 3 based on the approved RFI Matrix (ARCADIS, June 2011). The AOIs are summarized in Table 1 and are shown on Figure 3.

2.2.1 AOI 3-2 SWMU 16 – Plant 3 Oily Waste Treatment System

AOI 3-2 contains two concrete 28,000-gallon batch used oil holding tanks, a concrete 60,000-gallon emergency overflow tank, two concrete 10,000-gallon oily sludge tanks, and several treatment chemical tanks. AOI 3-2 also has a steel gondola used to accumulate oily sludge. AOI 3-2 is entirely indoors in Building 301A and began operations in 1953. AOI 3-2 ceased operations in November 2006. This AOI is estimated to be less than 20 ft deep.

AOI 3-2 was used to treat oily wastewater. AOI 3-2 formerly managed used soluble oil from Plant 2 and insoluble oil from Plant 3. Treatment of Plant 2 soluble oil ceased before 1993. Two steel 10,000-gallon tanks accumulated used oil until transported off-site for reclamation. Oily sludge generated from this unit was combined with machining residue and managed in the Machining Residue Storage Area. The used oil and oily sludge generated from this unit were managed as hazardous waste until the mid-1980s due to their cadmium, chromium, and lead content.

There have been no previous investigations or remedial actions at this AOI.

AOI 3-2 ceased operations in November 2006. Through MDEQ Matrix review and meeting discussions three soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.2.2 AOI 3-3 SWMU 17 – Scrap Metal Pits and Bins

AOI 3-3 consists of 12 former concrete pits, each of which was 12 ft by 12 ft and 15 to 20 ft deep, a 4,000 gallon soluble oil sump pit, and a 2,000 gallon cutting oil sump pit. The pits were located along the east side of Building 301 outdoors and were covered by a roof. The unit began operations in 1954. This AOI is 10 ft deep based on historical drawings.

Wastes managed at AOI 3-3 included scrap metal and oils generated from Plant 3 machining and stamping operations. Fluids were normally present during operations at this AOI. The scrap metal was eventually collected from the pits by various scrap metal recycling companies.

During the removal of AOI 3-3, oil stained soil was excavated and disposed of offsite. Verification soil sampling was not likely completed.

AOI 3-3 was removed prior to 2000 and paved over. Because a release at this AOI occurred, oil stained soil was excavated from this AOI, and verification sampling may not have been completed. Through MDEQ Matrix review and meeting discussions two soil borings will be advanced for TCL SVOCs and TAL Metals.

2.2.3 AOI 3-4 SWMU 18 – Machining Residue Storage Area

AOI 3-4 consists of an asphalt-paved area with a 20-cy roll off box. AOI 3-4 is located at the end of a conveyor that transports machining residue out of Plant 3 into the roll off box. AOI 3-4 began operations prior to 1983. This AOI is located at grade level.

Wastes managed at AOI 3-4 include nonhazardous machining residue, nonhazardous oily sludge generated from AOI 3-2 (SWMU 16), and solid waste generated from AOI 3-5 (SWMU 19). Fluids were not normally present on the asphalt paving during operations at this AOI.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 3-4 ceased operations prior to November 2006. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions

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at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL SVOCs and TAL Metals.

2.2.4 AOI 3-5 SWMU 19 – Plant 3 Clarifier

AOI 3-5 is a circular, concrete, below grade clarifier. AOI 3-5 began operations in 1970 and was recently active. This AOI is estimated to be less than 15 ft deep.

Wastes managed at AOI 3-5 include storm water runoff, oil and sediments from Plants 2 and 3. Clarified water discharges into the Grand River, while small amounts of nonhazardous sludge generated from the clarifier are managed in the Machining Residue Storage Area (AOI 3-4).

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 3-5 was recently an operating unit. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. In addition, during demolition activities these tanks were visually inspected to determine if the tanks were structural intact or if evidence of cracking was present. The tanks were determined to be in good conditions with no evidence of past releases.

Therefore, no further actions at this AOI are warranted.

2.2.5 AOI 3-6 SWMU 20 – Former Electroplating Waste Treatment System

AOI 3-6 consisted of several indoor aboveground storage tanks (ASTs). The ASTs were located on a concrete floor. AOI 3-6 began operations in 1953, and underwent modifications in 1973 and 1975. AOI 3-6 was partially dismantled in 1989.

AOI 3-6 was used to treat electroplating wastes. Various hazardous wastes were managed at this unit, including wastes generated from copper, nickel, and chromium electroplating. Hazardous wastewater treatment sludge generated at the unit was managed in the Former Electroplating Waste Treatment Sludge Storage Area, while treated wastewater was discharged to the sanitary sewer. The treatment of electroplating waste ceased in 1989 and the unit became partially dismantled.

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As part of the investigation of this AOI, samples were collected in and around AOI 3-6. Laboratory analysis showed exceedances of groundwater surface water interface protection (GSIP) criteria for chromium total and residential drinking water protection (DWP) and GSIP criteria for nickel. Refer to the CCR for additional information.

AOI 3-6 ceased operations in November 2006. Exceedances of the DWP and GSIP screening levels (specifically in the deepest sample collected) indicate that a release of hazardous constituents to the environment may have occurred in this area. Further actions planned are described in Table 1. A round of groundwater sampling will be completed at Plant 3 that will include the existing wells located near AOI 3-6. One soil boring will be completed at the previous 27 location and analyzed for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.2.6 AOI 3-9 AOC 2 – Building 301 UST Farm

AOI 3-9 consisted of six USTs, with capacities ranging from 5,000 to 20,000 gallons. The USTs were located east of Building 301. The USTs were removed in 1989. This AOI is estimated to be less than 15 ft deep.

The six USTs were used to store polymer, sulfuric acid, soluble oil, gasoline, hydraulic oil, and APCO cleaner, respectively. The USTs were closed in accordance with NREPA Part 213, and removed in 1989.

Investigations and remedial actions were conducted at this AOI from 1989 to 1996. The USTs were removed in 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Benzene, tetrachloroethylene, and chloromethane were detected in soil samples from the UST area at concentrations above cleanup criteria established at the time of removal. Approximately 1,200 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Refer to the CCR for additional information.

In accordance with NREPA Part 213, an industrial Tier II closure report incorporating a restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996. The restrictive covenant was filed with the Ingham County Registrar of Deeds on August 4, 2003. Refer to the CCR for additional information.

The USTs in this unit were closed in 1989 in accordance with NREPA Part 213. A closure report was submitted to the MDEQ that relied on land and resource use restriction documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described in the CCR. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions two soil boring will be advanced at the previous SB-2 and SS-15 locations for TCL VOCs, TCL SVOCs, TAL Metals and PCBs. Maintaining the restrictive covenant will continue.

2.2.7 AOI 3-10 AOC 4 – Plant 3 Former Electroplating Area

AOI 3-10 consisted of the electroplating area located inside Building 301 and 301A with 13 nickel-related tanks and 23 copper related tanks labeled as cyanide source at the plant. AOI 3-10 also includes a 5 ft by 6 ft by 7 ft sludge sump unit and filter pump and motor. The filter pump and motor is located next to the sludge sump unit and south of the nickel storage tank. The sludge sump unit is located in the northeast portion of Building 301.

Wastes managed at AOI 3-10 included various hazardous wastes generated from copper, nickel, and chromium electroplating operations. Fluids were normally present during operations at this AOI.

There were numerous investigations completed at this AOI. Investigations were conducted by EDI Engineering & Science (EDI) (November 1988 to November 1989), WW Engineering & Science (WWES) (September 1990 to May 1992), URS (October 1993 to June 1994), and ARCADIS (March 2002 to present). Refer to the CCR for additional information.

Soils Investigation of the Plating Area at Plant 3 – (EDI, 1988): A soil sampling program was performed to determine soil impact from the plating operations, delineate the vertical and horizontal extent of impact, and determine groundwater quality. Thirty-nine borings were advanced in and around AOI 3-10, and soil from these borings was collected for laboratory analysis. One bedrock monitoring well, MW-88-1, was installed in a projected down gradient location of Plant 3.

The soil analytical results indicated that soil from beneath and adjacent to Building 301 contained concentrations of nickel, zinc, copper, and cyanide above former Michigan Act 307 Type A or B Criteria. These COC were associated with the plating process.

Groundwater from monitoring well MW-88-1 was sampled and analyzed, and found to be un-impacted by nickel, zinc, copper, and cyanide. Groundwater grab samples were taken from perched groundwater encountered in some of the soil borings and submitted for analysis. The results indicated impact to the shallow perched groundwater from nickel, copper, and cyanide.

Phase II Soils Investigation of the Plating Area at Plant 3 – (EDI, 1989): A second phase of subsurface investigation was performed to further delineate the extent of impact. Eleven soil borings were installed around the exterior of Building 301 and included soil borings located along storm and sanitary sewer lines. Thirteen soil borings were installed inside the building in areas where press lines were being constructed. Forty-eight soil samples were collected from the bottom and sides of the excavations after removing the plating equipment and during construction activities for press line installation. Most of the impacted soils uncovered during the excavation and construction activities were removed and disposed in a licensed hazardous waste landfill. Soil samples were submitted for laboratory analyses of copper, nickel, zinc, and cyanide. Groundwater samples were collected from perched groundwater encountered in 10 of the exterior soil boring locations and analyzed for the same parameters. Soil concentrations in samples from the exterior borings were all below reportable limits or below the respective former Michigan Act 307 Type A or B Criteria. Results from the analyses of soils from the interior sampling locations indicated the presence of impacted soils remaining within this area of Building 301. Results of the groundwater analyses indicated no impact to the perched groundwater in the locations sampled. A French Drain was installed in the excavation and press line construction area to collect perched groundwater around the impacted soils that remained in place.

Phase IIA Soils Investigation of the Former Chromium Plating Area at Plant 3 – (EDI, 1990): Impacted soils were uncovered and removed during press line installation activities and the second phase of subsurface investigation at this AOI. Soil boring and grab samples in the excavations indicated further impact to soils at depth; as a result, additional subsurface investigation activities were performed.

Three additional soil borings were installed to further determine the vertical extent of soil impact. Soil and groundwater were collected from each boring and analyzed for chromium. Results from the soil analyses indicated that shallow soil (< 30 ft bgs) in this AOI had been impacted by chromium above mean chromium concentrations, plus three standard deviations (53 milligrams per kilogram [mg/kg]) of “background Michigan soils,” while soils below 30 ft bgs were not. Chromium concentrations in groundwater from two of the soil borings were below reportable limits. Groundwater

from the third boring located within the excavation beneath this AOI and in close proximity to the French Drain, exhibited a chromium concentration above the maximum contaminant level (MCL), or drinking-water standard, of 0.05 milligrams per liter (mg/L).

Site Assessment Report, Tank 12, Plant 3 – (EDI, 1989): A UST (Tank 12) was part of this AOI. The UST was used to store nickel sulfate solution and was located inside Building 301. The tank was abandoned in place and a subsurface investigation was performed to define and delineate possible soil impact adjacent to the UST. Three soil borings were installed around the former UST, and soil samples were collected and submitted for laboratory analysis. Soil samples were analyzed for chromium, copper, nickel, zinc, and cyanide. Results from the soil analyses indicated that nickel concentrations were above normal background levels according to the consultant.

Phase II Site Investigation Report at Tank 12, Plant 3 – (WWES, 1990): Based on the Site Assessment Report, Tank 12, Plant 3 (EDI, 1989), a Phase II site investigation was developed and performed to further define the extent of nickel impact to the soil and groundwater around former UST Tank 12. Five soil borings were installed and soil samples were collected to determine the vertical and horizontal extent of nickel impact. Perched groundwater was sampled from the five soil borings and submitted for nickel analysis. Results for the soil analyses indicated that shallow soils (<10 ft bgs) were impacted (above former Michigan Act 307 direct dermal contact levels), while deeper soils did not exhibit elevated concentrations of nickel. All soils were located under pavement or concrete and did not present a direct contact risk. Results from the groundwater sampling suggested impact to the perched groundwater from nickel, but sampling procedures may have contributed to higher concentrations than would have been representative. Based on these previous investigations, WWES submitted the *Site Investigation Plan for Former Plating Area and Tank 12* (WWES, 1991), with field activities commencing in August 1991.

Phase III Site Investigation Report, GMC-Lansing Plant 3, Former Plating Area - (WWES, 1992): Drilling, well installation, and sampling activities associated with the Site Investigation Plan for FPA and Tank 12 (WWES, 1991) was conducted by WWES starting in August 1991. Results of the investigation were presented in the Phase III *Site Investigation* Report prepared by WWES (WWES, 1992) and submitted to the MDNR Environmental Response Division (ERD) on May 18, 1992. Results of this investigation were as follows:

- Groundwater is present on-site in three distinct zones: a localized perched groundwater zone within the glacial overburden, a saturated zone at the bedrock/overburden contact, and a bedrock aquifer.

- Perched groundwater was sampled from the French Drain installed in 1989. Results of the groundwater analysis of the French Drain indicated that concentrations of copper, nickel, zinc, and cyanide remain above former Michigan Act 307 Type A and Type B Criteria.

- Groundwater analytical results from the bedrock/overburden indicated that concentrations of the same analytes were not above the established former Michigan Act 307 Type A and B Criteria.

- Groundwater analytical results from the bedrock identified zinc concentrations above established former Michigan Act 307 Type B Criteria.

Based upon the subsurface investigation and results, WWES recommended developing a risk assessment, and performing continued sampling and analysis of the monitoring wells and French Drain.

GM-LAD Plant 3, Building 301, Plating Area and Tank 12 Site Investigation Report - (URS, 1994): Drilling, well installation, and sampling activities associated with the Work Plan for Site Characterization and Risk Assessment, Plating Area and Tank 12, GMC Plant 3, Lansing, Michigan (RMT, Inc. [RMT], 1993) were conducted by URS starting in October 1993. Results of the investigation were presented in the *GM-LAD Plant 3, Building 301, Plating Area and Tank 12 Site Investigation Report* (URS, 1994) and submitted to the MDNR ERD by URS on June 22, 1994. Results of this investigation were as follows:

- The results from previous subsurface investigations were confirmed.

- Results of the analysis of perched groundwater from the French Drain indicated elevated concentrations of chromium, copper, nickel, zinc, and cyanide. The concentrations of nickel in these samples exceeded established former Michigan Act 307 Type B Criteria.

- Results of the analyses of groundwater samples from the bedrock/overburden contact indicated concentrations of chromium, copper, nickel, zinc, and cyanide were below the established former Michigan Act 307 Type A and B Criteria.

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- Results of the analyses of groundwater from the bedrock aquifer indicated chromium, copper, nickel, zinc, and cyanide were not detected or the concentrations were below established former Michigan Act 307 Type A and B Criteria.

- In an overview of historical groundwater analytical data and data derived from the URS investigation, URS determined that concentrations of chromium, copper, nickel, zinc, and cyanide in groundwater from the bedrock/overburden contact were not above the established former Michigan Act 307 Type B Criteria. However, concentrations in soil and perched groundwater were detected above established former Michigan Act 307 Type B Criteria at this AOI.

- The recommendation of the URS investigation was to close the AOI in accordance with former Act 307 Type C closure requirements, Section R229.5717.

In addition to the investigations described above, the following activities have been conducted on-site:

GM has been operating, maintaining, and sampling the French Drain collection system and implementing long-term monitoring and sampling of the overburden monitoring wells at this AOI. Prior to 2002, long-term groundwater monitoring included annual sampling of the overburden monitoring wells (i.e., MW-91-1, MW-91-2, MW-93-1, MW-93-2, and MW-93-3) and the French Drain. Groundwater samples were analyzed for dissolved nickel only. Samples from the French Drain were analyzed for beryllium, cadmium, chromium, copper, cyanide, iron, lead, nickel, silver, and zinc.

ARCADIS collected groundwater samples from the five overburden monitoring wells and French Drain on-site from April 27, 2002 to May 3, 2002. Results of the analyses show that concentrations of beryllium, iron, and nickel in the sample collected in the French Drain have decreased since it was first sampled, but exceed the Michigan Part 201 Residential Drinking Water Criteria (RDW). Concentrations of iron in monitoring wells MW-91-1 and MW-91-2 exceeded the Part 201 RDW. No cadmium, lead, silver, or cyanide was detected in the samples from these down-gradient monitoring wells. The potentiometric surface of the overburden aquifer was (and still is) below the screened interval in several of the previously installed monitoring wells (i.e., MW-93-1, MW-93-2, and MW-93-3) due to a drop in groundwater elevation across Plant 3.

ARCADIS conducted drilling, well installation, sampling, and groundwater modeling activities starting in October 2002, and subsequently prepared an IRWP (BBL, 2004) that was submitted to the MDEQ for review and comment. The MDEQ provided comments in a letter dated May 24, 2004. The MDEQ requested additional investigation and recommended that GM submit an investigation report instead of an IRWP, since this AOI investigation was not a Site-wide investigation.

ARCADIS continued drilling, well installation, and sampling activities starting in September 2004, based on the recommendations outlined in the IRWP (BBL 2004) and the MDEQ comments. Two overburden and two bedrock monitoring wells were installed. A second round of groundwater sampling with new wells was conducted in June of 2005.

Data box figures showing soil and groundwater data results from previous investigations were provided in the CCR.

AOI 3-10 ceased operations prior to 1988. Based on the results of previous investigations a release of hazardous constituents to the environment has occurred in this area. As such, further action at this AOI is anticipated. Further actions planned are described in Table 1. Through MDEQ Matrix review and meeting discussions three soil boring will be advanced at the previous CH-13, CH-14 and CH-15 locations for chromium. Groundwater samples will be collected from MW-91-2 to assess drinking water exceedances.

2.2.8 AOI 3-11 SWMU 14 - Former Scrap Metal Storage Areas

AOI 3-11 consists of areas formerly located west of Building 304 and east of Building 302. Various types of scrap metal were staged in this area, ranging from stock material to metal shavings. This AOI is estimated to be less than 5 ft deep.

AOI 3-11 was used to stage oil covered stock material as well as metal shavings from plant machining processes. Wastes managed at this AOI include scrap metal. Fluids were not normally present on the pavement during operations at this AOI.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 3-11 ceased operations prior to 2006. Based on the nature of the operations at this AOI, and the construction and the waste management practices employed, it is

unlikely that there was a release to the environment from this AO. Therefore, no further actions at this AOI are warranted.

2.2.9 AOIs / Miscellaneous Items List

The list of AOIs identified in the above paragraphs originated in the CCR. Those areas originally identified in the CCR as Miscellaneous Items where further investigation activities are planned are now listed on Table 1 as AOIs with the prefix I.D. These areas are listed below and the proposed investigation activities for each area are listed on Table 1:

AOI Identification	AOI Title	Materials Handled
ID 3-13	Henry Filter Pits and Trenching	Used Hydraulic Oil
ID 3-15	Oil Sump for Crank Shaft Operations	Used Oil
ID 3-17	Broach Machine Filter Pit	Used Oil
ID 3-51	Building 304 and 305 Press Pit Operations	Used Hydraulic Oil
ID 3-54	Sump	Unknown

The Miscellaneous Items summarized in Table 2 and listed below will be investigated through the completion of “Data Gap Filler” soil borings (Table 1). Through MDEQ Matrix review and meeting discussions a total of 6 Data Gap Filler soil borings will be advanced at Plant 3 to 30 feet bgs, or to groundwater, whichever is encountered first, and analyzed for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

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Purpose	Miscellaneous Items I.D.	Materials Handled
Misc Items Data Gap Filler Borings (2 total)	IDs: 3-33, 3-34, 3-38, 3-40, 3-41, 3-42, 3-43, 3-44, 3-45, 3-46, 3-47, 3-48, 3-51, 3-52, 3-53, 3-54, 3-55, 3-56, 3-57, 3-58, 3-59, 3-60, 3-61, 3-62, and 3-63	SEE TABLE 2 FOR INFORMATION
Misc Items Data Gap Filler Borings (3 total)	IDs: 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-24, 3-25, 3 -26, 3-27, 3-28, 3-29, 3-30, 3-36, 3-38, 3-49	SEE TABLE 2 FOR INFORMATION
Misc Items Data Gap Filler Borings (1 total)	IDs: 3-35, 3-37 and 3-50	SEE TABLE 2 FOR INFORMATION

2.3 Plant 6 Further Actions

This section describes and summarizes the 27 AOIs identified for further action at Plant 6 based on the approved RFI Matrix (ARCADIS, June 2011). The AOIs are summarized in Table 1 and are shown on Figure 4.

2.3.1 AOI 6-1 SWMU 1 – Original Hazardous Waste Storage Area

This unit consisted of an outdoor concrete area approximately 40 ft by 100 ft. The concrete was covered with a layer of asphalt and was surrounded by a trench. The unit was not an enclosed unit. It began operation around 1980 and ceased in 1990. This AOI is estimated to be less than 5 ft deep.

Wastes managed at this unit included ELPO filters, ELPO sludge, purge thinner, paint, solvent wipes, and other paint-related wastes that were contained in drums and accumulated in the storage area. Fluids were not normally present in the trenches during operations at this AOI. The storage area operations ceased in 1990 and an Air Pollution Control System (APCS) Incinerator was constructed in its place.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 6-1 ceased operations in 1990. Based on the nature of the operations at this AOI which utilized a secondary containment area were fluids were not normally present in

the trench, and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions two soil borings will be advanced for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.2 AOI 6-10 SWMU 10 – Nonhazardous Waste Consolidation Area

This unit consisted of a 40-ft by 80-ft roofed area on a concrete base. The unit began operations in 1921 and ceased in 2005. This AOI is located at grade level.

Wastes managed at the unit included the following nonhazardous wastes contained in drums: epoxy purge, grinding waste, oven condensate, trim purge, and used hydraulic oil. Fluids were not normally present on the concrete floor during operations at this AOI. The wastes were taken directly off-site from this unit. Operations at the unit ceased in 2005.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 6-10 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI are warranted. However, through MDEQ Matrix review and meeting discussions two soil borings will be advanced. Based on field screening, at least one, possibly both samples will be analyzed for TCL SVOCs and TAL Metals.

2.3.3 AOI 6-11 SWMU 11 – Wastewater Cistern

This unit consists of an underground tank of approximately 100,000 gallons. The unit began operations in 1977 and ceased in 2005. This AOI is estimated to be less than 20 ft deep.

Wastes managed in this unit included wash water from rinsing automobile bodies and the overflow of phosphoric acid from phosphoric acid pickling tanks. Wastewater in the tank was discharged to the wastewater treatment unit at GMC's Plant 2. Operations at the unit ceased in 2005.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 6-11 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions two soil borings will be advanced for TAL Metals.

2.3.4 AOI 6-14 SWMU 14 – Oil Accumulation Area

This unit consisted of 55-gallon steel drums located primarily in an area designated for indoor transport vehicles. Drip pans were also located throughout Plant 6 to capture used oil. The drip pans drained under gravity to 55-gallon drums, which were then accumulated at this unit. The unit began operations in 1921 and ceased in 2005. This AOI is located at grade level.

Waste hydraulic oil was accumulated in the 55-gallon drums that made up the unit. Fluids were not normally present on the pavement during operations at this AOI. The waste hydraulic oil was then transferred to the Nonhazardous Waste Consolidation Area (SWMU 15 – AOI 6-15). Operations at the unit ceased in 2005.

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

AOI 6-14 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, the CCR had determined no further actions at this AOI was warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.3.5 AOI 6-16 and AOI 6-33: AOC 1 – Tanks 5 and 6 and Tank Farm

AOI 6-16 consisted of Tank 5 (a 4,000-gallon steel storage tank) and Tank 6 (a 15,000-gallon steel storage tank). The unit began operations in 1973 and ceased in 1991. This AOI is estimated to be less than 15 ft deep.

AOI 6-33 consists of a UST farm located outside and south of Building 23 that was 16-ft below grade surface and housed virgin purge thinner and diesel fuel. AOI 6-33 was installed in the same location as AOI 6-16. This AOI ceased operations in 2006 when the USTs where removed from the ground.

Tank 5 was used to store gasoline, while Tank 6 was used to store diesel fuel. The tanks began operations in 1973 and were removed in 1991.

The USTs in AOI 6-33 held virgin purge thinner and diesel fuel. Operations at the AOI ceased in 2006.

Investigations were conducted at AOI 6-16 from 1991 to 1992. The USTs were removed in May of 1991 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Approximately 2,250 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Refer to the CCR for additional information.

In accordance with NREPA Part 213, an industrial Tier II closure report was submitted to the MDEQ storage tank division on December 14, 1995 by ESE (ESE, 1995). A draft restrictive covenant was submitted to the MDEQ, but not finalized or filed with the Ingham County Registrar of Deeds. The draft restrictive covenants were included in the CCR.

During the tank removal in May of 2006 at AOI-6-33 confirmation samples were obtained and analyzed. Analytical results from samples taken showed that there was no release of concentrations of constituents of concern from the USTs. In accordance with NREPA Part 211, a clean closure letter report was sent to the MDEQ on June 29, 2006. A letter was received from the MDEQ on July 17, 2006 indicating that the MDEQ concurred with the clean closure.

AOI 6-16 ceased operations in 1991. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment has occurred in this area. AOI 6-33 ceased operations and was removed from the ground in May 2006. Investigations indicated that there was no release from this AOI, and a clean closure letter report was sent to the MDEQ on June 29, 2006. A letter was received from the MDEQ on July 17, 2006 indicating that the MDEQ concurred with the clean closure.

Further action at these AOIs include reoccupying boring SW-4-UST-5-6 and analyzing for TCL COVs, TCL SVOCs and lead. Groundwater samples will also be collected from the existing wells in the vicinity of these AOIs and analyzed for TCL VOVs, TCL SVOCs, TAL Metals and PCBs.

2.3.6 AOI 6-17 AOC 2 – USTs 1 and 3

This unit consisted of UST 1 (a 7,500-gallon carbon steel storage tank) (SWMU 4) and UST 3 (a 12,000-gallon carbon steel storage tank) (SWMU 8). The unit began operations in 1973 and ceased in 1991. This AOI is estimated to be less than 15 ft deep.

USTs (Tanks 1 and 3) held virgin thinner and were made up of SWMU 4 and SWMU 8. The tanks were installed in 1973 and were removed in 1991.

Investigations were conducted at this AOI from 1989 to 1996. The USTs were removed in 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Approximately 700 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Refer to the CCR for additional information.

In accordance with NREPA Part 213, an industrial Tier II closure report was submitted to the MDEQ storage tank division on November 1, 1996 by ESE (ESE, 1996). A draft restrictive covenant was submitted to the MDEQ, but not finalized or filed with the Ingham County Registrar of Deeds. The draft restrictive covenant was included in the CCR.

AOI 6-17 ceased operations in 1991. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment has occurred in this area. Through MDEQ Matrix review and meeting discussions three soil borings will be advanced for TCL VOCs. The soil boring locations include reoccupation of borings SA 4-3 and VEW-5 and one new boring south of the AOI. Groundwater samples will also be collected from the existing monitoring wells in the vicinity of the AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals

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2.3.7 AOI 6-18 Lead in Soil Area

AOI 6-18 consists of an area west of Buildings 10, 11, 12 13, and 15 where lead has been detected in the soil at levels that reach above the hazardous limit. In previous ARCADIS reports this AOI was referred to as AOI 1.

The historical operations of the area are not known. It is unknown what wastes were managed at this AOI.

Investigations have been conducted by Wenck Associates, Inc. (Wenck) (July 1992 to April 1993); URS Consultants, Inc. (URS) (October 1993); Soils and Materials Engineers, Inc. (SME) (March 1996 to July 1997); and ARCADIS (November 2002 to 2005). Drilling and soil sampling were conducted in the early 1990s by Wenck and URS. Composite and discrete soil samples were analyzed for total lead, Toxicity Characteristic Leaching Procedure (TCLP) lead.

Well installation and soil and groundwater sampling were conducted by SME in the late 1990s. Discrete soil samples were analyzed for total lead. Groundwater samples were analyzed for chloride, sulfate, magnesium, sodium, potassium, and dissolved lead.

ARCADIS installed and sampled three monitoring wells in November 2002. Groundwater from grab samples and the monitoring wells was sampled and analyzed for total lead. Additional low-flow sampling of these wells was performed in March 2003 with the addition of dissolved lead as a parameter and additional field parameter monitoring. Well installation and the first round of groundwater sampling took place in July and August 2003. The second round of groundwater sampling was conducted in September 2003. Upon completion of the above investigations, ARCADIS prepared an IRWP (BBL, 2004b) and submitted it to the MDEQ for review and comment. In a letter dated May 24, 2004, the MDEQ requested additional investigation activities, but recommended that GM submit an investigation report. Well installation and groundwater sampling were conducted by ARCADIS in September and October 2004 in accordance with the IRWP (BBL, 2004b). Three overburden and three bedrock monitoring wells were installed.

Refer to the CCR for additional information. Based on discussions with GM personnel, it has been determined that a portion of the soil in this area was excavated as a result of plant construction activities. There have been no additional remedial actions completed at this AOI.

AOI 6-18 ceased operations prior to 1992. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions two soil borings will be advanced for TCL VOCs, TCL SVOCs and TAL Metals. Groundwater samples will be collected from the existing monitoring wells in the vicinity of this AOI.

2.3.8 AOI 6-19 Process Wastewater Tunnel

AOI 6-19, which is located west of the Power Plant, runs underneath Buildings 28 and 21, exits Plant 6 to the west of the buildings and continues to the GM Lansing Plant 2. AOI 6-19 ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

AOI 6-19 managed process wastes from Plant 6. Wastes managed at this AOI include process wastewater. Operations at the AOI ceased in 2005.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA10-3 and SA10-4 were installed in and around AOI 6-19. Samples collected at each location were field screened to assess potential environmental impacts from AOI 6-19. In addition, due to the operations of AOI 6-19, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Refer to the CCR for additional information.

AOI 6-19 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.9 AOI 6-30 New Weld Pit

AOI 6-30 consists of an 18 ft by 50 ft weld pit located in the eastern portion of Building 18. The AOI is 4 ft deep based on a historical drawing. The AOI ceased operations in 2005.

This AOI was a part of the conveyor operations in Building 16. Wastes managed at this AOI include metals. Operation at the AOI ceased in 2005.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil boring SA29-2 was installed in AOI 6-30. Samples collected at were field screened to assess potential environmental impacts from AOI 6-30. In addition, due to the operations of AOI 6-30, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Refer to the CCR for additional information.

AOI 6-30 ceased operations in 2005. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.10 AOI 6-43 Stormceptor® Oil and Sediment Separator

AOI 6-43 consists of a Stormceptor® oil and sediment separator located west of Building 15. This AOI is estimated to be less than 30 ft deep.

The Stormceptor® functioned as an oil and sediment separator for storm water runoff. The Stormceptor® is an active AOI. Wastes managed at this AOI include storm water, oil and sediments.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil boring SA 13-1 was installed in AOI 6-43 to a depth of 7 to 9 ft bgs. Samples collected were field screened to assess potential environmental impacts from AOI 6-43. In addition, due to the operations of AOI 6-43, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Refer to the CCR for additional information. Due to the depth of the AOI (approximately 30 ft bgs) in relation to the depth of the sample (7 to 9 ft bgs), it is believed that the exceedances of GSIP

screening levels for chromium are not related to this AOI. There have been no remedial actions at this AOI.

The samples taken at this AOI are not related to this AOI due to their depth. Another Stormceptor® located at the Site (AOI 6-42) was investigated and did not show evidence of the release to the environment. Therefore it is not likely that there was a release to the environment from this AOI. Therefore the CCR stated that no further action was required at this AOI. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.11 AOI 6-47 Leaking Industrial Wastewater Line

AOI 6-47 consists of a leaking industrial wastewater line located in the southwest corner of Building 16. This AOI is estimated to be less than 15 ft deep.

The AOI was a part of the former paint booth operations. Metals associated with the process wastewater had the potential to impact Plant 6. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include process wastewater.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil boring SA 4-4 was installed in AOI 6-47. Samples collected were field screened to assess potential environmental impacts from AOI 6-47. In addition, due to the operations of AOI 6-47, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-47 ceased operations in 2005. Exceedances of the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. Also advance one soil boring for TCL VOCs, TCL SVOCs and TAL Metals.

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2.3.12 AOI 6-48 Former Coal Pile

AOI 6-48 consists of a former coal pile located in the vicinity of Building 28. This AOI is located at grade level.

The AOI was used as a coal pile. Operations at the AOI ceased sometime prior to construction of Building 28.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 6-1 through SAS 6-12 were installed in and around AOI 6-48. Samples collected were field screened to assess potential environmental impacts from AOI 6-48. In addition, due to the operations of AOI 6-48, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total, DWP for cobalt, and GSIP and DWP for manganese. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-48 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. Two soil borings will be advanced in the location of previous borings SA6-7 and SA6-12 for cobalt, manganese and chromium.

2.3.13 AOI 6-49 Second Lacquer Booth

AOI 6-49 consists of a lacquer booth located in the northern portion of Building 10. This AOI is estimated to be less than 5 ft deep.

The AOI was a part of the former paint shop. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste paint and paint thinner.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil

Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 22-2 and SA 22-3 were installed in and around AOI 6-49. Samples collected were field screened to assess potential environmental impacts from AOI 6-49. In addition, due to the operations of AOI 6-49, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-49 ceased operations prior to 2005. Exceedances of the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

Therefore, the CCR had determined no further actions at this AOI were warranted. However, through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

2.3.14 AOI 6-59 Stormceptor® Oil and Sediment Separator

AOI 6-59 consists of a Stormceptor® oil and sediment separator located south of Building 23. The AOI ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

The Stormceptor® functioned as an oil and sediment separator for storm water runoff. The Stormceptor® is an active AOI. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include storm water, oil and sediment.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 3-1 and SA 3-2 were installed in and around AOI 6-59. Samples collected were field screened to assess potential environmental impacts from AOI 6-59. In addition, due to the operations of AOI 6-59, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.15 AOI 6-60 Paint Mix Room

AOI 6-60 consists of a paint mix room located in the south portion of Building 21. The AOI ceased operations in 2005. This AOI is located at grade level.

The AOI was a part of the painting operations. Wastes managed at this AOI include waste paint and thinner. Operations at the AOI ceased in 2005

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 5-1 and SA 5-5 were installed in and around AOI 6-60. Samples collected were field screened to assess potential environmental impacts from AOI 6-60. In addition, due to the operations of AOI 6-60, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in The CCR and showed elevated PID readings. Laboratory analysis showed exceedances of GSIP and DWP for VOCs and exceedances of GSIP for chromium total. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-60 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. A total of four soil borings will be advanced for TCL VOCs. The locations of each boring are listed on Table 1.

2.3.16 AOI 6-63 Sump

AOI 6-63 consists of a sump located in the eastern portion of Building 20. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

It is unknown what operations the AOI was associated with. Operations at the AOI ceased in 2005. Based on historical data, it is possible that the sump was part of the

Former WWTP. The WWTP was removed between 1985 and 1993. Building 20 was constructed in the general area of the sump. Fluids were normally present during operations at this AOI. It is unknown what wastes were managed at this AOI.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 32-1 was installed in AOI 6-63. Samples collected were field screened to assess potential environmental impacts from AOI 6-63. In addition, due to the operations of AOI 6-63, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-63 ceased operations in 1993. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.17 AOI 6-78 Former PCB Transformers

AOI 6-78 consisted of transformers formerly containing PCB located in the northeastern corner of the Power Plant Building.

The AOI was a group of PCB transformers within the Power Plant Building. Wastes managed at this AOI include PCB oil.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 7-9 was installed in AOI 6-78. Samples collected were field screened to assess potential environmental impacts from AOI 6-78. In addition, due to the operations of AOI 6-78, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-78 ceased operations prior to 2005. Detected concentrations of chromium above the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.3.18 AOI 6-81 Former Paint Shop Area

AOI 6-81 consists of a former paint shop area located in Building 14. This AOI is estimated to be less than 10 ft deep.

The AOI is a former paint shop where painting operations were conducted. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste paint and thinner.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 11-1 through SA 11-18 were installed in AOI 6-81. Samples collected were field screened to assess potential environmental impacts from AOI 6-81. In addition, due to the operations of AOI 6-81, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in The CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and exceedances of GSIP and DWP for cobalt and manganese. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-81 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. A total of five soil borings will be advanced for TCL VOCs, cobalt, manganese and chromium. This included reoccupying previous borings SA-11-, SA11-5 and SA11-11.

2.3.19 AOI 6-82 Coal Chute Building

AOI 6-82 consists of an entire coal chute building located south of Building 28. The AOI ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

The AOI is a coal chute building. Operations at the AOI ceased in 2005. Wastes managed at this AOI include coal.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 20-1 through SA 20-4 were installed in AOI 6-82. Samples collected were field screened to assess potential environmental impacts from AOI 6-82. In addition, due to the operations of AOI 6-82, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium and exceedances of DWP for cobalt. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-82 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. Complete one boring at the previous location of SA20-1 for cobalt, selenium and chromium.

2.3.20 AOI 6-83 Power Plant Building and Former WWTP

AOI 6-83 consisted of the entire Power Plant building including the former WWTP. This AOI is estimated to be less than 15 ft deep.

The former WWTP treated waste water generated from Plant 6 operations. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste water and sludge.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 7-1 through SA 7-10 were installed in and around AOI 6-83. Samples collected were field screened to assess potential environmental impacts from AOI 6-83. In addition, due to the operations of AOI 6-83, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in The CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed

exceedances of GSIP for chromium total and selenium, exceedances of GSIP and DWP for cobalt, and exceedances of DWP for manganese. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

The wastewater treatment operation portion of AOI 6-83 ceased operations in 1987. The powerhouse portion in AOI 6-83 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions, groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals, complete two soil boring for TCL VOCs, TCL SVOCs and TAL Metals and install two temporary groundwater monitoring wells down gradient of the AOI.

2.3.21 AOI 6-87 Oil Water Separator

AOI 6-87 consists of an oil/water separator associated with a truck dock. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

This AOI was associated with storm water management in the truck dock. Operations at the AOI ceased in 2005. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include used oil.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 9-2 was installed in AOI 6-87. Samples collected were field screened to assess potential environmental impacts from AOI 6-87. In addition, due to the operations of AOI 6-87, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 of Appendix C in the CCR and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-87 ceased operations in 2005. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions one soil boring will be advanced for TCL VOCs, TCL SVOCs, TAL Metals and PCBs. Soil samples at this location will be collected for chromium speciation.

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2.3.22 AOI 6-88 Parking Lot Exceedance

AOI 6-88 consists of parking lots. The AOI ceased operations in 2005.

The AOI managed potentially managed liquid automobile waste. Operations at the AOI ceased in 2005.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology. Refer to the CCR for additional information. Soil borings SA 34-6 was installed in AOI 6-88. Samples collected were field screened to assess potential environmental impacts from AOI 6-88. In addition, due to the operations of AOI 6-88, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in The CCR and showed elevated PID readings. Laboratory analysis showed exceedances of chromium total and selenium and exceedances of GSIP and DWP for VOCs. Refer to the CCR for additional information. There have been no remedial actions at this AOI.

AOI 6-88 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Through MDEQ Matrix review and meeting discussions groundwater samples will be collected from the existing wells in the vicinity of this AOI and analyzed for TCL VOCs, TCL SVOCs and TAL Metals. Also, four soil borings will be advanced for TCL VOCs, TCL SVOCs and TAL Metals. One of the borings will reoccupy previous boring SA34-6

2.3.23 AOIs / Miscellaneous Items List

The list of AOIs identified in the above paragraphs originated in the CCR. Those areas originally identified in the CCR as Miscellaneous Items where further investigation activities are planned are now listed on Table 1 as AOIs with the prefix I.D. These areas are listed below and the proposed investigation activities for each area are listed on Table 1.

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AOI Identification	AOI Title	Materials Handled
ID 6-36	Building 23 Sumps and Trenches	Unknown
ID 6-38		Unknown
ID 6-39		Unknown
ID 6-75		Used Automotive Fluids

The Miscellaneous Items summarized in Table 2 and listed below will be investigated through the completion of "Data Gap Filler" soil borings (Table 1). Through MDEQ Matrix review and meeting discussions a total of 4 Data Gap Filler soil borings will be advanced at Plant 6 to 30 feet bgs, or to groundwater, whichever is encountered first, and analyzed for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.

Purpose	Miscellaneous Item I.D.	Materials Handled
Misc Item Data Gap Filler Borings (4 total)	IDs: 6-22, 6-23, 6-24, 6-25, 6-26, 6-27, 6-28, 6-29, 6-35, 6-45, 6-50, 6-51,6-52, 6-53, 6-54, 6-55, 6-56, 6-57, 6-67, 6-69, 6-70, 6-71, 6-72, 6-73, 6-74, 6-76, 6-77	SEE TABLE 2 FOR INFORMATION

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3. Data Gaps

Based on an evaluation of the available information data gaps exist at the Site. The investigation proposed in the following sections of this Work Plan is intended to address these data gaps.

- **Groundwater flow:** Monitoring wells will be located on the Site to evaluate groundwater flow direction.

- **On-Site Impacts:** As described in Section 2.0 above on-site impacts exist at the Site, however limited characterization exists. Borings and monitoring wells located in the vicinity of the AOIs and Miscellaneous items will be completed during the investigation to assess the presence of contamination.

- **Off-site contaminant migration:** Monitoring wells will be installed near the property boundary to assess whether contamination has migrated off site. If necessary, the investigation will delineate the plume and assess the degree to which VOCs concentrations may have attenuated. Future sampling efforts (including offsite sampling) may be required to delineate and assess the offsite migration. These future sampling efforts will be performed as part of the second phase of investigation.

- **Presence of Light Non-Aqueous Phase Liquids (LNAPL):** The historical operation at the Site suggests that there may be LNAPL in this area. The investigation will evaluate LNAPL in the groundwater and soil.

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4. Subsurface Investigation

4.1 Proposed Investigation Activities

4.1.1 Subsurface Utility Evaluation

Decommissioning at each plant has begun. The above grade structures, including the main operating facilities, have been demolished and only the concrete slabs are left in place. As part of the decommissioning of the Site, permits were obtained through the City of Lansing and Lansing Township to abandon the existing utilities. Abandonment of the utilities involved "cutting and capping" the utilities where they entered the properties at the property boundaries. City and township officials inspected the abandoned utilities prior to the demolition activities commencing. Some of the storm sewer utilities on the Plant 6 properties were maintained active for drainage purposes. In addition, some of the water mains on the properties were maintained to provide fire protection to the surrounding areas. A fiber optics line runs along the southern property boundary at Plant 6. Historical underground utilities beneath the Site include storm sewer lines, waste water lines, and process sewer lines; some of which were approximately 20+ ft bgs. At this depth, it is possible that the utility lines acted as conduits for the subsurface contamination at the Site. Known utilities will be located by contacting the appropriate utility representative who will visibly mark the respective utilities before work begins on-site. Ground penetrating radar and hand clearing will also be used, when necessary, as a line of evidence in determining utility presence underground. Finally, historical underground utility as-built drawings, provided by RACER, will be used to verify if historical utilities were near prior to drilling beginning.

4.1.2 Monitoring Well Inventory

Prior to initiating the field investigation, a Survey will be completed by a licensed Professional Surveyor to attempt to locate previously installed monitoring wells. The surveyor will be provided with the coordinates of monitoring wells known to have been installed on the Site. A list of known monitoring wells present on the Site is provided in Table 3. Water levels will be measured at each known existing well to help determine depth to the water table for investigation purposes. Also, existing monitoring wells will be checked for the presence of free product with a hydrocarbon/water interface probe.

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4.1.3 Soil and Groundwater Investigation Plan

4.1.3.1 Investigation Approach

The overall purpose of the investigation is to determine the nature and extent of releases from the identified AOIs. Because of the limited amount of available soil and groundwater data on Site, the investigation will be performed in phases. The initial phase of work is described in this Work Plan. The objective of the initial phase is to:

- Determine whether constituents of concern (COCs) are present on site;
- Determine the overall direction of groundwater flow on-Site;
- Determine whether soil is impacted at the identified AOIs; and
- Assess background soil concentrations.

A list of all the AOIs that are planned to be investigated is provided in Table 1. Table 1 also provides a brief description of each AOI, a brief description of the proposed RFI activities, and the proposed analytical parameters to be completed at each location.

The initial phase of investigation as described herein will include approximately 40 soil borings at Plant 2, 37 soil borings at Plant 3 and 47 soil borings at Plant 6. It also includes the installation of 4 shallow monitoring wells at Plant 2 along the property boundary to assess the general groundwater flow direction. One shallow monitoring well will be installed at Plant 6 near AOI 6-47 to better define groundwater flow and to characterize groundwater quality downgradient of AOI 6-17.

Future investigations will be performed based upon the results of the initial investigation phase. It is expected that the second phase will include delineation of source area impacts within each AOI, as necessary, additional downgradient groundwater monitoring wells to delineate groundwater impacts. Additionally, further assessment of the Site hydrogeological regime will be completed.

4.1.3.2 Soil Borings Program

The proposed locations of soil borings at each Plant are depicted on Figures 2, 3 and 4. Soil boring locations were chosen based on historical analytical data and information about the Site as well as visual observations. These locations were chosen to evaluate

the soil quality in the vicinity of the AOIs. The proposed borings, the purpose of each boring, and the proposed soil samples to be collected are summarized in Table 1. The results of the soil sample analyses from this initial investigation will be used to develop a second phase of soil investigation at the Site. In general, at each boring location one sample will be collected from the interval just below the ground or concrete bottom surface (0 to 2 feet bgs), from the interval just above the water table (if groundwater encountered) or the bottom of the AOI, and from the interval with the highest photoionization detector (PID) levels and/or greatest visual impact. If the samples do not exhibit PID levels above background or visual evidence of impacts is not observed only the samples at the top and bottom of the boring will be collected. In addition, at those location where the groundwater is encountered a temporary well will be installed and a groundwater sample will be collected.

4.1.3.3 Monitoring Well Program

Additional monitoring wells are required to further evaluate the groundwater flow direction and to further delineate the extent of impacts at the Site. The approximate proposed locations for groundwater monitoring wells are depicted on Figures 2 and 4. As part of this initial investigation a total of four shallow groundwater wells will be installed at Plant 2 and one shallow groundwater monitoring well will be installed at Plant 6. After installation of the new monitoring wells and completion of the soil borings, groundwater sampling will be completed from the new and existing monitoring wells.. Prior to sampling of the wells, groundwater elevations will be measured and the wells will be assessed for the presence of Free Product. The existing wells will also be redeveloped prior to sampling because these wells have not been accessed for sampling in over 5 years. The installation of additional groundwater monitoring wells, beyond the monitoring wells being proposed as part of this work plan, will be based on evaluation of the new data further defined in a second phase of investigation. The purpose behind the locations of the proposed monitoring wells and a summary of the existing groundwater monitoring wells is presented in Table 3.

4.1.4 Site Specific Background Concentrations Investigation

4.1.4.1 Introduction

As a precursor to the RCRA Facility Investigation (RFI) to be completed at the Site, facility-specific soil background concentrations for naturally occurring constituents will be developed. The objective of calculating facility-specific background concentrations is to use the background concentrations for comparison to Site investigative soil

sample results to determine the potential of impact from Site releases. In accordance with Part 201 regulation R299.5701(b), for constituents for which a Statewide Default Background Value has been developed, a facility-specific background concentration may be used in place of an established risk-based cleanup criterion if the background concentration is greater. The Statewide Default Background Values are part of the Part 201 cleanup criteria presented in the Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division's (RRD's) *Operational Memorandum No. 1* (Op Memo 1) (MDEQ, 2004b).

The methods to be used in calculating the facility-specific background concentrations are described below and are in general conformance with the Michigan Department of Environmental Quality's (MDEQ's) *Sampling Strategies and Statistics Training Manual* (S3TM) (MDEQ, 2002).

4.1.4.2 Background Sample Locations

For the purposes of this background concentrations study, Plant 2, 3 and 6 are assumed to be contiguous and therefore together will be considered a single site location. Soil samples will be collected from areas assumed to be representative of unimpacted, or background, soil quality conditions. Due to the potential for natural spatial variability, the samples will be taken from multiple locations. Although unimpacted areas are present in the vicinity of currently or previously existing Site buildings, samples to be used for calculating facility-specific background concentrations will be collected from areas on RACER Trust properties that have not been developed for manufacturing purposes (e.g., parking lots, etc.). Because hazardous materials associated with manufacturing processes may be present at the former Site buildings, the absence of buildings related to manufacturing will increase the likelihood that constituents detected in these undeveloped areas are representative of background soil quality conditions.

To supplement the existing data set and to provide a sufficiently large data set for developing facility-specific background concentrations, additional borings will be completed within the parking lot areas north of Plant 3 and in the southeast corner of Plant 6, which based on historical aerial photo review appear to have not been used for manufacturing purposes. These areas are shown on Figures 3 and 4. The actual boring locations will depend on access and location of subsurface and above-ground utilities. The number and approximate depth of the proposed borings is described in Section 3.2. All soil samples will be collected and analyzed in accordance with the

protocol outlined in the MDEQ Remediation and Redevelopment Division (RRD) *Operational Memorandum No. 2* (Op Memo 2) (MDEQ, 2004a).

4.1.4.3 Background Sample Collection

4.1.4.3.1 Lithologic Units to be Sampled

MDEQ guidance document S3TM states approximately nine samples must be used to establish facility-specific background concentrations in soils. The goal of collecting facility-specific background data is to adequately represent the magnitude and variability of naturally occurring concentrations in samples collected from the Site of interest. Ideally, a facility-specific background data set should provide an equal representation of natural soil conditions identified at the Site, the key difference being the potential for a release.

As described in the S3TM, because different soil types may contain varying concentrations of naturally occurring constituents, separate facility-specific background concentrations should be developed for the each predominant lithologic unit present at an investigation site. Geologic cross sections for Plant 3 and Plant 6 were prepared and submitted as part of the Current Conditions Report (CCR), dated August 2008. These cross sections were reviewed to determine the general unconsolidated geologic units present across the Site.

As shown on the cross sections, much of the shallow (<10 feet deep) soil across the Site is identified as 'fill'. However, as observed on the individual boring logs from the CCR, the fill is primarily comprised of what is assumed to be native soil (i.e., sand, gravel, silt or clay). Therefore, background concentrations derived from native soil samples will be appropriate to compare to concentrations of samples collected from units identified as fill, unless the fill material is identified in the boring logs as non-native material (e.g., construction debris, etc.). Facility-specific background concentrations will not be developed for non-native material. Boring logs will be reviewed to determine the appropriate background concentration for comparison, which will depend on fill soil type.

The other predominant lithologic units shown on the cross sections, which can be found in the CCR, are identified as 'Sand with varying amounts of silt and gravel' and 'Silts, Clays and Clayey Sands'. It should be noted that clayey sands are, by definition, a sand and, for the purposes of this study, would be identified as a sand-rich unit. As described in the S3TM, to provide appropriate comparative concentrations, the samples for developing the background calculations must be collected from the same

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or similar lithologic units as the samples showing impact from Site releases. As shown in the cross sections, which can be found in the CCR. and common with glaciofluvial/glaciolacustrine environments, the lithologic units vary in depth, thickness and some are discontinuous across the Site. To determine the lithologic units to be used in developing the facility-specific background concentrations, Site investigation data were reviewed to determine the depth at which impact from Site releases has been observed. Based on soil data presented in the *CCR*, the majority of soil samples showing impact from Site releases are less than 30 feet below ground surface. Using the cross sections located in the CCR, the lithologic units generally present within the upper 30 feet are (shallow to deep): fill (typically clay, sometimes sand), an 'upper' clay-rich unit and at some locations a 'middle' sand-rich unit. The clay-rich and sand-rich units will hereafter be referred to as sand and clay units, respectively, based on the predominant grain size present in the soil matrix. It should be noted that some discontinuous gravel and silt layers are observed across the Site, but are relatively minor compared to the sand and clay units. It should also be noted that the sand unit is not consistently present within the upper 30 feet. If an impacted sample is comprised primarily of gravel or silt, professional judgment will be used to determine the appropriate soil type background concentration for comparison.

4.1.4.3.2 Number of Samples

Nine samples from each lithologic unit will be collected as recommended in the S3TM to provide an adequate data set for statistical evaluation and background concentration calculations. Samples collected from the same lithologic unit will be spaced at least 5 feet apart and will be collected from random depths. If the lithologic unit present within a boring is not thick enough to collect two discrete samples, additional borings may be completed to obtain the necessary samples.

4.1.4.3.3 Analytical Constituents

Samples collected for development of facility-background concentrations will be analyzed for naturally occurring metals consisting of:

- Arsenic
- Barium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead

- Manganese
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

Mercury and chromium in soil can be present in different species (compounds) and the Part 201 cleanup criteria are calculated using specific species of these constituents. However, since all available investigation sample data were reported as total, only total mercury and chromium will be analyzed as part of the facility-specific background soil analyses in order to directly compare sample results.

In accordance with MDEQ operation memo No. 2, Attachment 5, Collection of the Samples for Comparison to Generic Criteria, dated October, 2004, regarding comparison of soil quality to the direct contact and particulate soil ingestion exposure pathway cleanup criteria, lead analyses require separation of a sample into fine and coarse-grained portions and subsequent analysis of each of these portions. However, all available investigation data were reported as total lead. Therefore, samples analyzed for development of a facility-specific background concentration for lead will be reported as a total concentration.

Based on the historical sample results presented in the CCR, it is assumed that natural cyanide concentration are less than the reported detection limit of 0.1 mg/kg which is below the Part 201 State Default Background Level of 0.39 mg/kg presented in MDEQ RRD operational memo No. 1, part 201 Clean-up Criteria and Risk Based Screening Levels, dated March 2005. Therefore, a facility-specific background concentration for cyanide will not be developed.

4.1.4.4 Data Evaluation

Once sufficient data sets have been collected from the upper clay and middle sand units, the data sets will be evaluated to determine the appropriate approach for calculating a facility-specific background calculation. The data evaluation methods are described below.

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4.1.4.4.1 Censored Data

The first step in evaluating the data sets will be to determine the amount of censored data (data reported as a 'less than' value). As defined in the S3TM, for data sets with less than 50% censored data, a value of half the detection limit will be used in place of the censored data point to evaluate the data set and calculate the facility-specific background concentration.

For data sets with greater than 50% censored data or for data sets containing less than 50% censored data that do not follow a normal distribution or cannot be transformed to a normal distribution, a non-parametric approach will be used to develop the facility-specific background concentration. This is described in Section 4.4.

As described in Section 4.4, for data populations that consist of 100% censored data, the detection limit will represent the facility-specific background concentration.

4.1.4.4.2 Data Distribution

The data set distribution will be evaluated to determine the appropriate method for calculating a background concentration. As described in the S3TM, the Shapiro-Wilk test will be used to determine data distribution using a value of half the detection limit in place of all censored data. The Shapiro-Wilk test will be performed on both the raw and lognormally-transformed data sets to determine which distribution provides a better fit to the data set. If data sets fit both the normal and lognormal distribution patterns, the pattern associated with the higher test value will be chosen.

If, based on the Shapiro-Wilk test, a small percentage of data points appear to skew the data set away from a normal or lognormal distribution, these points may be further evaluated as potential outliers as described below.

If neither the normal or log- normal distributional assumptions are valid, then a non-parametric approach will be used.

4.1.4.4.3 Outliers

Data sets will be revised to determine if anomalous data points, or outliers, are present within the data set. Probability plots will be constructed using the data sets to provide an initial evaluation of data distribution (described below) and also to be used to identify outliers within the data set. Both the raw (untransformed) and lognormally-transformed data will be plotted. If outliers are suspected based on review of the raw and transformed data set probability plots, additional tests may be applied to the suspected outliers as described below. For data sets with greater than 50% censored

data, the tests described below cannot be applied and identification of outliers will depend on professional judgment based on the probability plots.

If one outlier is suspected based on review of the probability plot, Grubbs' Test will be applied to the data point using the procedure outlined in the S3TM. Half the detection limit will be substituted for all censored data. If found to be an outlier based on Grubbs' Test, the data point will be removed from the set.

If more than one outlier is suspected based on review of the probability plot, Dixon's Test will be applied to the points. Half the detection limit will be substituted for all censored data. If the point or points are found to be outliers based on Dixon's Test, the data point or points will be removed from the set.

It should be noted that high end outliers will be further evaluated to determine if the sample concentration can be attributed to possible impact from a release. Depending on the concentration, the entire data set will be reviewed to determine if the set is appropriate for use in calculating a background concentration.

In addition, upon identification of a suspected outlier, the original laboratory report will be reviewed to ensure that the value listed was not due to a transcription error or due to error in sample identification.

4.1.4.4.4 Background Concentration Calculation

As defined in the S3TM, the facility-specific background concentration is calculated as the mean concentration plus three time the standard deviation of the concentration assuming a normally or lognormally-distributed data set.

As described above, for data sets that are not normally distributed or cannot be transformed to normal distribution or data sets that consist of greater than 50% censored data, a non-parametric method will be used to calculate a facility-specific background concentration. As defined in the S3TM, the non-parametric prediction limit is set as the maximum concentration of the background data set as defined in the USEPA's *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities – Addendum to Interim Final Guidance* (USEPA, 1992). This method is applicable assuming that the maximum concentration in the data set is not an outlier based on the visual evaluation described in Section 4.3.

For data populations that consist of 100% censored data, the detection limit will represent the facility-specific background concentration assuming the detection limit is

consistent. Censored data points with relatively elevated reported detection limits will be removed as outliers.

4.1.4.5 Background Concentration Comparison

If the resulting facility-specific background concentrations is greater than the State Default Background Level presented in Op Memo 1, then the facility-specific background concentration will replace the State Default Background Level and any Op Memo 1 cleanup criterion of lower concentration.

If the resulting facility-specific background concentration is lower than the State Default Background Level, then the existing Op Memo 1 cleanup criteria will continue to serve as the comparative criteria.

As described in the S3TM, the calculated facility-specific background concentration represents an upper limit assuming natural variability within an uncontaminated area, not a mean concentration. Therefore, comparison of facility information to a facility-specific background concentration must be done on a point-by-point basis (i.e., facility data cannot be pooled prior to comparison).

4.1.5 Chromium Speciation Study

Soil chromium data collected at Lansing Plants 3 and 6 as part of site characterization activities has historically been reported as total chromium and has not been "speciated" according to the predominant chromium valence states, trivalent (III) and hexavalent (VI). The resulting total chromium concentrations were compared to the chromium VI Part 201 cleanup criteria (cleanup criteria) in accordance with MDEQ's Operational Memorandum No. 1 (Op Memo 1). Soil chromium data sets were evaluated to determine if additional sampling to characterize the chromium species present in soil would aid in simplifying the investigations. It was concluded the investigations could be simplified since the chromium VI cleanup criteria are significantly lower than the chromium III cleanup criteria, and, if the chromium present in soil were found to be primarily chromium III, several sample locations that currently show concentrations above the chromium VI cleanup criteria ("exceedances") may be eliminated from further investigative action.

It should be noted that soil chromium data from the RACER Trust Lansing Plant 2 was speciated and, therefore, additional samples are not proposed at this plant for the purpose of further characterizing the chromium species present. Also, due to the

historical plating operations at Plant 3 it is likely Chromium VI may be in the soils and groundwater and therefore speciation at Plant 3 is not being proposed at this time.

Similar to Plant 1, the majority of the metals exceedances in the Plants 6 data sets are a result of comparing total chromium concentrations to the chromium VI cleanup criteria. Chromium exceedances account for approximately 50% of the Plant 6 metals exceedances. Approximately 80% of the Plant 3 total chromium concentrations and approximately 85% of the Plant 6 total chromium concentration are less than the chromium III Statewide Default Background Level (SDBL) of 18 ppm. A select number of soil borings associated with AOIs that currently show soil chromium concentration exceedances at Plant 6 will be reoccupied and soil samples collected to speciate the total chromium concentration as chromium III and chromium VI. The resulting data would be used to determine if the chromium III SDBL would be appropriate for comparison to AOI data. The following table summarizes the locations where soil samples will be collected for chromium speciation:

AOI I.D.	Associated Soil Boring I.D.
6-18 Lead in Soil Area	P6-SB-12 P6-SB-13
6-47 Leaking Industrial Waste Line	P6-SB-4
6-48 Former Coal Pile	P6-SB-38 P6-SB-39
6-49 2ND Lacquer Booth	P6-SB-20
6-81 Former Paint Shop Area	P6-SB-35 P6-SB-37 P6-SB-36
6-82 Former Coal Chute Building	P6-SB-40
6-88 Parking Lot Exceedances	P6-SB-34

To determine if the chromium III cleanup criteria could be appropriate to use for comparison, a select number of soil borings associated with AOIs that currently show chromium concentration exceedances based on previous comparison to chromium VI cleanup criteria will be reoccupied. Soil and groundwater samples will be collected

from the depth intervals from which the initial samples were collected. The samples will be analyzed for both total chromium and speciated into chromium III and chromium VI. If the chromium present at these locations is found to be comprised entirely of chromium III, it would confirm that the chromium III SDBL is appropriate for comparison of the AOI data set to MDEQ Part 201 criteria. If chromium VI is present, the data will be further evaluated to determine if a total chromium concentration can be estimated above which chromium VI, in addition to chromium III, may be present in soil.

4.2 Investigation Methods

The field investigation methods described below will be completed in accordance with the Lansing Plants 2, 3, & 6, Industrial Land Quality Assurance Project Plan (QAPP), dated August 2011, and the Lansing Plants 2, 3, & 6, Industrial Land Field Sampling Plan (FSP), dated August 2011. These reports were submitted under separate cover.

4.2.1 Health and Safety Plan

Prior to initiating field work, a Health and Safety Plan (HASP) consistent with OSHA 29 CFR regulations will be prepared. All on-Site contractors need to be covered Under a HASP and are required to have 40-hour OSHA training. The HASP is intended to address all known hazards on the Site. The HASP will remain on Site at all times during the investigation, and will be updated as new hazards become known, if any.

4.2.2 Soil Borings

Approximately 124 soil borings will be advanced at the Site (maximum depth of 30 ft or 5 feet below the AOI) in accordance with the Field Sampling Plan (ARCADIS, August 2011). Continuous samples will be collected and screened for the presence of VOCs using a PID. Soil description and PID readings will be logged along with other pertinent observations including any visual evidence of contamination (e.g., staining, odor, sheen, etc.). Observations will be recorded in a field log book.

Soil samples for laboratory analysis will be collected as summarized in Table 1 and described in further detail in Section 4.2.4.

4.2.3 Groundwater Monitoring Well Installation

A total of 5 groundwater monitoring wells will be installed to define depth to groundwater and groundwater elevations at the Site during the initial phase of the RFI.

Four monitoring wells will be installed at Plant 2 along the property boundaries (Figure 2). One monitoring well will be installed at Plant 6 near AOI 6-47 (Figure 4).

Depths of wells will be determined based on historical information and on-site observations. However, it is anticipated that the wells will be completed to depths ranging from 20 to 30-feet bgs. The wells will be installed and constructed using the methods described in the FSP (ARCADIS, August 2011). During future drilling mobilization (i.e., second phase of investigation), deeper paired wells may be installed adjacent to these water table wells to assess the potential for vertical contaminant migration, depending on the results of this investigation.

4.2.4 Soil and Groundwater Sampling

Groundwater and soil sampling and subsequent laboratory analyses will be completed in accordance with the QAPP for this Site. Where applicable, these activities will comply with the guidance provided in the MDEQ's Remediation and Redevelopment Division (RRD) *Op Memo No. 2*. TCL, TAL, Target Detection Limits and Designated Analytical Methods are presented in Table 4.

As describe above soil samples for laboratory analysis will be collected based from the 0-2 feet bgs interval, the interval just above the groundwater water (if encountered) and based on field PID readings and visual observations, as indicated in Table 1. The samples will be field preserved with methanol for VOC analysis.

Prior to groundwater sampling, depth-to-groundwater measurements will be collected and monitoring wells will be checked for the presence of free product with a hydrocarbon/water interface probe. Groundwater samples will be collected from each new and existing monitoring well as indicated on Table 1 and 3 using the methods desrcibed in the FSP. Samples will be collected using low-flow sampling technique. Field readings of water quality parameters including; pH, specific conductivity, temperature, dissolved oxygen, oxidation-reduction potential, and turbidity will be recorded during purging to determine stabilization prior to sampling. If the turbidity prior to sampling is greater than 10 Nephelometric Turbidity Units, in addition to total metal samples filtered samples will also be obtained using a 0.45-micron disposable filter and submitted for dissolved metal analysis.

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4.2.5 Quality Control Samples

In accordance with MDEQ Operational Memo 2, Attachment 5, quality control (QC) samples will be collected for analysis to evaluate laboratory and field sampling precision. QC samples will be collected and analyzed in accordance with the associated QAPP, dated August 2011.

The QC samples will be submitted for analysis of the COCs listed in Section 4.2.6.

4.2.6 Analytical Constituents

Based on historical operations and investigation data, the COCs related to the previous site releases and former operations are VOCs, SVOCs, and metals. The list of COCs to be analyzed at each soil and groundwater sample is presented in Table 1.

4.2.7 Laboratory Analysis

Laboratory analyses will be completed in accordance with the USEPA's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) (USEPA, 1994) as defined in Op Memo 2, Attachment 1. The specific USEPA Methods are listed in Table 4.

Samples for chemical analysis will be submitted to Merit Laboratories Inc., located in East Lansing, Michigan.

4.2.8 Surveying

Boring and monitoring well locations will be surveyed by a licensed surveyor. Elevations will be surveyed using the North American Vertical Datum (1988) reference system. Horizontal locations will be surveyed to the Michigan South State Plane reference system.

4.2.9 Investigation Derived Waste Handling

Soil cuttings and water generated from the investigative activities will be placed into 55-gallon Michigan Department of Transportation (MDOT)-approved drums and properly labeled and secured. Samples will be collected from the drums for waste characterization. Upon characterization, the drums will be transported and appropriately disposed of by a licensed transport and disposal contractor.

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4.3 Data Evaluation

4.3.1 Relevant Exposure Pathways

To evaluate the groundwater and soil sample results, the relevant potential contaminant exposure pathways have been evaluated.

The nearest surface water (Grand River) is approximately 4/10 mile north of Plant 3. Because the direction of groundwater flow has not been clearly defined, and the extent of groundwater impacts have not been fully delineated, the GSI pathway remains relevant until investigative activities can demonstrate otherwise. Furthermore, although the shallow groundwater is not used as a drinking water supply, because there is no known property restriction on the use of groundwater in the area, the drinking water pathway also remains relevant at this time. However, because RACER Trust owns the property they will institute a deed restriction on the property to prohibit use of groundwater at the Site.

Based on Site conditions, the ambient air and direct contact exposure pathways are relevant. In addition, although there are currently no buildings on the property, the indoor air inhalation pathway is relevant to account for possible future development.

Based on current Site conditions and possible future use of the Site, the following exposure pathways are relevant:

- Indoor air inhalation (soil and groundwater)
- Ambient air inhalation (soil and groundwater)
- Particulate inhalation (soil)
- Direct contact (soil and groundwater).
- GSI protection and GSI (soil and groundwater , respectively)
- Drinking water protection and drinking water off-Site (soil and groundwater respectively)

An Ecological Risk Assessment is not anticipated for the Site at this time. The Site's current and anticipated future use is industrial. Ground surface is almost entirely

covered (eg. buildings, parking areas, etc.) or used for work related activities. Vegetation is ornamental and present in limited area and property does not include good habitat for ecological receptors.

4.3.2 Applicable Cleanup Criteria

Based on the relevant exposure pathways described above, the applicable Part 201 Cleanup Criteria were selected. The current Site zoning is industrial and will remain industrial for the foreseeable future. In addition, as owner of the Site, RACER Trust can institute a deed restriction on the property to prohibit future non-industrial/commercial use of the property. Therefore, at this time the applicable cleanup criteria for the Site are "Non-Residential" and the surrounding properties considered "Residential" as presented *Op Memo No. 1*.

Analytical results from the proposed soil and groundwater samples to be collected will be compared to the applicable Part 201 cleanup criteria to determine the extent of contamination. However, should it be appropriate, site-specific risk based cleanup criteria may be developed.

4.4 Reporting

Following each phase of investigation, a letter report and RFI Matrix will be prepared to present the key findings of the investigation. The document will include appropriated figures and tables that support the recommended actions for the next phase of investigation and will be submitted to MDEQ for review. See Project Schedule in Section 1.3.

5. References

USEPA, 1993, Preliminary Assessment/Visual Site Inspection (PA/VSI) Final Report; General Motors Corporation; Oldsmobile Division Plants 2 and 3; Lansing, Michigan, MID 980 700 827; September 1993

USEPA, 1992, Preliminary Assessment/Visual Site Inspection (PA/VSI) Final Report; General Motors Corporation; Lansing Car Assembly Body Plant (Plant 6); Lansing, Michigan, MID 005 356 928; October 1992

ARCADIS, 2008; Current Conditions Report (CCR), Lansing Plants 2, 3 & 6, Lansing, Michigan; August, 1, 2008

MDEQ Remediation and Redevelopment Division, 2002. Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria. 2002.

MDEQ Remediation and Redevelopment Division, 2004. Operational Memorandum No. 1. Part 201 Cleanup Criteria and Risk-Based Screening Levels. December 10, 2004.

MDEQ Remediation and Redevelopment Division, 2004. Operational Memorandum No. 2. Sampling and Analysis. October 22, 2004.

USEPA, 1994. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). September 1994.

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6. Certification Statement

In accordance with 40 CFR 270.11(d)(1) the following statement is provided;

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

Amy L. Hoeksema, C.P.G.
Certified Project Manager / Vice President

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Tables

TABLE 1
RACER TRUST LANSING PLANT 2
RFI WORK PLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL REPSONSE (RACER) TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building Number Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI	Proposed RFI Activities	Proposed Analytical Parameters Associated with RFI Samples	Soil Boring ID
2-1	SWMU 1 - Waste Water Treatment System/Former Coal Pile	Treats wastewater containing ELPO, oil, suspended solids, and heavy metal wastes. Prior to WWT, area was used to store coal.	South of Building 204	0	Waste Water/Coal	NA	NA	NA	Three soil borings with standard sampling as described in Note 1.	TAL Metals at the intervals described in Note 1. Additional analyses determined based on screening results.	P2-SB-27 P2-SB-28 P2-MW-2
2-6	SWMU 6 - Former Oily Waste Treatment System	Three 10,000-gallon concrete tanks, two treatment tanks, two gravity separators, chemical storage tanks	North of Building 244	<15	Oily Waste	NA	NA	NA	Two soil boring with standard sampling as described in Note 1.	TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1.	P2-SB-11 P2-SB-12
2-7	SWMU 7 - Building 242 Former Drum Storage Area	Likely stored paint waste, spent solvents, and used oil. Stored PCB waste.	Inside the North End of Building 242	10	Waste Paints, Waste Solvents, Used Oil, PCB Wastes	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCS, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1.	P2-SB-30, P2-MW-1
2-8	SWMU 8 - Former Outdoor Storage Area	Likely stored waste paint, spent solvent, and used oils on a concrete pad.	Northwest of Building 241	0	Waste Paints, Waste Solvents, Used Oil	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1.	P2-SB-33
2-11	SWMU 11 - Former Gondola Storage Area	Two paved outdoor areas; stored 1-to 3-cubic yard steel gondolas	Northwest of Building 206C	0	Oil Filters, Air Filters, Oil and Grease	NA	NA	NA	One soil boring in two separate areas (one outside building 206 and one outside building 237) with standard sampling as described in Note 1.	TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1.	P2-SB-35; P2-SB-34, P2-MW-3
2-12	SWMU 12 - Former Empty Container Storage Area	Empty 55-gallon drums generated from facility operations	Southwest of Building 241	0	Empty 55 Gallon Drums	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1.	P2-SB-31
2-14	SWMU 14 - Former Scrap Metal Storage Areas	Stored non-hazardous scrap metal (machining chips, turnings, trimmings, and scrap parts)	West of Building 241 and East of Building 206	0	Scrap Metal	NA	NA	NA	One soil boring in two separate areas (one outside building 203 and one outside building 240) with standard sampling as described in Note 1.	TCL SVOCs and TAL metals at the intervals described in Note 1.	P2-SB-32; P2-SB-29
2-15	AOC 1 - Building 225 UST Farm	Eight former 30,000-gallon tanks. Removed 1989. Closure report submitted 10/1/96.	South of Building 225	<15	Used Oil, Quench Oil, Cutting Oil and Lube Oil	1,1,1-Trichloroethane	B-7 7.5-15(ft BGS)	310 {EGH}	- Reoccupy B-2 with standard sampling as described in Note 1. - Reoccupy B-7 with standard sampling as described in Note 1. - Add one boring east of boring B-7 with standard sampling as described in Note 1. - Convert the boring east of B-7 into a monitoring well in the upper most aquifer.	TCL VOCS, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1.	B-2 B-7 P2-MW-4
						1,1-Dichloroethene	B-7 7.5-15(ft BGS)	16 {ABEGHI}			
						1,2-Dichlorobenzene	B-7 0-7.5(ft BGS)	0.75 {G}			
						1,4-Dichlorobenzene	B-7 0-7.5(ft BGS)	0.5 {G}			
						Benzene	B-2 0-7.5(ft BGS)	2.5 {EH}			
						Ethylbenzene	TP-4 2.5-2.5(ft BGS)	1.3 {G}			
						Tetrachloroethene	B-2 0-7.5(ft BGS)	1.5 {EG}			
						Toluene	B-7 7.5-15(ft BGS)	3.9 {G}			
						Trichloroethene	B-7 7.5-15(ft BGS)	0.14 {E}			
						Xylene (total)	TP-4 2.5-2.5(ft BGS)	4.9 {G}			
2-16	AOC 3 - Building 250 UST Farm	2-20,000 gallon tanks that stored gasoline and diesel East of Building 250. 1-1,500 gallon tank that stored used oil located Southeast of Building 250. 1-12,000 gallon tank that stored heating oil located West of Building 250. All UST's removed in 1990 and 1991. Closure report submitted on 10/01/1996. Restrictive Covenant filed with Register of Deeds in 2003.	East of Building 250	<15	Gasoline, Diesel, and Used Oil				Collect groundwater sample from existing monitoring well MW-2 down gradient of former UST farm..	TCL VOCS, TCL SVOCs, Lead and Chromium (VI)	
2-23	Acid House and Two Storage Tanks of Unknown Operations	Two storage tanks with unknown contents were located immediately south of acid house.	West of Building 206, North of Basketball Court	15	Unknown (Likely Acids)	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCS, TCL SVOCs, TAL metals at the intervals described in Note 1.	P2-SB-36
2-52	Pickling Room	Concrete wall and acid-resistant floor	Building 203 A3	0	Unknown (Likely Acids)	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCS, TCL SVOCs, TAL metals at the intervals described in Note 1.	P2-SB-37
ID 2-26	Quench Oil Operations	Quench Oil Pits	Building 206C B8 and C8	<10	Quench Oil	NA	NA	NA	Two soil boring with standard sampling as described in Note 1.	TCL VOCS, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1.	P2-SB-13; P2-SB-14
		Quench Oil Tank	Building 206 B4								
		Tank, Unknown	Building 206 A4								
		Water Quench Pit	Building 206 B3-4								
		Quench Oil Settling Tanks	Building 206 C3-4								
		Type B sumps	Building 206 C4-5								
ID 2-27	Paint Shop Sumps and Trenches	Three Sumps are 3'x3'x3' each	Buildings 206 and 237 B1-3	3	Paint Shop Liquid Wastes	NA			One soil boring with standard sampling as described in Note 1.	TCL VOCs at the intervals described in Note 1. Additional analyses determined based on screening results.	P2-SB-22

TABLE 1
RACER TRUST LANSING PLANT 2
RFI WORK PLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL REPSONSE (RACER) TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building Number Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI	Proposed RFI Activities	Proposed Analytical Parameters Associated with RFI Samples	Soil Boring ID
ID 2-31	Press Pit and Associated Sumps, Pits, and Trenches	Two 3'x3' oil containment sumps under hydraulic presses	Building 207 A4-7	<15	Used Hydraulic Oil	NA	NA	NA	Four soil borings with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL Metals and PCBs.	P2-SB-18;
		Press pit sumps									
ID 2-32		2 oil containment sumps, 3'x3' and trench	Building 207 B7-8	3	Used Oil						P2-SB-19;
ID 2-33		2 oily waste line manhole sumps	Building 207 A5	<10	Oily Waste						P2-SB-20;
ID 2-34		2 Press Pits	Building 207 B5-6	<15	Used Hydraulic Oil						P2-SB-21
ID 2-35		6" deep Tramp Oil trenches	Building 207 B1-4	<4	Used Tramp Oil						
		3' deep Tramp Oil sumps									
ID 2-49		Trenches and Hammer Pits Associated with Press Operations	Building 207 A2-11	<10	Unknown						
ID 2-36	Oil Separator and Sump	10" oily waste line runs to separator.	North Side of Building 231	<10	Used Oil	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, and PCBs at the intervals described in Note 1.	P2-SB-24
ID 2-37	Press Pits	Concrete press pits.	Building 242 C2-5	<15	Used Hydraulic Oil	NA	NA	NA	Two soil borings with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL Metals, PCBs. If field screening is negative 1 only Boring will be sampled.	P2-SB-26;
		One sump associated with presses.	Building 242 B2								P2-SB-23
ID 2-38	Scrap Steel Operations Pits	Scrap Steel Pits, 8' Deep	Building 242 A3-5	<15	Scrap Steel and Oily Waste	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL Metals, and PCBs at the intervals described in Note 1.	P2-SB-17
		Scrap Pit oily waste sump	Building 242 B2								
ID 2-39	Fuel Oil Pump House and Tank Farm	Eight oil storage tanks, 10.5' in diameter. Trenching associated with tanks. Three truck unloading stations associated with tanks	Building 229	<15	Fuel Oil	NA	NA	NA	Three soil borings with standard sampling as described in Note 1. The three borings are to be located outside of the unit with one placed along the west edge and two borings located along the east edge.	TCL VOCs and TCL SVOCs at the intervals described in Note 1.	P2-SB-5 P2-SB-3 P2-SB-4
ID 2-55	PCB Storage Deck	10'x12' with one 1' deep sump in the center	Building 208A D1	1	PCBs	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	PCBs at the intervals described in Note 1., Additional analyses determined based on screening results.	P2-SB-16
ID 2-59	Press Pits	8' 4" deep, 21' by 35' and 67' by 25'	Building 201 D3, E3, F3, D-F/21-22, and K-M/21-22	9	Used Hydraulic Oil	NA	NA	NA	Two soil borings with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, and TAL Metals at the intervals described in Note 1.	P2-SB-15 P2-SB-25

Identification	Title	Description/Components	Location Building Number Column/Bay	Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI	Proposed RFI Activities	Proposed Analytical Parameters Associated with RFI Samples	Soil Boring ID
Misc Item Data Gap Filler Borings	IDs: 2-20, 2-21, 2-22, 2-42, 2-43, 2-44, 2-46, 2-47, 2-48, 2-56, 2-57, 2-58, 2-59, 2-60, 2-63, 2-64,	SEE TABLE 2 FOR DESCRIPTIONS	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	NA	NA	NA	- Install a total of 7 borings with standard sampling as described in Note 1. Install 1 boring approximately 60' east of 2-20; 1 boring approximately 125' west of the center of 2-60; 1 boring approximately 15' south of 2-64; 1 boring near the north end of 2-47; 1 boring approximately 50' east of the middle of 2-50; 1 boring approximately 75' east of the middle of 2-47; 1 boring near the east end of 2-42. See Figure 5 for additional location information.	TCL VOCs, TCL SVOCs, and TAL Metals at the intervals described in Note 1.	P2-SB-8 P2-SB-1 P2-SB-2 P2-SB-9 P2-SB-10 P2-SB-6 P2-SB-7

Footnotes

Note 1: Advance borings to 5' below the depth of the AOI and collect soil samples continuously for screening purposes. If groundwater is encountered prior to the bottom of the AOI a temp well will be installed and a grab water sample will be collected. In general, soil samples will be collected for analysis at the surface (0'-2'), at the interval with the highest PID (if none present then at the bottom of the AOI), and at the interval directly above the water table/bedrock. If the bottom of the AOI is below the water table a temp well will be installed, with the screen placed at the depth of the AOI, and a grab water sample will be collected to replace the soil sample from the bottom of the AOI. If the depth of the AOI in unknown the boring will be advanced to 30' bgs or until groundwater is encountered unless evidence suggests the boring should be advanced deeper.

NA - not applicable
Csat - Part 201 Soil Saturation Concentration Screening Levels
DC - Direct Contact Criteria
DWP - Drinking Water Protection Criteria
GSIP - Groundwater Surface Water Interface Protection
PCBs - Polychlorinated biphenyls
PSIC - Particulate Soil Inhalation Criteria
SVIIC - Soil Volatilization to Indoor Air Inhalation Criteria
SVOCs - Semi-Volatile Organic Compounds
VOCs - Volatile Organic Compounds
VSIC - Infinite Source Volatile Soil Inhalation Criteria
RWC - Risk-based Redevelopment Worker Contact
TAL - target analyte list (for metals) - note: will include speciation of chromium (trivalent and hexavalent) where noted above
TCL - target compound list (for VOCs and SVOCs)

Sample Concentration Exceedance Codes:
{A} - MDEQ Part 201 Industrial SVIIC
{B} - MDEQ Part 201 Industrial VSIC
{C} - MDEQ Part 201 Industrial PSIC
{D} - MDEQ Part 201 Industrial DC
{E} - MDEQ Part 201 Residential DWP
{F} - Risk-based Redevelopment Worker Contact
{G} - MDEQ Part 201 GSIP
{H} - MDEQ Part 201 Residential SVIIC
{I} - MDEQ Part 201 Residential VSIC
{J} - MDEQ Part 201 Residential PSIC
{K} - MDEQ Part 201 Residential DC
{L} - MDEQ Part 201 Soil Saturation Concentration Screening Levels

TABLE 1
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building Number Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated with RFI Samples	Soil Boring ID
3-2	SWMU 16 - Oily Waste Treatment System	Treated oily wastewater; 2 concrete used oil holding tanks, 2 concrete oily sludge tanks	Northeast Portion of Building 301A	20	Oil Waste	NA	NA	NA	- Install three soil boring with standard sampling as described in Note 1. - One soil boring to be located along North end of the unit - One soil boring to be located along East end of the unit. - One boring to re-occupy boring 27 location.	TCL VOCs, TCL SVOCs, TAL Metals, and PCBs	P3-SB-5 P3-SB-6 boring 27
3-3	SWMU 17 - Scrap Metal Pits and Bins	Scrap Yard Dock Area, 24 Scrap Pits (10' by 10' by 13'), 4,000 Gallon Soluble Oil Sump Pit, 2,000 Gallon Cutting Oil Sump Pit	Outside of Building 301, West of RR Tracks and East of Building 301, A8-11	10	Scrap Metal	NA	NA	NA	Two soil borings with standard sampling as described in Note 1.	TCL SVOCs and TAL metals at the intervals described in Note 1. Additional analyses determined based on screening results. See Table 3 for groundwater sampling plan.	P3-SB-28, P3-SB-29
3-4	SWMU 18 - Machining Residue Storage Area	20 Cubic Yard Roll-off Box located .	East of scrap metal conveyor	0	Machining Residue	NA	NA	NA	One soil borings with standard sampling as described in Note 1.	TCL SVOCs and TAL metals at the intervals described in Note 1. Additional analyses determined based on screening results. See Table 3 for groundwater sampling plan.	P3-SB-30
3-5	SWMU 19 - Clarifier	Circular concrete below-grade clarifier	South of Willow Road	<15	Storm Water, Oil and Sediments	NA	NA	NA	- Inspect the integrity of the tank during ongoing demolition activities. Currently scheduled for Summer 2011.	NA	
3-6	SWMU 20 - Former Electroplating Waste Treatment System	Treated electroplating wastes (copper, nickel, and chromium). Included an Acid Wash Tank, Sludge Storage Tank, Waste Acid Storage Tank,	Building 301A Whole Building Buildings 301A and 301D Whole Building	10	Electroplating Waste	Chromium Total	SB#2 3.5-7(ft BGS)	20 {G}	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells as described below to address the DWP exceedances -Assess background metals concentrations. - Re-occupy boring location 27 (see AOI 3-2 above)	- See Note 2 for outfall sample analyses. - See Table 3 for groundwater sample analyses. - See AOI 3-2 above for re-occupation of boring 27 analysis	
						Nickel	SB#2 0-3.5(ft BGS)	6300 {EG}			
3-9	AOC 2 - Building 301 UST Farm	6 USTs, stored polymer, sulfuric acid, soluble oil, gasoline, hydraulic oil, and APCO cleaner; Were removed in 1989.	East of Building 301	<15	Polymer, Sulfuric Acid, Soluble Oil, Gasoline, Hydraulic Oil, APCO Cleaner	Benzene	SB2 0-7(ft BGS)	5.7 {EGH}	Reoccupy SB-2 and SS-15 with standard sampling as described in Note 1.	TLC VOCs, TCL SVOCs, TAL Metals and PCBs. Additional analyses determined based on screening results. See Table 3 for groundwater sampling plan.	SB-2 (Original) SS-15
						Ethylbenzene	SB3 0-7(ft BGS)	5.8 {EG}			
						Toluene	SB3 0-7(ft BGS)	20 {EG}			
						Vinyl chloride	SB3 7-13(ft BGS)	0.19 {E}			
						Xylene (total)	SB1 1-7(ft BGS)	32 {EG}			
3-10	AOC 4 - Former Electroplating Area	(1) Electroplating operations (2) New and Reworked Storage Tanks, Chromic Acid Reclaim, 7' diameter by 9' tall (3) 17 Acid Copper Plating Tanks (4) Sludge Sump Under Nickel Storage Tank, 1350 Gallons (5) 3 Washwater Tanks (1900 gal each) in Plating Area (6) Nickel Plating Tanks 1, 2, 3, 4, 6, 7, 8, and 9 (7) Copper Buffing Wash and Rinse Tanks (8) Bumper Plating Sumps (9) Dur'ni Nickel Operations Area, Tanks, Sumps and Drain Deck	North-Central Portion of Building 301	15	Electroplating Materials	Arsenic	13 43.5-45(ft BGS)	42 {EK}	- Reoccupy locations CH-13, CH-14 and CH-15 and collect samples with standard sampling as described in Note 1. - Collect groundwater samples from existing monitoring well MW-91-2 to assess the DWP exceedances -Assess French Drain to determine whether a viable sampling point (at north end) and/or interim measure. -Assess background metals concentrations.	- Chromium for locations CH-13, CH-14 and CH-15 - See Table 3 for groundwater sample analyses. - TCL VOCs, SVOCs and TAL Metals - Hexavalent Chromium at those boring locations where a groundwater sample is collected	boring 27 CH-13 CH-14 CH-15
						Chromium Total	CH-15 15.5-18(ft BGS)	4600 {CEFGJK}			
						Copper	G1 2-2(ft BGS)	1500 {G}			
						Cyanide (total)	I10 6-6(ft BGS)	2070 {CDEGJK}			
						Nickel	G12 15-15(ft BGS)	12000 {EFG}			
3-11	SWMU 14 - Former Scrap Metal Storage Areas	Stored scrap metal	West of Building 304 and East of Building 302	<5	Scrap Metal	NA	NA	NA	Four soil borings with standard sampling as described in Note 1 (two near building 302, two near building 304).	TCL SVOCs and TAL metals at the intervals described in Note 1. See Table 3 for GW plan.	P3-SB-24, P3-SB-31
ID 3-13	Henry Filter Pits and Trenching	Coolant Trench and Sump, 1' 2" wide sluice trench	Building 302A C14	<15	Used Hydraulic Oil	NA	NA	NA	One soil borings with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-23
		Coolant Trenching	Building 302A E14 and F14								
		Henry Filter Pits and Trenching	Building 302A A-R/12-15								
ID 3-15	Oil Sump for Crank Shaft Operations	N/A	Building 302A K12	<15	Used Oil	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-26
ID 3-17	Broach Machine Filter Pit	9' by 20' by 9' pit	Building 302A A13	9	Used Oil	NA	NA	NA	One soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs, TAL metals, and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-25

TABLE 1
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building Number Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated with RFI Samples	Soil Boring ID
ID 3-51	Building 304 and 305 Press Pit Operations	Danly Press Utility Trench	Building 304, B1-3	<25	Used Hydraulic Oil	NA	NA	NA	- Ten soil borings with standard sampling as described in Note 1. - 8 of the boring to be inside the structure targeted at the former press pit sumps. - Two of the borings to be located outside of the structure along the edges. - If concrete is to thick to bore through then add an additional 4 to 5 soil borings outside along the edges. - Three of the borings to be completed as monitoring wells during the next phase of investigations.	- TCL VOCs, TCL SVOCs and TAL metals and PCBs at the intervals described in Note 1. - See Table 3 for groundwater sampling plan.	P3-SB-18 P3-SB-19 P3-SB-17 P3-SB-16 P3-SB-27 P3-SB-11 P3-SB-12 P3-SB-22 P3-SB-13 P3-SB-21
		Press Pits Sump (12" deep)	Building 304, B6 and C6								
		Four Danly Surge Tanks (16" diameter)	Building 304, C5-9								
		Scrap Pit	Building 304, F4 *								
		Blanker Pits and Sumps (Eight 2'x2'x2' deep sumps; Six 1'x1'x1' deep sumps)	Building 304, A-E/2-3 *								
		Auxiliary Waste Sump	Building 304, B8 *								
		Oil Spill Trench Under 240 Press Line	Building 304, B4-8								
		Press Pit, Trenching and Sump	Building 304, E2 and E3								
		Panel Die Tag Out Line Oil Trench and Sump	Building 304, E4-7 *								
		Press Pits, Sumps and Trenches	Building 304, D-E/2-3								
		E Press Line Sumps and Trenches	Building 305, E4-10 *								
		Press Pit and Sump	Building 305, A8-10 *								
		Press Pit	Building 305, A6-8								
		Hood Press Line Oil Trench and Sumps	Building 305, A-B/9-13								
		Danly Press Pit, Trenching and Sump	Building 305, A2 and A3								
		Shock Tower Press Sumps and Trenching	Building 305, A4-6								
		Fender Press Line Trench and Sumps	Building 305, D3-9 *								
		Clearing Toggle Press Sump	Building 305, A16								
		Try Out Press and Sump and Trench	Building 305, A13-15								
		Syncromatic Press Line Sumps and Trenches	Building 305, A6-12								
		Bumper Reinforcement Press Line Sumps and Trenches	Building 305, C-D/3-8								
		Rersion Presses Sumps and Trenches	Building 305, A-B/1-3 *								
ID 3-54	Sump	Sump pit with sump pump, unknown use	Building 304, E8	<5	Unknown	NA	NA	NA	- Complete one soil boring as described in Note 1.	TCL VOCs, TCL SVOCs, TAL Metals, PCBs	P3-SB-20
Identification	**Title**	**Description/Components**	**Location Building Number Column/Bay**	**Approximate Depth Below Grade (ft)**	**Materials Handled**	**Constituents Detected above Part 201 Cleanup Criteria**	**Associated Soil Boring**	**Maximum Concentration Observed in AOI (mg/kg)**	**Proposed RFI Activities**	**Proposed Analytical Parameters Associated with RFI Samples**	**Soil Boring ID**
Misc Item Data Gap Filler Borings	IDs: 3-33, 3-34, 3-38, 3-40, 3-41, 3-42, 3-43, 3-44, 3-45, 3-46, 3-47, 3-48, 3-51, 3-52, 3-53, 3-54, 3-55, 3-56, 3-57, 3-58, 3-59, 3-60, 3-61, 3-62, and 3-63	SEE TABLE 2 FOR DESCRIPTIONS	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	NA	NA	NA	- Complete 2 soil borings with standard sampling as described in Note 1. Locate borings approximately 75' South of item 3-63 and one boring approximately 300' South of item 3-42 as shown on Figure 7.	TCL VOCs, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-14 P3-SB-15
Misc Item Data Gap Filler Borings	IDs: 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-24, 3-25, 3 -26, 3-27, 3-28, 3-29, 3-30, 3-36, 3-38, 3-49	SEE TABLE 2 FOR DESCRIPTIONS	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	NA	NA	NA	- Complete 3 soil borings with standard sampling as described in Note 1. Locate one boring East of item 3-27, locate one boring West of item 3-25 and locate one boring East of item 3-36 as shown on Figure 7.	TCL VOCs, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-8 P3-SB-9 P3-SB-10
Misc Item Data Gap Filler Borings	IDs: 3-35, 3-37 and 3-50	SEE TABLE 2 FOR DESCRIPTIONS	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	NA	NA	NA	- Complete one soil borings with standard sampling as described in Note 1. Locate one boring near item 3-50 as shown on Figure 7.	TCL VOCs, TCL SVOCs, TAL metals and PCBs at the intervals described in Note 1. See Table 3 for groundwater sampling plan.	P3-SB-7
Background Sampling	NA	NA	NA	NA	NA	NA	NA	NA	- Complete 4 borings in the field and parking lot areas located along the North end of property as shown on Figure 7. Complete borings as described in Note 1.	TAL metals for each boring location	P3-SB-1 P3-SB-2 P3-SB-3 P3-SB-4

Footnotes:

Note 1: Advance borings to 5' below the depth of the AOI and collect soil samples continuously for screening purposes. If groundwater is encountered prior to the bottom of the AOI a temp well will be installed and a grab water sample will be collected. In general, soil samples will be collected for analysis at the surface (0'-2'), at the interval with the highest PID (if none present then at the bottom of the AOI), and at the interval directly above the water table/bedrock. If the bottom of the AOI is below the water table a temp well will be installed, with the screen placed at the depth of the AOI, and a grab water sample will be collected to replace the soil sample from the bottom of the AOI. If the depth of the AOI in unknown the boring will be advanced to 30' bgs or until groundwater is encountered unless evidence suggests the boring should be advanced deeper.

Note 2: The outfall samples will be analyzed for all constituents that show a GSIP exceedance. This consists of arsenic, chromium (speciated), cyanide and nickel. Additional constituents may be added based on the results of the proposed soil sampling activities.

NA - not applicable
Csat - Part 201 Soil Saturation Concentration Screening Levels
DC - Direct Contact Criteria
DWP - Drinking Water Protection Criteria
GSIP - Groundwater Surface Water Interface Protection
PCBs - Polychlorinated biphenyls
PSIC - Particulate Soil Inhalation Criteria
SVIIC - Soil Volatilization to Indoor Air Inhalation Criteria
SVOCs - Semi-Volatile Organic Compounds
VOCs - Volatile Organic Compounds
VSIC - Infinite Source Volatile Soil Inhalation Criteria
RC - restrictive covenant
RWC - Risk-based Redevelopment Worker Contact
TAL - target analyte list (for metals) - note: will include speciation of chromium (trivalent and hexavalent) where noted above
TCL - target compound list (for VOCs and SVOCs)

Sample Concentration Exceedance Codes:

{A} - MDEQ Part 201 Industrial SVIIC
{B} - MDEQ Part 201 Industrial VSIC
{C} - MDEQ Part 201 Industrial PSIC
{D} - MDEQ Part 201 Industrial DC
{E} - MDEQ Part 201 Residential DWP
{F} - Risk-based Redevelopment Worker Contact
{G} - MDEQ Part 201 GSIP
{H} - MDEQ Part 201 Residential SVIIC
{I} - MDEQ Part 201 Residential VSIC
{J} - MDEQ Part 201 Residential PSIC
{K} - MDEQ Part 201 Residential DC
{L} - MDEQ Part 201 Soil Saturation Concentration Screening Levels

TABLE 1
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building # Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated With RFI Samples[1]	Soil Boring ID
6-1	SWMU 1 - Original Hazardous Waste Storage Area	40'x100' concrete area surrounded by trench; stored ELPO and paint-related wastes; Removed and replaced by Air Pollution Control System (ACSP) Incinerator	North of Building 22	5	ELPO and Paint Related Wastes	NA	NA	NA	Two soil boring with standard sampling as described in Note 1.	TCL VOCs, TCL SVOCs and TAL metals and PCBs at the intervals described in Note 1.	P6-SB-14, P6-SB-15
6-10	SWMU 10 - Non-Hazardous Waste Consolidation Area	40'x80' roofed area on a concrete base; managed epoxy purge, grinding waste, oven condensate, trim purge, and used hydraulic oil	South of Building 22	0	Epoxy Purge, Grinding Waste, Oven Condensate, Trim Purge and Used Hydraulic Oil	NA	NA	NA	Two soil borings with standard sampling as described in Note 1.	Two soil boring will be analyzed based on field screening for TCL SVOCs and TAL metals at the intervals described in Note 1.	P6-SB-28 P6-SB-29
6-11	SWMU 11 -- Wastewater Cistern (Industrial waste treatment pit)	100,000 gallons; managed wash water from rinsing automobile bodies and the overflow of phosphoric acid from phosphoric acid pickling tanks	Building 18 PP-QQ/11-12	<20	Automobile Body Wash Water and Phosphoric Acid	NA	NA	NA	Two soil boring with standard sampling as described in Note 1.	TAL Metals at the intervals described in Note 1, additional analyses determined based on screening results.	P6-SB-7 P6-SB-8
6-14	SWMU 14 - Oil Accumulation Area	55-gallon steel drums; stored waste hydraulic oil	Building 8	0	Used Hydraulic Oil				- Collect one soil boring with standard sampling as described in Note 1	TCL VOCs, TCL SVOCs and TAL Metals, PCBs at the intervals described in Note 1.	P6-SB-1
6-16 6-33	AOC 1 - Tanks 5 and 6; Tank Farm	Tank 5: 4,000-gallon steel diesel fuel storage tank; Tank 6: 15,000-gallon steel gasoline storage tank 16' bgs; stores purge thinner/diesel fuel; Double walled tank with leak detection system; Installed in the same location as AOI 6-16	South of Building 23	15	Diesel and Gasoline, Metals Purge Thinner and Diesel Fuel	Ethylbenzene	MWBP-12 9-11(ft BGS)	3.4 {EG}	- Collect groundwater samples from existing monitoring wells to assess the GSIP and DWP exceedances. Additional monitoring wells may be installed in future phases of investigation based on findings. - Re-occupy SW-4-UST-5-6 with standard sampling as described in Note 1.	- See Table 3 for groundwater sampling plan. - For SW-4-UST-5-6 sample for TCL VOCs, SVOCs and lead at the intervals described in Note 1.	P6-SB-43 (SW-4-UST5-6)
						Xylene (total)	SW-4 0-0(unknown)	99 {EFG}			
6-17 (formerly 6-4, 6-8)	AOC 2 - Tanks 1 (SWMU 4) and 3 (SWMU 8)	Tank 1 (SWMU 4): 7,500-gallon carbon steel virgin thinner storage tank; Tank 3 (SWMU 8): 12,000-gallon carbon steel virgin thinner storage tank	Southwest of Building 16	15	Virgin Thinner	Benzene	SA 4-3 12-14(ft BGS)	0.2 J {E}	- Collect groundwater samples from existing and proposed monitoring wells to assess the GSIP and DWP exceedances. - Re-occupy SA 4-3 and VEW-5 with standard sampling as described in Note 1. - Complete a boring south of the AOI to delineate the horizontal extent of VOC exceedances using the standard sampling as described in Note 1.	- See Table 3 for groundwater sampling plan. - TCL VOCs for soil samples at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-42 (SA 4-3), VEW-5 P6-SB-33
						Ethylbenzene	SA 4-3 12-14(ft BGS)	23.5 {EG}			
						1,1-Dichloroethene	VEW-5 8-10(ft BGS)	0.5 {AEH}			
						Naphthalene	SB-2 9-11(ft BGS)	9.2 {G}			
						Trichloroethene	VEW-5 8-10(ft BGS)	1.2 {E}			
						Xylene (total)	B-96-B 9-11(ft BGS)	299 {ADEFGHKL}			
6-18	Lead in Soil Area	Lead smelter	West of Buildings 10, 11, 12, 13 and15	0	Metals	Chromium Total	SA 12-2 10-12(ft BGS)	25.7 {G}	- Collect groundwater samples from existing monitoring wells as described in Table 3 to assess the GSIP and DWP exceedances and assess background metals concentrations. - Collect two soil boring with standard sampling as described in Note 1. - If storm sewer is found to be at or below water table then collect samples from the storm sewer downstream (upstream if present) of the site and address GSIP exceedances during future investigations.	- See Table 3 for groundwater sampling plan. - TCL VOCs, TCL SVOCs and metals - TBD	P6-SB-13 P6-SB-12
						Cobalt	SA 12-2 10-12(ft BGS)	22.8 {EG}			
						Lead	E-25 0-2(ft BGS)	4030 {DEK}			
						Manganese	SA 12-1 9-11(ft BGS)	548 {EG}			
6-19	Process Waste Tunnel	Runs underneath Building 28 and 21; exits Site to the west and continues to GM Lansing Plant 2	West of the Power Plant	15	Process Waste	Chromium Total	SA 10-3 14-16(ft BGS)	14.7 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP and DWP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Chromium speciation.	
6-30	New Weld Pit	18'x50'x4'	Building 18 QQ8-10	4	Metals	Chromium Total	SA 29-2 8-10(ft BGS)	5.6 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP and DWP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation.	
6-43	Stormceptor	Includes stormceptor oil and sediment separator	West of Building 15	15	Storm Water, Oil and Sediments	Chromium Total	SA 13-1 7-9(ft BGS)	5.5 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP and DWP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation.	
6-47	Leaking Industrial Waste Line	N/A	Building 16 ZZ115	15	Process Waste	Chromium Total	SA 4-4 14-16(ft BGS)	8.9 {G}	- Collect groundwater samples from existing and proposed monitoring wells to assess the GSIP and DWP exceedances and assess background metals concentrations. - Collect one soil boring with standard sampling as described in Note 1.	- See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation. - TCL VOCs, SVOCs and metals	P6-SB-4
						Selenium	SA 4-4 14-16(ft BGS)	1.26 {G}			

TABLE 1
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building # Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated With RFI Samples[1]	Soil Boring ID
6-48	Former Coal Pile	Was replaced by Bldg. 28	Building 28 Whole Building	0	Coal	Chromium Total	SA 6-12 8-10(ft BGS)	16.1 {G}	-Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances. - Total of 2 soil borings. Reoccupy soil borings SA6-7 and SA6-12 to evaluate the DWP exceedances using the standard sampling as described in Note 1 and assess background metals concentrations..	See Table 3 for groundwater sampling plan. - Cobalt and manganese for soil samples and chromium if background data still exceeded at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-38, P6-SB-39
						Cobalt	SA 6-12 8-10(ft BGS)	8.35 {E}			
						Manganese	SA 6-7 4-6(ft BGS)	601 {EG}			
6-49	2nd Lacquer Booth	Associated with former paint shop	Building 10 Q-R/34-36	5	Paint and Thinner	Chromium Total	SA 22-3 2-4(ft BGS)	10.6 {G}	One soil boring with standard sampling as described in Note 1 and assess background metals concentrations.	TCL VOCs and TAL Metals at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-20
						Selenium	SA 22-2 2-4(ft BGS)	1.01 {G}			
6-59	Stormceptor	Includes stormceptor oil and sediment separator	South of Building 23	15	Storm Water	Chromium Total	SA 3-1 14-16(ft BGS)	3.8 {G}	Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation.	
6-60	Paint Mix Room	N/A	Building 21 EEE-KKK/8-103	0	Paint and Thinner	Acetone	SA 5-5 8-10(ft BGS)	35 {E}	- Collect groundwater samples from existing monitoring wells to assess the GSIP and DWP exceedances. - Total of 4 borings. Complete borings to the north, east and west of SA-5-5 as well as reoccupy SA5-5 to horizontally and vertically delineate the DWP exceedances using standard sampling described in Note 1 and assess background metals concentrations.	- See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation. - TCL VOCs for soil samples at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-30, P6-SB-31, P6-SB-32, P6-SB-41 (SA 5-5)
						Chromium Total	SA 5-1 8-10(ft BGS)	5.9 {G}			
						Ethylbenzene	SA 5-5 8-10(ft BGS)	6.1 {EG}			
						Xylene (total)	SA 5-5 8-10(ft BGS)	34.5 {EG}			
6-63	Sump	N/A	Building 20 NN21	5	Unknown	Chromium Total	SA 32-1 8-10(ft BGS)	9 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation.	
6-78	Former PCB Transformers	N/A	East of the Power Plant	0	PCBs Oil	Chromium Total	SA 7-9 7-9(ft BGS)	17.1 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances and assess background metals concentrations.	See Table 3 for groundwater sampling plan. Sample will be collected for Chromium speciation.	
6-81	Former Paint Shop Area	N/A	Buildings 11, 12, 13, 14 and 14X A-M/37-66	10	Paint and Thinner	Chromium Total	SA 11-5 0.7-2.7(ft BGS)	25 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances. - Complete a total of 5 borings. Complete borings to the north and west as well and re-occupy soil borings SA11-1, SA11-5 and SA11-11 to evaluate the DWP exceedances using standard sampling as described in Note 1 and assess background metals concentrations.	- See Table 3 for groundwater sampling plan. - For soil borings: TCL VOCs and cobalt and manganese, and chromium if background data still exceeded, at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-19 P6-SB-35 P6-SB-37 P6-SB-36 P6-SB-18
						Cobalt	SA 11-5 0.7-2.7(ft BGS)	12.6 {EG}			
						Manganese	SA 11-5 0.7-2.7(ft BGS)	1180 {EG}			
6-82	Former Coal Chute Building	Basement filled with water at the time of the site walkthrough	South of Building 28	15	Coal	Chromium Total	SA 20-3 7-9(ft BGS)	16.1 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances. - Reoccupy soil boring SA20-1 to evaluate the DWP exceedances using standard sampling as described in Note 1 and assess background metals concentrations.	- See Table 3 for groundwater sampling plan. - For soil samples, cobalt, selenium, and chromium if background data still exceeded, at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-40 (SA20-1)
						Cobalt	SA 20-1 4-6(ft BGS)	7.9 {E}			
						Selenium	SA 20-2 14-16(ft BGS)	1.01 {G}			
6-83	Whole Bldg. (Sumps, Pits, Trenches, Former WWTP)	N/A	Power Plant Whole Building	15	Waste Water Treatment Sludge	Chromium Total	SA 7-6 14-16(ft BGS)	20.8 {G}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances and assess background metals concentrations. - Install two temporary monitoring wells down gradient. - Collect two soil boring using standard sampling as described in Note 1.	- See Table 3 for groundwater sampling plan. - Soil sampling: TCL VOCs, TCL SVOCs and TAL Metals	P6-SB-16, P6-SB-17
						Selenium	SA 7-4 8-10(ft BGS)	1.31 {G}			
6-87	Oil/Water Separator	Associated with truck dock operations	West of Building 9	5	Used Oil	Chromium Total	SA 9-2 8-10(ft BGS)	7.7 {G}	- One soil boring with standard sampling as described in Note 1 and assess background metals concentrations.	TCL VOCs, TCL SVOCs and TAL Metals at the intervals described in Note 1. Additional analyses determined based on screening results. Sample will be collected for Chromium speciation.	P6-SB-21
6-88	Parking Lot Exceedance	NA	NA	0	Unknown	Antimony	SA 34-6 6-8(ft BGS)	30 {E}	- Collect groundwater samples from existing monitoring wells to assess the GSIP exceedances. - Complete borings to the north, south, and east as well as reoccupy soil borings SA34-6 (4 total) to horizontally and vertically delineate the DWP exceedances using standard sampling as described in Note 1 and assess background metals concentrations.	- See Table 3 for groundwater sampling plan. Groundwater sample will be collected for Chromium speciation. - TCL VOCs, SVOCs and TAL Metals for soil samples at the intervals described in Note 1. Additional analyses determined based on screening results.	P6-SB-11 P6-SB-34 (SA-34-6) P6-SB-22, P6-SB-23
						Benzene	SA 34-6 6-8(ft BGS)	0.16 {E}			
						Chromium Total	SA 34-6 6-8(ft BGS)	9.9 {G}			
						Ethylbenzene	SA 34-6 6-8(ft BGS)	1.23 {G}			
						Selenium	SA 34-6 6-8(ft BGS)	1.09 {G}			
						Xylene (total)	SA 34-6 6-8(ft BGS)	8.11 {EG}			

TABLE 1
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

AOI Identification	AOI Title	AOI Description/Components	AOI Location Building # Column/Bay	AOI Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated With RFI Samples[1]	Soil Boring ID
ID 6-36	Building 23 Sumps and Trenches	Sump Pit	Building 23 F17	<5	Unknown	NA	NA	NA	Three soil borings with standard sampling as described in Note 1.	- See Table 3 for groundwater sampling plan. - TCL VOCs, TCL SVOCs and TAL metals and PCBs at the intervals described in Note 1.	P6-SB-24, P6-SB-25, P6-SB-26
ID 6-38		Trench	Building 23 B-F/17-18	<5	Unknown	NA	NA	NA			
ID 6-39		Trench	Building 23 G-H/15-19	<5	Unknown	NA	NA	NA			
ID 6-75		Associated with the repairing and loading of trucks that were formerly used to haul automobile bodies from the Facility to an assembly location	Building 23 F17	<5	Used Automotive Fluids	NA	NA	NA			

Identification	Title	Description/Components	Location Building # Column/Bay	Approximate Depth Below Grade (ft)	Materials Handled	Constituents Detected above Part 201 Cleanup Criteria	Associated Soil Boring	Maximum Concentration Observed in AOI (mg/kg)	Proposed RFI Activities	Proposed Analytical Parameters Associated With RFI Samples[1]	Soil Boring ID
Misc Item Data Gap Filler Borings	IDs: 6-22, 6-23, 6-24, 6-25, 6-26, 6-27, 6-28, 6-29, 6-35, 6-45, 6-50, 6-51,6-52, 6-53, 6-54, 6-55, 6-56, 6-57, 6-67, 6-69, 6-70, 6-71, 6-72, 6-73, 6-74, 6-76, 6-77	SEE TABLE 2 FOR DESCRIPTIONS	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	SEE TABLE 2 FOR INFORMATION	NA	NA	NA	- Collect four soil borings using standard sampling as described in Note 1; Collect 1 boring approximately 125' South of 6-53; Collect 1 boring approximately 75' East of 6-71; Collect 1 boring approximately 175' south of 6-67; Collect 1 boring approximately 125' South of 6-28. See figure 13 for additional location information.	- TCL VOCs, TCL SVOCs and TAL metals at the intervals described in Note 1.	P6-SB-2 P6-SB-5 P6-SB-6 P6-SB-27
Background Sampling	NA	NA	NA	NA	NA	NA	NA	NA	- Complete 3 borings in the field and parking lot areas. Collect 2 borings from the parking lot located at the Southwest end of the site as shown on Figure 13. Collect 2 borings from the parking lot area located at the North AOI 6-88 as shown on Figure 13.	TCL metals for each boring location	P6-SB-3 P6-SB-9 P6-SB-10

Footnotes

Note 1: Advance borings to 5' below the depth of the AOI and collect soil samples continuously for screening purposes. If groundwater is encountered prior to the bottom of the AOI a temp well will be installed and a grab water sample will be collected. In general, soil samples will be collected for analysis at the surface (0'-2'), at the interval with the highest PID (if none present then at the bottom of the AOI), and at the interval directly above the water table/bedrock. If the bottom of the AOI is below the water table a temp well will be installed, with the screen placed at the depth of the AOI, and a grab water sample will be collected to replace the soil sample from the bottom of the AOI. If the depth of the AOI in unknown the boring will be advanced to 30' bgs or until groundwater is encountered unless evidence suggests the boring should be advanced deeper.

NA - not applicable
Csat - Part 201 Soil Saturation Concentration Screening Levels
DC - Direct Contact Criteria
DWP - Drinking Water Protection Criteria
GSIP - Groundwater Surface Water Interface Protection
NA - Not Applicable
PCBs - Polychlorinated biphenyls
PSIC - Particulate Soil Inhalation Criteria
SVIIC - Soil Volatilization to Indoor Air Inhalation Criteria
SVOCs - Semi-Volatile Organic Compounds
VOCs - Volatile Organic Compounds
VSIC - Infinite Source Volatile Soil Inhalation Criteria
RC - restrictive covenant
RWC - Risk-based Redevelopment Worker Contact
TAL - target analyte list (for metals) - note: will include speciation of chromium (trivalent and hexavalent) where noted above
TCL - target compound list (for VOCs and SVOCs)

Sample Concentration Exceedance Codes:

{A} - MDEQ Part 201 Industrial SVIIC
{B} - MDEQ Part 201 Industrial VSIC
{C} - MDEQ Part 201 Industrial PSIC
{D} - MDEQ Part 201 Industrial DC
{E} - MDEQ Part 201 Residential DWP
{F} - Risk-based Redevelopment Worker Contact
{G} - MDEQ Part 201 GSIP
{H} - MDEQ Part 201 Residential SVIIC
{I} - MDEQ Part 201 Residential VSIC
{J} - MDEQ Part 201 Residential PSIC
{K} - MDEQ Part 201 Residential DC
{L} - MDEQ Part 201 Soil Saturation Concentration Screening Levels

TABLE 2
RACER TRUST LANSING PLANT 2
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID (A)	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
2-18	Oil Interceptors	Located on edge of Building 250. Collects oil from housekeeping trenches before discharge to the storm sewer.	Building 250 Whole Building	Drawing Review	37 and 38	<5	Used Oil	Currently Operating	None	HPIM100_0860-HPIM100_0862 & LAB REPORT	Demolition inspection indicated good condition. Sample collected for PCB's = Non-Detect
2-19	Flammable Spill Sump	Located on edge of Building 250	Building 250 North Side of Building	Drawing Review	37	<5	Flammable Liquids	Currently Operating	None	HPIM100_0864 & LAB REPORT	Demolition inspection indicated good condition. Sample collected for PCB's = Non-Detect
2-20	Paint Shop Spray Booth	Painting Operations	Building 206 D16-17	Drawing Review	OFF-1	<5	Paint	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-21	Sub-Basement with Sump	Flooded with inches of sludge…	Building 206 C14-15	Drawing Review	206.1025-AO1	<10	Paint Sludge	3/2006	None	HPIM100_0708 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-22	Paint Shop Sump	Connected to a 2" process waste line which leads to industrial wastewater pre-treatment facility	Building 206 B14	Drawing Review	206.7018-A01	<10	Paint Shop :Liquid Wastes	3/2006	None	HPIM100_0710, HPIM0711 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-24	Body Shop Area Trenches and Sumps	CMM Trenches and Sumps (2)--Type B	Building 206 D5	Drawing Review	BS-400-BCAB-02	<10	Body Shop Area Liquid Wastes	3/2006	None	HPIM100_0938 AND HPIM100_0939 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
		Trenches and Sumps--Type B	Building 206B E6 and E8	Drawing Review	241.1011-A02				None		
		2 Sumps--Type B	Building 206 B6-7	Drawing Review	PA-500-GCAB-07				None		
		2 Sumps--Type B	Building 206 B6 and C7	Drawing Review	206.8000-A03				None		
		3 Type C Sumps	Buildings 206, 206C and 241 A3-5 and D2	Drawing Review	BS-400-GCAB-02				None		
2-25	Paint Shop Conveyor Transfer Pit	7 feet deep	Building 206 B5-7	Drawing Review	PA-500-GCAB-06	7	Paint Sludges	3/2006	None	HPIM 100_947 AND HPIM 100_0946 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-28	Body Wash System Drain Deck, Sumps and Trenching	Three Type B sumps and associated trenches.	Buildings 206, 206C, 237 and 241 A1, B1, D1 and E1	Drawing Review	BS-400-BCAB-01	<5	Body Wash System Liquids	3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-29	Compound Tank	Drawing Compound	Building 207 B11	Drawing Review	207.4001-A02	<15	Drawing Compound	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-30	Oil Storage AST and Oil Separator	10" oily waste line runs to separator. Water discharged to 12" sanitary sewer line. Salvage line flows via 6" pipe to oil storage tank.	Building 207 A10-11	Drawing Review	207.8000-A01	<15	Used Oil	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-40	Exhaust Manifold Area Sumps and Trenching	Seven sumps. Three are 2'x2'x2'. Four are 1'x1'x1'	Building 238 A1-8	Drawing Review	238.1004-A1-A4	<2	Exhaust Manifold Area Liquid Wastes	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
		6" wide and 15" deep	Building 238 A1-2	Drawing Review	238.1004-A1				None		
2-41	COE Drive Pit and Sumps	COE Drive Pit	Buildings 202 and 238 A6-11	Drawing Review	202.4001.A01	<5	Used Oil and Waste Grease	Prior to 3/2006	None		Based on nature of AOI operations, construction and management practices
		2 Type B Sumps		Drawing Review	202.4001-AO1				None		

TABLE 2
RACER TRUST LANSING PLANT 2
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [A]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
2-42	Fluid Fill Operations	Gasoline and Fluid Fill Area--includes a used oil discharge pump with a fire containment pit, a waste gas discharge pump with a separation tank, a gas fill pit, and three sumps.	Building 202 C4-10	Drawing Review	201.7000-AO1, TR-600-GCAB-13	<10	Gasoline, Used Gasoline, and Used Oil	3/2006	None	Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-43	Gas Tank Leak Test Drain Deck	10'x10' gas tank leak test drain deck with Type B sump and trenching	Building 202 D12	Drawing Review	202.7003-AO2	<5	Used Gasoline	Prior to 3/2006	None		Liquids were not typically present
2-44	C.O.E. Pits	One Type B sumps & trenching associated with pits	Building 201 C5	Drawing Review	202.4001-AO1	<5	Used Oil and Waste Grease	Prior to 3/2006	None		Liquids were not typically present
2-45	C.O.E. Pits	One Type B sumps & trenching associated with pits	Building 201 B1 and C1	Drawing Review	202.4001-AO1	<5	Used Oil and Waste Grease	Prior to 3/2006	None		Liquids were not typically present
2-46	Soluble Oil Sump	N/A	Building 201 C11	Drawing Review	25	<5	Used Soluble Oil	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-47	Building 204 Basement Sumps and Trenching	Sumps and trenching	Building 204 Whole Building	Drawing Review	204.1501-AO2	<20	Oily Water	3/2006	None	HPIM100_0528 and HPIM100_0531 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-48	Paint Spray Booth and Sumps	Sumps connected to waste treatment line.	Building 205 C10-12	Drawing Review	205B.1009-AO4	<10	Paint and Waste Paint	3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-50	Toe-in Sump	Type B Sump	Building 203 C2	Drawing Review	203.1005-AO1	<15	Used Oil and Waste Grease	3/2006	None	Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-51	Sumps	Type B Roll Test Sump	Building 203 C4	Drawing Review	203.1005-AO1	<10	Used Oil and Waste Grease	3/2006	None	HPIM100_05411 AND HPIM100_0890 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
		Type B Sump, Final Line Sump	Building 203 C5	Drawing Review	203.1005-AO1				None		Liquids were not typically present
2-53	E-Coat System Drain Deck	4 Type B sumps and trenching (1' wide)	Building 206 C1-7	Drawing Review	PA-500-GCAB-06, 206.1014-A02	<5	E-Coat System Liquid Wastes	3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-54	2 Slag Pits	Adjacent to ajax furnaces	Building 208A B3 and B7	Drawing Review	208A.9004-ACL	<5	Slag	3/2006	None		Liquids were not typically present
2-56	Pits	2 Pits, 6' by 10'	Building 204 B4	Drawing Review	4383 Sheet 3	<10	Unknown	Prior to 3/2006	None		Liquids were not typically present
2-57	Tunnel	N/A	Building 204 F-G/4-8	Drawing Review	4383 Sheet 3	<15	Process Waste	3/2006	None	HPIM100_0719 AND HPIM100_0720 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-58	Storm, Sanitary, and Process ("Oily Waste") Sewers	Throughout Facility	Throughout Facility	Drawing Review	Taken from electronic drawing	<30	Storm Water, Sanitary Waste Water, Process Waste Water	3/2006	None	Demolition Contractor SUPPLEMENTAL REPORT	Demolition inspection indicated good condition.
2-60	Take-Up Pit and Sumps	Take-up Pit, 9' wide, 7' deep, 2 Sumps on either end are 2.5 wide, 2' deep	Buildings 203, 205 and 209 D and C	Drawing Review	209.1003-AO1, 209.1093-A01	9	Used Hydraulic Oil	3/2006	None	HPIM100_0891 - HPIM100_0897 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 2
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [A]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
2-61	Paint Room and Stripping Tank	N/A	Building 226 D	Drawing Review	201.105-AO1	<10	Paint and Waste Solvents	3/2006	None		Liquids were not typically present
2-62	Body Area Sumps	9 Sumps	Buildings 206, 206C and 241 A3-5 and D2	Drawing Review	BS-400-GCAB-02	<5	Liquid Wastes	Prior to 3/2006	None		Liquids were not typically present
2-63	Process Waste Sump	1 Sump, 3 by 3 by 5	Building 205B B12	Drawing Review	PR-600.0K.002-ME	5	Process Waste	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-64	Paint Repair Area Sump	1 sump, 3 by 3 by 6.5	Building 205B B3	Drawing Review	205B.7006-AO1	7	Paint Repair Area Liquid Wastes	Prior to 3/2006	None		No Likelyhood of a Release based on Operator knowledge
2-65	Phosphate Storage Tank Pit	11' deep with epoxy waterproof coating.	Buildings 206 and 237 B1-3 and C1	Drawing Review	206.1014-A01	11	Phosphates	3/2006	None	HPIM100_0725, HPIM100_0726 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
2-66	Current Flammable Waste Storage Building	Building Transferred from AOI 2-5 to 2-66	Outside NE corner of 242	Drawing Review	N/A	0	Flammable Wastes	Currently Operating	None	Demolition Contractor FIELD NOTES	Modular building on skids, Currently in use
2-67	New Product AST Farm	Stores new oil	East of 201B	Drawing Review	N/A	0	Gasoline, Diesel, and Oil	3/2006	None	HPIM100_0878 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resourses	Rationale for No Further Action
3-12	Sump for Rod Operations	Sump (1'x1'x1')	Building 302A D14	Drawing Review	1	Rod Operations Liquid Wastes	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-14	Oiler Deck with Trench and Sump	2'x2'x3' sump connected to 27'x1' trench	Building 302A B12	Drawing Review	3	Used Oil	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-16	Former Sumps	Two 2'x2'x2' sumps	Building 302A D-E/12-13	Drawing Review	2	Unknown Liquid Wastes	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-18	Drum Storage	One empty storage area, one full storage area. Full area has 5 storage racks and one biocide storage rack	Building 302 N8-9	Drawing Review	0	Empty and Full Drums (Unknown Contents)	11/2006	N/A	Plant 2 & 3 AOI Inspections Photo Log.doc	Demolition inspection indicated good condition.
3-19	Rack Wash Booth, Trenching and Sump	Pumps discharge to oily waste line	Building 302 C4	Drawing Review	3	Rack Wash Booth Liquid Wastes	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-20	Chip Conveyor	2' deep conveyor	Building 302 G7	Drawing Review	2	Used Oil, Metal Chips	Prior to 11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-21	Coolant Clarifier, Collecting Tank Trenches and Pits, and Drain Deck and Sumps	4,200-gallon coolant collection tank; 1,900-gallon coolant collecting tank; drain-trench system; filtration system pit and flotation clarifier system pit	Building 302 H-N/6-9	Drawing Review	<15	Used Coolant	Prior to 11/2006	N/A	Lansing Photo Log, Plant 3	
		Drain Deck with Sumps, Six sumps, 1' diameter and 3' deep. Four 16" deep trenches.	Building 302 J-K/9	Drawing Review					Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
		Sumps for Belco Washer, 2 sumps	Building 302 H-J/7	Drawing Review					Lansing Photo Log, Plant 3	
		2 ' diameter and 3' deep sumps	Building 302 M-N/7-8	Drawing Review					Lansing Photo Log, Plant 3	
		Pit and associated 4'x4'x4' sump	Building 302 K9-10	Drawing Review					Lansing Photo Log, Plant 3	
3-22	Former Trainwell Sumps	2' diameter sumps and associated trenching	Building 302 A1	Drawing Review	<5	Used Grease and Oil	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-23	Tramp Oil Decks with 2 Sumps	2 sumps	Building 302 M11	Drawing Review	<5	Tramp Oil	Prior to 11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-24	Former Knuckle Area Drain Deck Trenching and Sump	1' deep trench ending in a 3.5' deep sump	Building 302 B-D/3	Drawing Review	5	Used Oil	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resourses	Rationale for No Further Action
3-25	Cooling and Quench Water Pits	Ten pits, 63'x15'x8'	Building 302 K5-7	Drawing Review	8	Coolant Quench Water	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-26	Repair Area Parts Washer	N/A	Building 302 E2	Drawing Review	<5	Solvents	11/2006	N/A	Area of Intrest Visual Inspection Form. CCR Report	Demolition inspection indicated good condition.
3-27	Filter Pit and Sump	55'x10.5'x19' Pit with associated sump	Building 302 E-F/5-7	Drawing Review	<25	Unknown Liquid Wastes	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-28	Washer Trenching and Sump	6" wide trench with a 9' 4" x 4' 10" sump pit	Building 302 A10 and B10	Drawing Review	<5	Washer Area Liquid Wastes	Prior to 11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
		Drain Deck Trenching and Sump for Double Polishers	Building 302 A11 and B11	Drawing Review						
3-29	Former Trainwell Trench and Sumps	9" wide trench connected to 3' 4" wide and 1.5' deep sump	Building 302 A-B/9-12	Drawing Review	2	Used Grease and Oil	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-30	Paint Booth	Spray paint booth and paint storage cabinets	Building 301 J13	Drawing Review	0	Waste Paint	Prior to 11/2006	N/A	Area of Intrest Visual Inspection Form. CCR Report & Photo Log.doc	Demolition inspection indicated good condition.
3-31	Truck Repair Wash Booth Sump	3' deep sump with 2' diameter cover	Building 301 B5	Drawing Review	3	Truck Repair Area Wash Booth Liquid Wastes	Prior to 11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-32	Oil Interceptor Grease Trap for Truck Dock	500-gallon oil interceptor and grease trap	Building 301 A13	Drawing Review	<10	Used Oil and Grease	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-33	Die Wash Booth and Sump	N/A	Building 305 D10	Drawing Review	<5	Die Wash Booth Area Liquid Wastes	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-34	Steam Clean Booth Sump Pit	N/A	Building 305 B9	Drawing Review	<5	Steam Clean Booth Area Liquid Waste	Prior to 2006	N/A	Area of Intrest Visual Inspection Form. CCR Report & Photo Log.doc	Demolition inspection indicated good condition.
3-35	IMF Washer Sumps and Trenches	10" deep trenching with associated 3'x3'x4' deep sump	Building 301 D8-9	Drawing Review	5	Unknown	Prior to 2006	N/A	Area of Intrest Visual Inspection Form. CCR Report & Photo Log.doc	Demolition inspection indicated good condition.
3-36	2 sumps	N/A	Building 301 F14	Drawing Review	<5	Unknown	Prior to 2006	N/A	Per Onsite Oversight	Demolition inspection indicated good condition.
3-37	Bumper Oil Booth Drainage Trench and Sump	31' long and 3' wide trench with associated 1.5' diameter dry sump	Building 301 E4	Drawing Review	2	Used Oil	Prior to 2006	N/A	Per Onsite Oversight	Demolition inspection indicated good condition.
3-38	IMF Washer Sumps and Trenches	92' x 15' area with associated 4' deep sump	Building 301 H10-12	Drawing Review	4	Unknown	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-39	IMF Drain Deck Gon Washer Trench and Sump	6" wide trench, approximately 13' long	East of A14 Building 301 A14	Drawing Review	<10	Unknown	Prior to 2006	N/A	Area of Intrest Visual Inspection Form. CCR Report & Photo Log.doc	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resourses	Rationale for No Further Action
3-40	Press Pit Operations	Crescent Extruding Fixture Sump - 1' 8" diameter sump, 3' deep	Building 301 C15	Drawing Review	<25	Used Hydraulic Oil	11/2006	N/A	Lansing Photo Log, Plant 3	
		Oil Settling Tank	Building 301 D8-9	Drawing Review						
		Press Pit Sump	Building 301 F14	Drawing Review						
		Press pit and associated sump	Building 301 B14	Drawing Review						
		One press pit and associated 2' deep sump	Building 301 A15-16	Drawing Review						
		2 Press Pits	Building 301 A9-13	Drawing Review						
		Clearing Presses Sump (1'x1'x1')	Building 301 A6	Drawing Review						Demolition inspection indicated good condition.
		Press Pits Oil Trenches (3' deep)	Building 301 A1-5	Drawing Review						
		Press Pit and Trenches	Building 301 B9-12	Drawing Review						
		Bumper Line Press Pits	Building 301 A10-13	Drawing Review						
		Danly Press Pits and Trap Oil Gondola	Building 301 A11-13	Drawing Review						
		Press Pits Oil Trenches	Building 301 A-B/9-12	Drawing Review						
		Press Pit Trench and Sump (2'x2'x2')	Building 301 B8	Drawing Review						
3-41	Oil Sump in Truck Dock	N/A	Building 304 F20	Drawing Review	<10	Used Oil	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-42	Bin Cleaning Drain Deck Sumps	Two sumps	Building 304 B16	Drawing Review	<5	Bin Cleaning Area Liquid Wastes	Prior to 2006	N/A	Per Onsite Oversight	Demolition inspection indicated good condition.
3-43	Heil Compactor, Hydraulic Oil Containment and Sump	N/A	Building 304 A21	Drawing Review	<5	Used Hydraulic Oil	Prior to 11/2006	N/A	Per Onsite Oversight	Demolition inspection indicated good condition.
3-44	Steam Cleaning Booth Sump	3' deep sump; 8" drain pipe connects sump to an oil collection pit	Building 305 B9	Drawing Review	3	Steam Cleansing Area Liquid Wastes	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-45	Housekeeping Sump	3'x 3'x3' sump	Building 305 A21	Drawing Review	3	Unknown	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-46	Carden Washer Sump and Trenches	1.5'x3'x2'4" sump	Building 305 A3	Drawing Review	3	Carden Washer Area Liquid Wastes	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-47	RWC Welder Pit and Sump	2'x2'x2' sump	Building 305 C18	Drawing Review	2	RWC Welder Area Liquid Wastes	Prior to 11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resourses	Rationale for No Further Action
3-48	Blanking Line and Shear Equipment Sump and Trenches	2'x2'x1.5' deep sump; trenching between 2 and 4 inch deep	Building 305 A1	Drawing Review	2	Used Hydraulic Oil	Prior to 2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-49	Cooling Water Tower Chemical Feed Area	Containers that store sodium hypochlorite, spectrus NX 114, Continuum AEC 231, Corr shield MD400, Inhibitor A28101; Trenching and sumps associated with operations.	Building 305 A1 and B1	Site Walkthrough	<10	Cooling Water Chemicals	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-50	Copper Buffing Operations	Dry dust collectors and wash and rinse tanks	Building 301 F4-6	Drawing Review	<10	Copper Buffing Agents	Prior to 11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-52	Battery Charging Area	Batteries and Chargers	Building 304 F6 and F7	Drawing Review	0	Batteries	11/2006	N/A	Area of Intrest Visual Inspection Form. CCR Report	Demolition inspection indicated good condition.
3-53	Oilers Crib	Oilers Crib - Consists of one recycle oil tank, an oil reclaim filter unit surrounded by a trench area, and associated sump	Building 304 F10	Drawing Review	<5	Used Oil	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-55	Die Cleaning Booth	Sump/Sump Pit	Building 304 D7	Drawing Review	<5	Die Cleaning Area Liquid Wastes	11/2006	N/A	Lansing Photo Log, Plant 3	Demolition inspection indicated good condition.
3-56	Foundation for Niagra Press	Niagra Press Sump	Building 304 F1	Drawing Review	<10	Used Hydraulic Oil	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-57	Die Room Hydraulic Spotting Press Sump	Press Pit Sump	Building 304 D4-5	Drawing Review	10	Used Hydraulic Oil	Prior to 2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-58	LADD Washer	Trench and Sump	Building 304 E13 and E14	Drawing Review	<5	LADD Washer Area Liquid Wastes	11/2006	N/A	Area of Intrest Visual Inspection Form. CCR Report and Photo Log.doc	Demolition inspection indicated good condition.
3-59	Broach Pit Sump	3' deep sump	Building 304 E11	Drawing Review	3	Used Oil and Metals Chips	11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-60	Press Operations	Trenching and Sumps	Building 305 B-D/14 and C13	Drawing Review	<10	Used Hydraulic Oil	Prior to 11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
		Press Drainage Trench	Building 305 C13	Drawing Review						
3-61	Automatic Feed Line	Automatic Feed Line Press Sumps and Trenches	Building 305 C1 and C2	Drawing Review	<10	Unknown	11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-62	Press Feed Line	Press Feed Line Sump (3' Deep)	Building 305 E1 and E2	Drawing Review	<5	Used Hydraulic Oil	11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.
3-63	Hemming Press Operations	Hemming Press Sumps and Trenches	Building 305 B16	Drawing Review	<10	Used Hydraulic Oil	11/2006	N/A	Per Onsite Demo Oversight	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
6-21	Former Solder Repair Pit	1.5' deep	Building 17 FF9	Drawing Review	1.5	Metals	Prior to 2005	Site Assessment 2005	Site Assessment 2005	No further action based on soil borings installed during the 2005 SA summarized in Figure D-1 and detailed in Appendix D of the CCR that showed no exceedance of the Screening Levels.
6-22	New Transfer Can Pit	16'x16'x2'	Building 17 FF7	Drawing Review	2	Used Grease and Oil	2005	N/A	HPIM0664 - HPIM0667& Demolition Contractor FIELD Notes	Demolition inspection indicated good condition.
6-23	New Weld Pit	20'x20'x4'	Building 16 OO103	Drawing Review	4	Metals	2005	N/A	HPIM0659 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-24	Existing Drive Unit Pit	7' deep	Building 16 NN106	Drawing Review	7	Used Grease and Oil	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-25	Solder Grind Booth	Sanitary and storm line run underneath	Building 16 SS-XX/101	Drawing Review	<15	Metals	2005	N/A	HPIM0656 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-26	New Weld Pit	20'x20'x4'	Building 16 AAA103	Drawing Review	4	Metals	2005	N/A	HPIM0654 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-27	New Advancing Conveyor Pit	N/A	Building 16 XX-ZZ/101	Drawing Review	<5	Used Grease and Oil	2005	N/A	HPIM0657 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-28	New Drive Unit Pit	4' deep	Building 16 WWW101	Drawing Review	4	Used Grease and Oil	2005	N/A	HPIM0658 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-29	Existing Drive Unit Pit	7' deep	Building 16 YY103	Drawing Review	7	Used Grease and Oil	2005	N/A	HPIM0655 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-35	Filter Pit with Sump	15'x40'x11'; associated with former painting operations	Building 16 WX114 and WX115	Drawing Review	11	Paint Operations Filter Cake	2005	N/A	HPIM0627 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-37	Trench	N/A	Building 23 A-B/10-13	Drawing Review	<5	Unknown	2005	N/A	HPIM0570, HPIM0571, HPIM0572, HPIM0573, HPIM0574, HPIM0575 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-40	Parts Washer Solvent Tank	Stored metal-containing solvents	Building 23 G14	Drawing Review	<10	Solvent	2005	Site Assessment 2005	Site Assessment 2005	No further action based on soil borings installed during the 2005 SA.
6-42	Stormceptor	Includes stormceptor oil and sediment separator	North of Building 16	Drawing Review	<15	Storm Water, Oil and Sediments	2007	Site Assessment 2005	Daily Logs	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
6-45	Paint Sludge Trenches	N/A	Building 16 ZZ11	Drawing Review	<5	Paint Sludge	2005	N/A	HPIM0622-HPIM0626 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-46	ASTs with Secondary Containment	Stored ELPO related products	Building 16 ZZ117	Site Walkthrough	0	ELPO Related Products	2005	Site Assessment 2005	Site Assessment 2005	No further action based on soil borings installed during the 2005 SA.
6-50	Weld Pit	18'x20'x4'	Building 16 E-F/101/103	Drawing Review	4	Metals	2005	N/A	HPIM0631 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-51	Weld Pit	18'x20'x4'	Building 3X D106	Drawing Review	4	Metals	2005	N/A	HPIM0636 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-52	Drive Unit Pit	12'x8'x7'	Building 3X C104	Drawing Review	7	Used Grease and Oil	2005	N/A	HPIM0638 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-53	Solder Grind Pit	N/A	Building 3X G107	Drawing Review	<10	Metals	2005	N/A	HPIM0639 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-54	Solder Grind Pit	N/A	Building 3X E108	Drawing Review	<10	Metals	2005	N/A	HPIM0640 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-55	Torch Solder Pit	35'x20'x2.5'	Building 3X E-G/101-103	Drawing Review	2.5	Metals	2005	N/A	HPIM0647 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-56	Drive Unit Pit	8'x12'x7'	Building 3X N103	Drawing Review	7	Used Grease and Oil	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-57	Tunnel	9' deep	Building 3X A101-105	Drawing Review	9	Process Waste	2005	N/A	HPIM0641-HPIM0645 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-58	Pit	7' deep	Building 10 U36 and V36	Drawing Review	7	Unknown	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-61	Process Pit	N/A	Building 3X B-C/8-10	Drawing Review	<10	Unknown	2005	N/A	HPIM0646 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-62	Sump	N/A	Building 20 W23	Drawing Review	<5	Unknown	1993	N/A	HPIM0675, HPIM0813 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.

TABLE 2
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX - MISCELLANEOUS ITEMS

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

ID #	Title	Description/Components	Location Building # Column/Bay	AOI Source	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Back up Resources (Photos and Field Notes)	Rationale for No Further Action
6-64	Sump	N/A	Building 20 WWW21	Drawing Review	<5	Unknown	1993	N/A	HPIM0676 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-65	Sump	N/A	Building 20 UU18	Drawing Review	<5	Unknown	1993	N/A	HPIM0677 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-67	Sump	N/A	Building 14 EE23	Drawing Review	<5	Unknown	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-69	Weld Pit	N/A	Building 17 HH9-10	Drawing Review	<10	Metals	2005	N/A	HPIM0668, HPIM0669, HPIM0670, HPIM0671 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-70	Sump	N/A	Building 16 GG102	Drawing Review	<5	Unknown	2005	N/A	HPIM0661 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-71	Sump	N/A	Building 16 GG110	Drawing Review	<5	Unknown	2005	N/A	HPIM0662 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-72	Sump	N/A	Building 16 PP110	Drawing Review	<5	Unknown	2005	N/A	HPIM0663 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-73	Sump	Associated with former painting operations.	Building 16 BBB117	Drawing Review	<5	Paint and Thinner	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-74	Sump	Associated with former painting operations.	Building 16 CCC117	Drawing Review	<5	Paint and Thinner	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-76	Washer Sump	N/A	Building 4 AA8	Drawing Review	<5	Wash Water	2005	N/A	HPIM0648, HPIM0649 & FIELD NOTES	Demolition inspection indicated good condition.
6-77	Washer Sump	N/A	Building 4 R11	Drawing Review	<5	Wash Water	2005	N/A	Daily Logs	Demolition inspection indicated good condition.
6-79	Gasoline AST	Stored gasoline with Secondary Containment	West of Building 15	Drawing Review	0	Gasoline	2005	N/A	HPIM100_0736, HPIM100_0737 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.
6-80	Sump	N/A	West of Building 15	Drawing Review	<5	Unknown	2005	N/A	HPIM 100_0733, HPIM100_0734 AND HIPM 100_0735 & Demolition Contractor FIELD NOTES	Demolition inspection indicated good condition.

TABLE 3
RACER TRUST LANSING PLANT 2
RFI WORKPLAN MATRIX - HYDROGEOLOGOC TABLE

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

Regional Hydrogeology

The primary aquifer in the Lansing area is the Grand River-Saginaw aquifer, which is a major supplier of water for municipal, industrial and domestic use in the Lansing area (USGS, 2000) as further discussed in Section 2.8. Because the sandstone of the Grand River Formation was formed within erosional valleys of the Saginaw Formation, the two formations are hydraulically connected, and thereby comprise one aquifer known as the Grand River-Saginaw aquifer (USGS, 2000). The principal source of recharge of the Grand River-Saginaw aquifer is the unconsolidated overburden deposits (USGS, 2000). However, known outcroppings of these formations exist along the Grand River, where recharge could occur as well.
As observed across the Facility and at nearby properties (GM Plant 1 to the south), groundwater may be present in relatively more permeable units (i.e., sand and gravel) within the glacial clay till. These "perched" water units are typically discontinuous and vary in elevation and thickness (BBL, 2005a). Because flow within perched water units is primarily controlled by gravity, flow direction within these units varies. Groundwater in the perched water units may ultimately flow downward toward the bedrock aquifer or horizontally through relatively permeable material. Mean annual stream flow for the Grand River at Lansing is approximately 1,000 cubic ft per second (cfs) (USGS, 2006). River flow is highly variable due to precipitation and runoff throughout the year and seasonal changes. South of the Facility, the Grand River flows west to east through the City of Lansing. The Grand River changes flow direction several times through Lansing and finally leaves the city, northwest of the Facility, in a westerly direction (BBL, 2005b).

Plant 2 - Well Inventory

Well ID	Nearby AOIs	Purpose	Date of Installation	Well Construction		Screen Construction	TOC Elevation (NAD 83)	Screen Interval (ft bgs)			Relative Screen Elevation Interval (NAD 83)			Geologic Unit*	Initial Depth to Water (ft bgs)	Depth to Water (ft below toc) (8/30/2010)	Groundwater Elevation (8/30/2010) (NAD 83)	Sampling	Proposed Analytical Parameters
				Diameter of Well Casing (inches)	Riser Construction														
Existing Monitoring Wells																			
OW-4	2-4 and 2-15	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the AST and former UST farm.	6/1/1990	2.0	Galvanized Steel	0.010 Slot Stainless Steel	868.40	34	-	39	834.58	-	829.58	Unit 4	9.0	NL	NL	Sample MW-2 only	TCL VOC's, TCL SVOC's and TAL Metals
MW-1	2-16	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the former USTs.	10/4/1993	2.0	Sch. 40 PVC	0.010 Slot Sch. 40 PVC	876.42	10	-	20	866.42	-	856.42	Unit 3 and 4	Not Recorded	15.78	860.64		
MW-2			10/5/1993	2.0	Sch. 40 PVC	0.010 Slot Sch. 40 PVC	876.63	12	-	22	864.63	-	854.63	Unit 3 and 4	Not Recorded	21.95	854.68		
MW-3			10/4/1993	2.0	Sch. 40 PVC	0.010 Slot Sch. 40 PVC	877.03	12	-	22	865.04	-	855.04	Unit 3 and 4	Not Recorded	19.38	857.65		

Proposed Monitoring Wells/Boring	Nearby AOIs	Purpose	Depth	Proposed Groundwater Analytical Parameters	Proposed Hydrogeologic Parameters	Proposed Soil Analytical Parameters	Comments
4 wells	2-1, 2-7, 2-11, AOI 2-15	Hydrogeologic information and water quality	Water Table	TCL VOCs, TCL SVOCs, TAL metals for samples	Grain size, Total Organic Carbon, Bulk Density, Slug test, sieve analysis	Standard sampling as described in Note 1 with field screening and TAL Metals.	The appropriateness of nested wells at these specific locations will be assessed after the Phase I data is evaluated.
1 Boring		Deep, unconsolidated soil, potable groundwater zone monitoring	To Bedrock	TCL VOCs, TCL SVOCs, TAL metals for samples,	Grain size, Total Organic Carbon, Bulk Density, Slug test, vertical hydraulic conductivity, sieve analysis	Standard sampling as described in Note 1 with field screening and TAL Metals.	To be completed during Phase II Investigation

Plant 2 Hydrogeology

The shallow monitoring wells installed at Plant 2 to assess the Building 225 and 250 UST areas indicated that groundwater was encountered between 7 and 8 ft bgs. There are no active production wells at Plant 2; however, as discussed above, former production wells appear to have been completed in the Grand River-Saginaw aquifer at depths of approximately 400 ft bgs. Static water levels in these former production wells were measured at approximately 60 ft bgs.

Notes:
Note 1: Advance borings to the water table or bedrock, whichever is encountered first, and collect soil samples continuously for screening purposes utilizing Exhibit 1 methodology. In general, soil samples will be collected for analysis at the surface, at the interval with the highest PID (if none present then at the bottom of the AOI), and at the interval directly above the water table/bedrock. If water is encountered before the bottom of the AOI a temp well will be installed and a grab water sample will be collected to replace the soil sample interval directly above the water table.
AOI = Area of Interest
AST = Aboveground Storage Tank
UST = Underground Storage Tank
Sch. 40 PVC = Schedule 40 Polyvinyl Chloride
ft bgs = feet below ground surface
NL = Monitoring Well has been abandoned or was not located during the 8/30/2010 well inventory/gauging event.
NAD 83 = North America Datum 1983 coordinate system

***Geologic Unit Descriptions**
Unit 1 - Topsoil: some sand, fine gravel, and silt
Unit 2 - Fill Sand and Clay used as backfill: sandy silt and sandy silty clay (SP, ML, CL)
Unit 3 - Clay: sandy silty clay with varying amounts of fine to coarse sand and fine gravel (CL)
Unit 4 - Sand: sandy silt and sandy silty clay (SP, ML, CL)
Unit 5 - Silt and Sand: interbedded fine to coarse sands, silts, and sandy silts with varying amounts of fine to medium gravel.
Unit 6 - Clay: sandy clay and gravel lens (CL)
Unit 7 - Bedrock: sandstones and siltstones of the Saginaw Formation
Unit 8 - Bedrock: shale of the Saginaw Formation

TABLE 3
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - HYDROGEOLOGOC TABLE

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

Plant 3 - Well Inventory

Well ID	Nearby AOIs	Purpose	Date of Installation	Well Construction		TOC Elevation (NAD 83) [1]	Screen / Open Borehole Interval (ft bgs)			Relative Screen Elevation Interval (NAD 83) [1]			Geologic Unit*	Approximate Initial Depth to Water (ft bgs)	Depth to Water (ft below toc) (8/18/2010 and	Groundwater Elevation (NAD 83) (8/18/2010 and 8/30/2010)	Sampling	Proposed Analytical Parameters
				Diameter of Well Casing	Well Construction													
Existing Monitoring Wells																		
MW-19	3-9	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the former USTs.	8/13/1991	2.0	0.010 Slot Sch. 40 PVC	100.49	55	-	65	45.49	-	35.49	Unit 5	60.00	59.50	40.99	Sample each accessible well.	TCL VOC's, TLC SVOC's, TAL Metals for groundwater samples
MW-21	3-9		8/15/1991	2.0	0.010 Slot Sch. 40 PVC	100.47	56	-	66	44.47	-	34.47	Unit 5	61.00	61.45	39.02		
MW-22	3-9		8/30/1991	2.0	0.010 Slot Sch. 40 PVC	100.435	52.5	-	62.5	47.94	-	37.94	Unit 5 and 6	57.00	NA			
MW-23	3-9	Existing monitoring wells will be sampled to assess the current groundwater quality conditions.	8/21/1991	2.0	0.010 Slot Sch. 40 PVC	100.195	52	-	62	48.20	-	38.20	Unit 5	58.20	NA			
MW-24	3-9		8/9/1991	2.0	0.010 Slot Sch. 40 PVC	100.38	50.5	-	60.5	49.88	-	39.88	Unit 5	56.00	NL			
MW-02-01	3-10	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and to assess groundwater conditions for the investigation of the Former Plating Area.	10/22/2002	2.0	0.010 Slot Sch. 40 PVC	865.71	59	-	69	806.71	-	796.71	Unit 5	64.00	NL			
MW-02-02	3-10		10/24/2002	2.0	0.010 Slot Sch. 40 PVC	863.04	74	-	84	789.04	-	779.04	Unit 5	70.00	NL			
MW-02-03	3-10		10/29/2002	2.0	0.010 Slot Sch. 40 PVC	859.83	79	-	89	780.83	-	770.83	Unit 5	70.00	69.38	790.45		
MW-02-04	3-10		10/31/2002	2.0	0.010 Slot Sch. 40 PVC	859.75	76	-	86	783.75	-	773.75	Unit 5	68.00	69.56	790.19		
MW-04-01	3-10		9/21/2004	2.0	0.010 Slot Sch. 40 PVC	862.89	95	-	105	767.89	-	757.89	Unit 7 and 8	64.00	NL			
MW-05-02	3-10		9/23/2004	2.0	0.010 Slot Sch. 40 PVC	861.33	126	-	136	735.33	-	725.33	Unit 7	48.00	71.05	790.28		
MW-04-03	3-10		9/30/2004	2.0	0.010 Slot Sch. 40 PVC	860.99	80	-	90	780.99	-	770.99	Unit 5	48.00	70.05	790.94		
MW-04-04	3-10		9/27/2004	2.0	0.010 Slot Sch. 40 PVC	856.05	72	-	82	784.05	-	774.05	Unit 5	70.00	64.60	791.45		
MW-88-1	3-10		9/22/1988	Not Recorded	Open Borehole	859.3	103.5	-	140	755.80	-	719.30	Unit 7 and 8	77.45	74.65	784.65		
MW-91-1	3-10	Existing monitoring wells will be sampled to assess the current groundwater quality conditions.	8/7/1991	4.0	0.010 Slot Sch. 40 PVC	859.96	69	-	79	790.96	-	780.96	Unit 5 and 7	57.46	NL			
MW-91-2	3-10		8/23/1991	4.0	0.010 Slot Sch. 40 PVC	863.75	68	-	78	795.75	-	785.75	Unit 5 and 7	63.18	NA			
MW-91-3	3-10		7/24/1991	2.0	Open Borehole	861.9	105	-	117	756.90	-	744.90	Unit 5, 7 and 8	67.20	NL			
MW-91-4	3-10		7/25/1991	2.0	Open Borehole	856.04	116	-	133	740.04	-	723.54	Unit 5 and 7	60.00	65.90	790.14		
MW-91-5	3-10		7/31/1991	2.0	Open Borehole	860.94	112.5	-	128	748.44	-	732.94	Unit 5 and 7	63.03	70.85	790.09		
MW-91-6	3-10		8/2/1991	2.0	Open Borehole	852.09	82	-	98	770.09	-	754.09	Unit 5, 7 and 8	59.81	NL			
MW-93-1	3-10		10/18/1993	2.0	0.010 Slot Sch. 40 PVC	866.13	65	-	75	801.13	-	791.13	Unit 5	60.00	DRY	DRY		
MW-93-2	3-10		10/30/1993	2.0	0.010 Slot Sch. 40 PVC	863.69	65	-	75	798.69	-	788.69	Unit 5	Not Recorded	DRY	DRY		
MW-93-3	3-10		10/31/1993	2.0	0.010 Slot Sch. 40 PVC	863.8	66	-	76	798.02	-	787.80	Unit 5	66.00	NL			

TABLE 3
RACER TRUST LANSING PLANT 3
RFI WORKPLAN MATRIX - HYDROGEOLOGOC TABLE

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

Plant 3 Hydrogeology

The first saturated zone at Plant 3 is contained within Unit 2 at a depth of approximately 6 to 7 ft bgs. Groundwater in this zone is intermittently encountered. This shallow saturated zone appears to be perched as indicated by the presence of an unsaturated zone located between the shallow saturated zone and a deeper saturated zone identified in Unit 4. There are no monitoring wells completed in the perched groundwater zone: however, there is a French Drain beneath the former plating area (FPA) (AOI 3-10) that collects groundwater in the shallow saturated zone. The French Drain currently collects a limited volume of water (200 gallons/month or 0.891 cubic ft [cf]/day).

ARCADIS developed a groundwater flow model to evaluate the effectiveness of the French Drain (BBL, 2003 and 2004a). The model indicated that groundwater gradients are directed toward the French Drain but in general, groundwater capture within the perched zone is limited and is affected by the downward hydraulic gradients that exist within the perched saturated zone.

The hydraulic properties of unconsolidated units beneath the perched zone (Unit 2) at Plant 3 were evaluated. The horizontal hydraulic conductivity was determined by conducting in situ single well response tests (slug tests), while vertical hydraulic conductivity was determined by performing laboratory hydraulic conductivity testing on Shelby tube samples.

The Shelby tube samples were collected from both Unit 3 and Unit 4 to evaluate the vertical hydraulic conductivity between the perched zone and the overburden aquifer. The slug tests were performed at three monitoring wells screened in Unit 4. Results of the slug tests indicated that the vertical hydraulic conductivities in Unit 3 range from 6.4 x 10-8 centimeters per second (cm/sec) to 2.6 x 10-8 cm/sec, and in Unit 4 range from 1.0 x 10-6 cm/sec to 4.8 x 10-5 cm/sec. These results indicate that Unit 3 is a more significant barrier to downward contaminant migration than Unit 4 and that the locations where Unit 4 is in direct contact with Unit 2 represent potential preferred pathways for downward migration. Slug tests performed in the overburden (Unit 4) aquifer indicated that horizontal hydraulic conductivities ranged from 2.6 x 10-5 cm/sec to 3.6 x 10-5 cm/sec. Boring logs are [provided in Appendix J of the CCR and the lithology is portrayed in cross sections on Figure 9 of CCR.

Groundwater levels measured from the overburden aquifer show groundwater flow is generally north-northwest. Bedrock groundwater flow is generally east-southeast (Figures 8, 9, 25 and 26 of the CCR). Groundwater elevations in Unit 4 are greater than the bedrock groundwater elevations across Plant 3, indicating a downward vertical gradient between the two units. The convergence of groundwater heads between the two units northwest of Building 301 suggests that groundwater in Unit 4 ultimately discharges to the bedrock northwest of the Plant 3 buildings. In addition, the elevation of the Grand River is approximately 800 ft, which is higher in elevation than the Unit 4 groundwater elevations. Therefore, the river is not acting as a discharge point for the overburden or bedrock aquifer.

As previously discussed, groundwater from the bedrock aquifer is used as a drinking-water source in the Lansing Area. There are 12 production wells to the east and northeast of Plant 3 within a one-mile radius. It is assumed that these wells are still active. Based on the location of these wells, it appears that the bedrock groundwater flow direction in the western portion of Plant 3 is partially influenced by the presumed pumping of the wells to the south-southwest. The overburden aquifer present in Unit 4 and the bedrock aquifer have different flow directions; therefore, it appears that these two units are hydraulically separated in the vicinity of Plant 3 and that the overburden aquifer is not directly influenced by the pumping of the City of Lansing's groundwater production wells. The overburden groundwater flow appears to be influenced by the bedrock topography, which slopes from southeast to north.

Notes:
1. Elevations relative to MW-19, MW-21, MW-22, MW-23 and MW-24 are site specific and no site specific benchmark information is available.
AOI = Area of Interest
AST = Aboveground Storage Tank
UST = Underground Storage Tank
Sch. 40 PVC - Schedule 40 Polyvinyl Chloride
ft bgs = feet below ground surface
SVOCs = Semi-Volatile Organic Compounds
VOCs = Volatile Organic Compounds
TAL = target analyte list (for metals) - note: will include speciation of chromium (trivalent and hexavalent)
TCL =target compound list (for VOCs and SVOCs)
NL = Monitoring well has been abandoned or was not located during the 8/30/2010 well inventory/gauging event.
NA = Monitoring well was located but could not be accessed during the 8/30/2010 well inventory/gauging event.
NM = Monitoring well was not measured into elevation survey.
NAD 83 = North America Datum 1983 coordinate system

***Geologic Unit Descriptions**
Unit 1 - Topsoil: some sand, fine gravel, and silt
Unit 2 - Fill Sand and Clay used as backfill: sandy silt and sandy silty clay (SP, ML, CL)
Unit 3 - Clay: sandy silty clay with varying amounts of fine to coarse sand and fine gravel (CL)
Unit 4 - Sand: sandy silt and sandy silty clay (SP, ML, CL)
Unit 5 - Silt and Sand: interbedded fine to coarse sands, silts, and sandy silts with varying amounts of fine to medium gravel.
Unit 6 - Clay: sandy clay and gravel lens (CL)
Unit 7 - Bedrock: sandstones and siltstones of the Saginaw Formation
Unit 8 - Bedrock: shale of the Saginaw Formation

TABLE 3
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX - HYDROGEOLOGOC TABLE

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

Plant 6 - Well Inventory

Well ID	Nearby AOIs	Purpose	Date of Installation	Well Construction		TOC Elevation (NAD 83)	Screen / Open Borehole Interval (ft bgs)			Relative Screen Elevation Interval (NAD 83)			Geologic Unit	Initial Depth to Water (ft bgs)	Depth to Water (ft below toc) (8/18/2010 and 8/30/2010)	Groundwater Elevation (NAD 83) (8/18/2010 and 8/30/2010)	Sampling	Proposed Analytical Parameters
				Diameter of Well Casing	Well Construction													
Existing Monitoring Wells																		
MW-02-01	6-18	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the former USTs.	11/7/2002	2.0	0.010 Slot Sch. 40 PVC	866.33	35	-	45	831.33	-	821.33	Unit 4, 5, and 6	40.0	28.88	837.45	Sample each accessible well	TCL VOCs, TCL SVOCs, TAL Metals for groundwater samples
MW-02-02			11/8/2002	2.0	0.010 Slot Sch. 40 PVC	868.44	35	-	45	833.44	-	823.44	Unit 4, 5, and 6	39.0	31.62	836.82		
MW-02-03			11/11/2002	2.0	0.010 Slot Sch. 40 PVC	869.87	35	-	45	834.87	-	824.87	Unit 4, 5, and 6	37.5	31.82	838.05		
MW-03-01			7/28/2003	2.0	0.010 Slot Sch. 40 PVC	861.85	28	-	33	833.85	-	828.85	Unit 4, 5, and 6	30.0	24.19	837.66		
MW-03-02			7/29/2003	2.0	0.010 Slot Sch. 40 PVC	864.91	30.0	-	40.0	834.91	-	824.91	Unit 4 and 5	31.5	23.82	841.09		
MW-03-03			7/30/2003	2.0	0.010 Slot Sch. 40 PVC	865.05	34	-	39	831.05	-	826.05	Unit 4 and 5	20.0	NL	NL		
MW-03-04			7/30/2003	2.0	0.010 Slot Sch. 40 PVC	865.81	33	-	43	832.81	-	822.81	Unit 4, 5, and 6	35.0	23.97	841.84		
MW-03-05			8/14/2003	2.0	0.010 Slot Sch. 40 PVC	869.15	35	-	45	834.15	-	824.15	Unit 5 and 6	35.0	32.66	836.49		
MW-03-06			7/31/2003	2.0	0.010 Slot Sch. 40 PVC	870.81	30	-	40	840.81	-	830.81	Unit 6	36.0	36.91	833.90		
MW-03-07			7/31/2003	2.0	0.010 Slot Sch. 40 PVC	867.16	30	-	40	837.16	-	827.16	Unit 4 and 5	24.0	27.64	839.52		
5 wells			(see comments)	2.0	0.010 Slot Sch. 40 PVC	869.41	35	-	45	834.41	-	824.41	Unit 5 and 6	35.0	34.33	835.08		
MW-04-01			9/29/2004	2.0	0.010 Slot Sch. 40 PVC	867.20	78	-	88	789.20	-	779.20	Unit 8	35.0	82.16	785.04		
MW-04-02			10/6/2004	2.0	0.010 Slot Sch. 40 PVC	871.03	36	-	46	835.03	-	825.03	Unit 5 and 6	36.0	NL	NL		
MW-04-03		Existing monitoring wells will be sampled to assess the current groundwater quality conditions.	10/7/2004	2.0	0.010 Slot Sch. 40 PVC	870.78	35	-	45	835.78	-	825.78	Unit 4 and 6	36.0	NL	NL		
MW-04-04			10/12/2004	2.0	0.010 Slot Sch. 40 PVC	870.77	98	-	108	772.77	-	762.77	Unit 8	36.0	NL	NL		
MW-04-05			10/8/2004	2.0	0.010 Slot Sch. 40 PVC	858.57	20	-	30	838.57	-	828.57	Unit 4	10.0	10.62	847.95		
MW-04-06			10/11/2004	2.0	0.010 Slot Sch. 40 PVC	858.70	88	-	98	770.70	-	760.70	Unit 8	9.0	71.86	786.84		
SME-MW-2			ID	2.0	0.010 Slot Sch. 40 PVC	ID	ID	-	ID	ID	-	ID	ID	ID	34.24	ID		
SME-MW-4			ID	ID	ID	ID	ID	-	ID	ID	-	ID	ID	ID	NL	NL		
MW-1	6-17 (Historically associated with 6-7)	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the former USTs.	3/13/1998	ID	ID	ID	ID	-	ID	ID	-	ID	ID	ID	NL	NL		
MW-2			ID	ID	ID	ID	ID	-	ID	ID	-	ID	ID	ID	NL	NL		
MW-3			ID	ID	ID	ID	ID	-	ID	ID	-	ID	ID	ID	NL	NL		
MW-4			ID	ID	ID	ID	ID	-	ID	ID	-	ID	ID	ID	NL	NL		
MWBP-10-UST1-4			8/28/1991	2.0	0.010 Slot Sch. 40 PVC	ID	ID	-	ID	ID	-	ID	Unit 4 and 5	10.0	NL	NL		
MWBP-10A-UST1-4			10/31/1993	2.0	0.010 Slot Sch. 40 PVC	867.10	28	-	38	839.10	-	829.10	Unit 5, 6, and 7	28.0	NL	NL		
MWBP-11-UST1-4			8/27/1991	2.0	0.010 Slot Sch. 40 PVC	Boring Log claims no well was installed, map shows otherwise									NL	NL		
MWBP-12-UST1-4		Existing monitoring wells will be sampled to assess the current groundwater quality conditions.	8/27/1991	2.0	0.010 Slot Sch. 40 PVC	ID	ID	-	ID	ID	-	#VALUE!	Unit 4	Not Recorded	NL	NL		
MWBP-12A-UST1-4			10/30/1993	2.0	0.010 Slot Sch. 40 PVC	869.93	28	-	38	841.93	-	831.93	Unit 5, 6, and 7	35.0	33.20	836.73		
MWBP-13-UST1-4			8/27/1991	2.0	0.010 Slot Sch. 40 PVC	ID	ID	-	ID	ID	-	#VALUE!	Unit 4 and 5	20.0	NL	NL		
MWBP-13A-UST1-4			10/31/1993	2.0	0.010 Slot Sch. 40 PVC	869.96	28	-	38	841.96	-	831.96	Unit 6 and 7	35.0	33.40	836.56		
MWBP-10-UST5-6	6-13 and 6-16	Monitoring wells were installed to understand the subsurface conditions, the localized groundwater flow at the Site, and the groundwater conditions for the investigation of the former USTs.	10/19/1993	2.0	0.010 Slot Sch. 40 PVC	867.89	28	-	38	839.89	-	829.89	Unit 3, 4, and 5	36.0	31.80	836.09		
MWBP-11A-UST5-6			11/17/1993	2.0	0.010 Slot Sch. 40 PVC	869.12	28	-	38	841.12	-	831.12	Unit 4, 5, and 7	34.0	NL	NL		
MWBP-12UST5-6		Existing monitoring wells will be sampled to assess the current groundwater quality conditions.	11/16/1993	2.0	0.010 Slot Sch. 40 PVC	869.40	28	-	38	841.40	-	831.40	Unit 3, 4, and 5	36.0	33.15	836.25		

TABLE 3
RACER TRUST LANSING PLANT 6
RFI WORKPLAN MATRIX - HYDROGEOLOGOC TABLE

REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE TRUST
LANSING, MICHIGAN

Proposed Monitoring Well	Nearby AOIs	Purpose	Depth	Proposed Analytical Parameters	Comments
One overburden monitoring well will be installed southeast of AOI 6-47.	6-47	To better define groundwater flow characteristics and characterize groundwater quality in the vicinity of the Former Plating Area	The monitoring well is to be installed in the first saturated zone (depth varies based on location).	TCL VOCs, TCL SVOCs, and TAL metals for soil samples TCL VOCs, TCL SVOCs, TAL metals for groundwater samples	The appropriateness of nested wells at these specific locations will be assessed after the Phase I data is evaluated.

Plant 6 Hydrogeology

The interpretation of the Plant 6 hydrogeology is based on soil borings and monitoring wells installed to investigate AOI 6-18, as defined in the Draft Investigation Report, GM Lansing Plant #6, AOI 1 (BBL, 2005c).
In the available boring logs (Appendix J of the CCR) and the cross sections (Figure 11 of CCR), an intermittent saturated zone is encountered at the base of Unit 1 (fill) at a depth of approximately 15 to 21 ft bgs. This intermittent saturated zone appears to be isolated in some instances from the deeper overburden aquifer within Units 4 and 5 by an unsaturated zone located at the top of Unit 4 suggesting that it is perched.
Shelby tube samples were collected from Unit 4 to evaluate the vertical hydraulic conductivity and soil classifications of this unit. Results from the falling-head permeability tests on the Shelby tube samples indicate that the vertical permeability (or hydraulic conductivity) of Unit 4 ranges from 6.4 x 10-8 cm/sec in MW-02-03 to 2.6 x 10-8 cm/sec in the sampled boring locations. These data indicate limited potential for downward migration of groundwater from the uppermost isolated saturated zone to Unit 5.
The zone of saturation is encountered in Units 4 and 5; however, the water table surface is generally located in Unit 4. The unsaturated zone between the intermittent saturated zone and the overburden aquifer is composed of low-permeability soils at the top of Unit 4, as shown by vertical hydraulic conductivity measurements discussed previously. This unsaturated zone appears to provide a layer of protection for the overburden aquifer from contaminants that may be present in the shallow soils. Groundwater flow at Plant 6 within the overburden aquifer is to the southeast and the southwest, with a slight groundwater high in the center of AOI 1 that diverts groundwater flow to the northeast and southwest. A groundwater high is located off-site (at the northeast quarter of Plant 6), with groundwater flow coming onto Plant 6 and flowing southwest.
Based on borings and monitoring wells completed in the bedrock at Plant 6, the Grand River-Saginaw aquifer was encountered at Plant 6. The groundwater flow direction of the bedrock aquifer is north and very slightly northeast. There appears to be an unsaturated zone between the overburden aquifer and the bedrock that has likely been caused by pumping the bedrock aquifer for water supply purposes. This unsaturated zone and the fact that the groundwater flow of the overburden aquifer and bedrock aquifers are not the same indicates that these two zones are not hydraulically connected.

Notes:
AOI = Area of Interest
AST = Aboveground Storage Tank
UST = Underground Storage Tank
Sch. 40 PVC =Schedule 40 Polyvinyl Chloride
ft bgs = feet below ground surface
SVOCs = Semi-Volatile Organic Compounds
VOCs = Volatile Organic Compounds
TAL = target analyte list (for metals) - note: will include speciation of chromium (trivalent and hexavalent)
TCL = target compound list (for VOCs and SVOCs)
NL = Monitoring Well has been abandoned or was not located during the 8/30/2010 well inventory/gauging event.
ID = Insufficient Data, Information regarding monitoring wells was not found and/or monitoring wells were surveyed using site-specific survey coordinates.
NAD 83 = North America Datum 1983 coordinate system

Geologic Unit Descriptions
Unit 1 - Fill: sand, gravel, some clay, slag, metal and wood present
Unit 2 - Organic Clay (CL): soft, plastic clay with 'peaty' odor, silt
Unit 3 - Sand, Silt, and Silty Sand (SM)
Unit 4 - Clay with sand seams (CL): clay, sandy clay, silty clay, some sand and gravel seams
Unit 5 - Sand and Silt (SM): silty sand and sandy silt.
Unit 6 - Clay, Silty Clay, and Silt (CL/MH): silt, silty sand, some silty clay, sand and gravel.
Unit 7 - Sand and Gravel (SW/GW)
Unit 8 - Sandstone of the Saginaw Formation

TABLE 4
RACER TRUST LANSING PLANTS 2, 3 AND 6
TARGET ANALYTE LIST FOR METALS AND TARGET COMPOUND LIST VOC'S AND SVOC'S
TRL'S, MDL'S, LAB PQL'S AND DESIGNATED ANALYTCIAL METHODS

LANSING, MICHIGAN

Compound	Water (µg/L)			Soil (µg/kg)			Designated Analytical Methods (4)
	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	
Volatiles							**Volatiles (See Op. Memo 2, Attachment 6)**
Acetone	50	4.0	25	1000	126	750	8260 B
Benzene	1	0.1	1	50	4.6	50	8260 B
Bromodichloromethane	1	0.2	1	100	4.8	50	8260 B
Bromoform	1	0.2	1	100	7	50	8260 B
Bromomethane	5	0.4	2	{200}	12.6	250	8260 B
2-Butanone	25	1.4	25	750	53.6	750	8260 B
Carbon Disulfide	5	0.1	5	250	9.6	250	8260 B
Carbon Tetrachloride	1	0.1	1	50	2.8	50	8260 B
Chlorobenzene	1	0.1	1	50	3.1	50	8260 B
Chloroethane	5	0.2	1	250	11.3	250	8260 B
Chloroform	1	0.1	1	50	5.3	50	8260 B
Chloromethane	5	0.2	1	250	6.1	250	8260 B
Cyclohexane	NA	0.1	1	NA	5.7	50	8260 B
Dibromochloromethane	5	0.2	1	100	7.5	50	8260 B
1,2-Dibromo-3-chloropropane (Dibromochloropropane)	0.2[3]	0.1	TBD	**[{10}][3]**	28	50	8260 B
1,2-Dibromomethane (Ethylene dibromide)	0.05[3]	0.2	TBD	**[{20}]**	3.0	50	8260 B
Dichlordifluoromethane	5	0.3	TBD	250	9.0	50	8260 B
1,2-Dichlorobenzene	1	0.1	1	100	7.7	50	8260 B
1,3-Dichlorobenzene	1	0.1	1	100	7.3	50	8260 B
1,4-Dichlorobenzene	1	0.1	1	100	6.1	50	8260 B
1,1-Dichloroethane	1	0.1	1	50	4.9	50	8260 B
1,2-Dichloroethane	1	0.2	1	50	11.0	50	8260 B
1,1-Dichloroethene	1	0.1	1	50	7.6	50	8260 B
cis-1,2-Dichloroethene	1	0.1	1	50	3.6	50	8260 B
trans-1,2-Dichloroethene	1	0.1	TBD	50	6.3	50	8260 B
1,2-Dichloropropane	1	0.1	1	50	7	50	8260 B
cis-1,3-Dichloropropene	1	0.1	1	50	2.6	50	8260 B
trans-1,3-Dichloropropene	1	0.1	1	50	5.6	50	8260 B
1,4-Dioxane [5]	5	1.0	1	500	500.0	500	8260 B
Ethylbenzene	1	0.1	1	50	3.1	50	8260 B
2-Hexanone	50	0.3	50	2500	17	2500	8260 B
Isopropylbenzene	5	0.1	TBD	250	4.4	50	8260 B
Methyl Acetate	NA	0.3	10	NA	35.1	2500	8260 B
Methyl Cyclohexane	NA	0.2	20	NA	6	50	8260 B
4-Methyl-2-pentanone	50	0.1	50	2500	11.2	2500	8260 B
Methyl tert-butyl ether (MTBE)	5	0.2	5	250	6.0	250	8260 B
Methylene Chloride	5	0.2	5	{100}	7.9	250	8260 B
Styrene	1	0.1	1	50	4.0	50	8260 B
1,1,2,2-Tetrachloroethane	1.0	0.2	1	50	8.2	50	8260 B
Tetrachloroethene	1	0.1	1	50	25.7	50	8260 B
Toluene	1	0.1	1	100	3.5	50	8260 B
1,1,1-Trichloroethane	1	0.1	1	50	3.8	50	8260 B
1,1,2-Trichloroethane	1	0.2	1	50	8.2	50	8260 B
Trichloroethene	1	0.2	1	50	9.1	50	8260 B
1,2,4-Trichlorobenzene	5	0.2	2	330	8	100	8260 B
Trichlorofluoromethane	1	0.1	20	100	7.1	100	8260 B
Trifluorotrichloroethane (Freon 1	NA	0.3	30	NA	12	100	8260 B
Vinyl Chloride	1.0	0.2	1	40	6.7	100	8260 B
m&p-Xylene	2	0.1	1	100	5.3	50	8260 B
o-Xylene	1	0.1	1	50	3.4	50	8260 B
Xylenes (total)	3	0.5	3	150	18.2	100	8260 B
Semivolatiles							**Semivolatiles**
Acenaphthene	5	0.1	5	330	2	330	8270 C
Acenaphthylene	5	0.4	5	330	1	330	8270 C
Acetophenone	5	0.1	5	330	3	330	8270 C
Anthracene	5	0.1	5	330	2	330	8270 C
Atrazine	3.0	0.1	3	50	3	330	8270 C
1,1-Biphenyl	NA	0.04	5	NA	1	330	8270 C
Benzaldehyde	NA	0.1	5	NA	2	330	8270 C

TABLE 4
RACER TRUST LANSING PLANTS 2, 3 AND 6
TARGET ANALYTE LIST FOR METALS AND TARGET COMPOUND LIST VOC'S AND SVOC'S
TRL'S, MDL'S, LAB PQL'S AND DESIGNATED ANALYTCIAL METHODS

LANSING, MICHIGAN

Compound	Water (µg/L)			Soil (µg/kg)			Designated Analytical Methods (4)
	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	
Benzo(a)anthracene	1.0	0.1	1	330	2	330	8270 C
Benzo(a)pyrene	**[1]**	0.1	2	330	3	330	8270 C
Benzo(b)fluoranthene	1[4]	0.1	2	330	3	330	8270 C
Benzo(g,h,i)perylene	**[1]**	0.07	5	330	11	330	8270 C
Benzo(k)fluoranthene	**[1]**	0.1	5	330	4	330	8270 C
bis(2-Chloroethoxy)methane	5	0.1	5	330	2	330	8270 C
bis(2-Chloroethyl)ether	1.0	0.1	1	100	2	330	8270 C
bis(2-Ethylhexyl)phthalate	5	0.2	5	330	7	330	8270 C
4-Bromophenyl-phenylether	5	0.1	5	330	5	330	8270 C
Butylbenzylphthalate	5	0.2	5	330	8	330	8270 C
Caprolactam	10	0.3	10	330	11	330	8270 C
Carbazole	**[10]**	0.1	10	330	4	330	8270 C
4-Chloro-3-Methylphenol	5	0.1	5	280	4	330	8270 C
4-Chloroaniline	10	0.1	20	330	4	670	8270 C
2-Chloronaphthalene	5	0.1	5	330	2	330	8270 C
2-Chlorophenol	10	0.1	5	330	3	330	8270 C
4-Chlorophenyl-phenylether	5	0.03	5	330	1	330	8270 C
2,2'-oxybis(1-Chloropropane) [bis(2-Chloroisopropyl) ether]	5	2.3	5	330	78	330	8270 C
Chrysene	1.0	0.1	5	330	3	330	8270 C
2-Methylphenol	10	0.1	5	330	3	330	8270 C
3-Methylphenol	10	0.2	5	330	6	330	8270 C
4-Methylphenol	10	0.2	5	330	6	330	8270 C
Di-n-Butylphthalate	5	0.1	5	330	3	330	8270 C
Di-n-Octylphthalate	5	0.2	5	330	7	330	8270 C
Dibenzo(a,h)anthracene	**[2]**	0.08	2	330	10	330	8270 C
Dibenzofuran	4	0.1	5	330	3	330	8270 C
3,3'-Dichlorobenzidine	**[0.3]**	0.7	20	**[2000]**	23	670	8270 C
2,4-Dichlorophenol	10	0.1	10	330	4	330	8270 C
Diethylphthalate	5	0.1	5	330	3	330	8270 C
Dimethylphthalate	5	0.1	5	330	3	330	8270 C
2,4-Dimethylphenol	5	0.1	5	330	4	330	8270 C
4,6-Dinitro-2-methylphenol	**[20]**	1.1	20	**[830]**	37	670	8270 C
2,4-Dinitrophenol	25	0.1	20	830	4	670	8270 C
2,4-Dinitrotoluene	5	0.2	5	330	7	330	8270 C
2,6-Dinitrotoluene	5	0.1	5	330	3	330	8270 C
Fluoranthene	1	0.1	5	330	4	330	8270 C
Fluorene	5	0.1	5	330	2	330	8270 C
Hexachlorobenzene	0.2[3]	0.2	5	330	6	330	8270 C - (SIM)
Hexachlorobutadiene	0.05[3]	0.1	5	50	3	330	8270 C - (SIM)
Hexachlorocyclopentadiene	5.0	0.2	5	330	8	330	8270 C
Hexachloroethane	5	0.1	5	300	4	330	8270 C
Indeno(1,2,3-cd)pyrene	**[2]**	0.08	2	330	10	330	8270 C
Isophorone	5	0.1	5	330	3	330	8270 C
2-Methylnaphthalene	5	0.1	5	330	2	330	8270 C
Naphthalene	5	0.1	5	330	2	330	8270 C
2-Nitroaniline	25	0.2	20	830	6	670	8270 C
3-Nitroaniline	25	0.1	20	830	4	670	8270 C
4-Nitroaniline	25	0.2	20	830	6	670	8270 C
Nitrobenzene	3	0.1	2	330	3	170	8270 C
2-Nitrophenol	5	0.1	5	330	5	330	8270 C
4-Nitrophenol	25	0.4	20	830	14	670	8270 C
N-Nitroso-di-n-propylamine	**[5]**	0.1	5	**[330]**	2	330	8270 C
N-Nitrosodiphenylamine	5	0.4	5	330	4	330	8270 C
Pentachlorophenol	1[3]	0.1	20	20[3]	2	670	8270 C
Phenanthrene	2.0	0.1	5	330	2	330	8270 C
Phenol	5	0.1	5	330	2	330	8270 C
Pyrene	5	0.04	5	330	10	330	8270 C
2,4,5-Trichlorophenol	5	0.2	5	330	6	330	8270 C
2,4,6-Trichlorophenol	4	0.1	5	330	5	330	8270 C
Metals							**Metals**
Antimony	2	1.0	2	**[300]**	20	300	SW-846 Methods 6000 & 7000
Arsenic	5	0.31	2	100	62	100	SW-846 Methods 6000 & 7000

TABLE 4
RACER TRUST LANSING PLANTS 2, 3 AND 6
TARGET ANALYTE LIST FOR METALS AND TARGET COMPOUND LIST VOC'S AND SVOC'S
TRL'S, MDL'S, LAB PQL'S AND DESIGNATED ANALYTCIAL METHODS

LANSING, MICHIGAN

Compound	Water (µg/L)			Soil (µg/kg)			Designated Analytical Methods (4)
	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	Target Detection Limit[1]	Laboratory MDL[2]	Laboratory PQL[2]	
Barium	100	0.1	10	1000	20	1000	SW-846 Methods 6000 & 7000
Beryllium	**[1]**	0.1	1	500	20	100	SW-846 Methods 6000 & 7000
Boron	**10**	2	50	2000	80	2000	SW-846 Methods 6000 & 7000
Cadmium	1	0.14	0.5	200	27	50	SW-846 Methods 6000 & 7000
Chromium	10	0.076	5	2000	15	500	Cr(VI): Soil 3060A/7199; Water 7199
Cobalt	20	0.069	5	500	14	500	SW-846 Methods 6000 & 7000
Copper	4	0.079	10	1000	16	1000	SW-846 Methods 6000 & 7000
Cyanide	NA	4	5	100[3]	80	100	EPA Method 335.4
Lead	3	0.024	3.0	1000	5	1000	See MDEQ Lab SOP #213
Manganese	50	0.012	5	1000	2	500	SW-846 Methods 6000 & 7000
Mercury	NA	0.006	NA	**[50]**	0.3	100	7000 series
Low-Level Mercury	0.001[3]	0.000473	0.0005	NA	NA	NA	1631
Nickel	20	0.01	5	1000	19	500	SW-846 Methods 6000 & 7000
Selenium	5	0.6	5	200	120	200	SW-846 Methods 6000 & 7000
Silver	**[0.2]**	0.073	0.5	**[100]**	15	200	SW-846 Methods 6000 & 7000
Thallium	2.0	0.066	1	500	13	100	SW-846 Methods 6000 & 7000
Vanadium	4	0.044	5	1000	9	500	SW-846 Methods 6000 & 7000
Zinc	50	0.25	10	1000	49	1000	SW-846 Methods 6000 & 7000
PCB's	0.2	.01	.01	330	0.2	330	8082 8270C

NOTES:

NA Not available/Not applicable
MDL Method Detection Limit
PQL Practical Quantitation Level
TBD To be determined

{} For volatile organics, target detection limits (TDLs) enclosed with { } brackets indicate that the low level soil method may be required to reach a risk-based criteria. Check with the laboratory to determine if risk-based criteria can be reached for methanol-preserved samples, to determine if the low level method must be used

[ ] The TDLs in bold type and enclosed with [ ] brackets indicate that the contaminant's TDL is higher than the most restrictive criteria.

(1) The TDLs for groundwater and soil are based on the TDLs defined in Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division Memorandum No. 2 (February 2, 2005).

(2) The MDLs and PQLs listed are current as of March 2005 and may differ slightly during future data reporting.

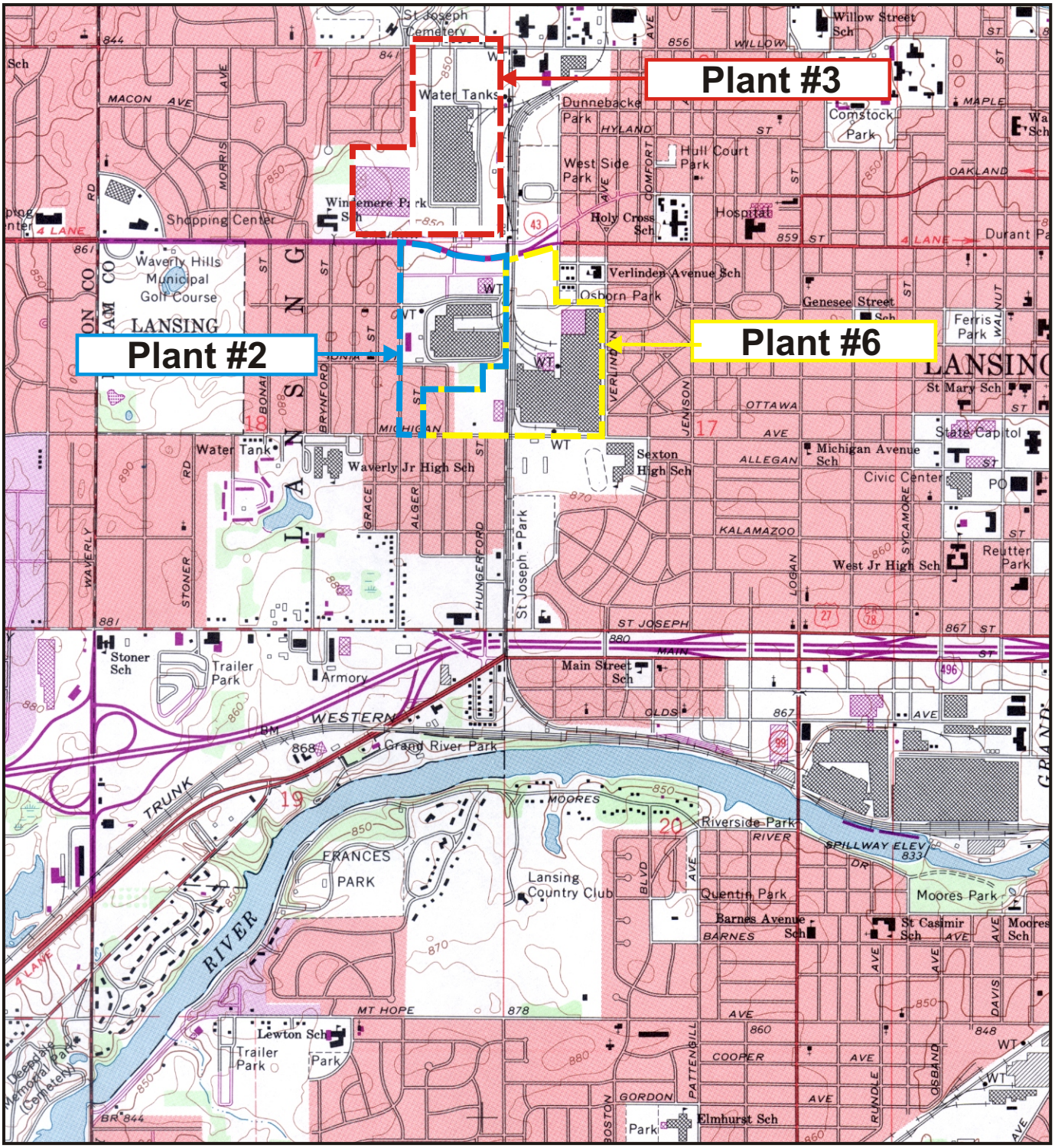
(3) In some instances, the TDL is below the MDL, indicating that the MDEQ TDL is not currently achievable by the lab. If it is necessary to achieve the TDL, a selective ion mass spectrometry (SIM) test can be performed.

(4) Target Detection Limits and Designated Analytical Methods are based on MDEQ RRD Operational Memo No. 2 - Attachment 1, dated October 22, 2004.

(5) When analyses of these compounds are requested using GC/MS, SIM analyses must be conducted on all samples with no detects found in the full scan. Positive detects in the SIM mode should then be appropriately coded to indicate SIM analyses were conducted.

ARCADIS

Figures



REFERENCE: BASE MAP SOURCE: USGS 7.5 MIN. QUAD., LANSING SOUTH, MICHIGAN, 1965.

2000' 0 2000'

Approximate Scale: 1" = 2000'

Area Enlargement

MOTORS LIQUIDATION COMPANY
LANSING, MICHIGAN

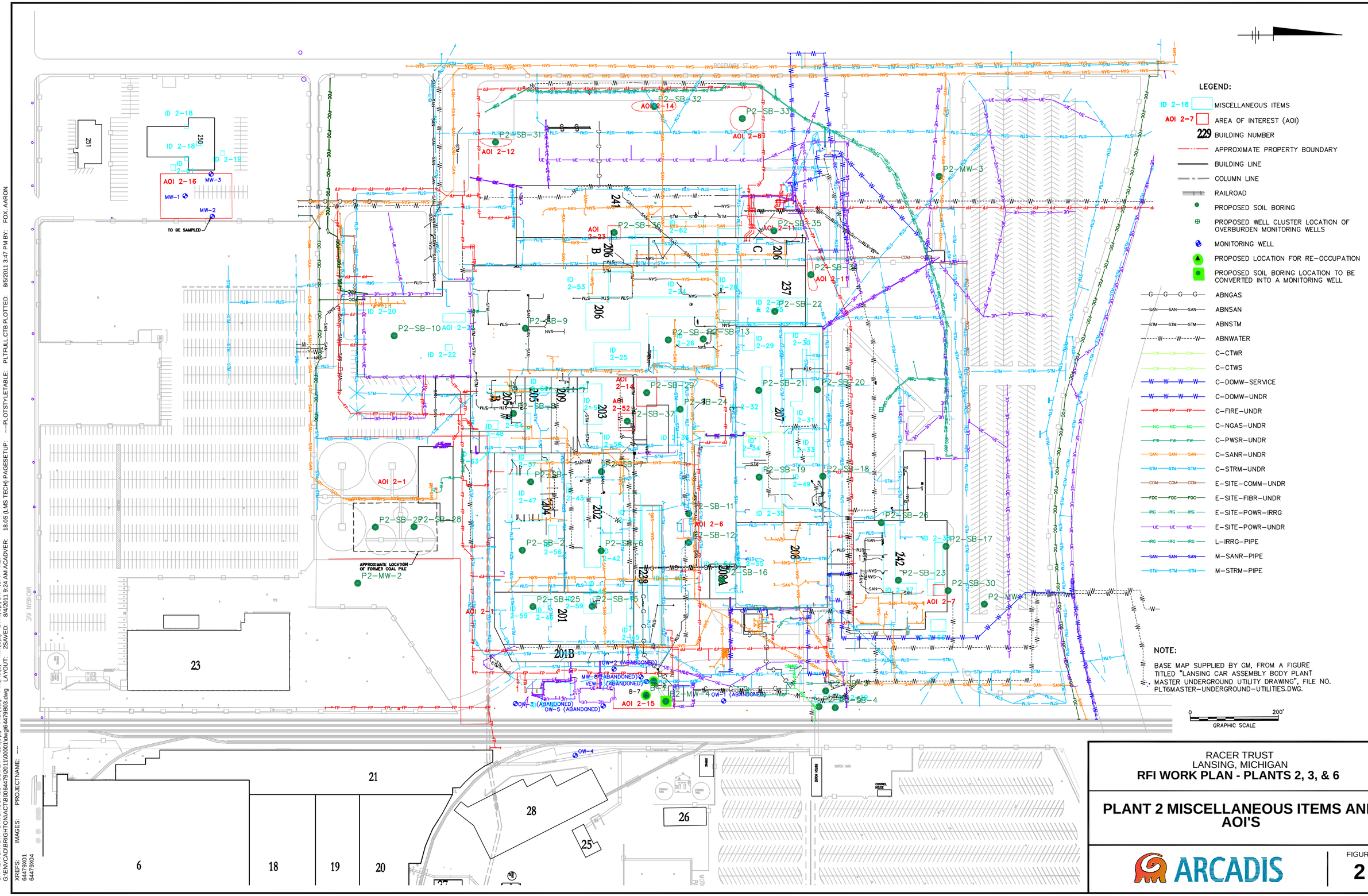
RFI WORK PLAN - PLANTS 2, 3, & 6

SITE LOCATION MAP

ARCADIS

FIGURE
1

08/26/2010 SYR-141ENV-DJHOWES
B0064479/2010/00001/CDR/64479N02.CDR

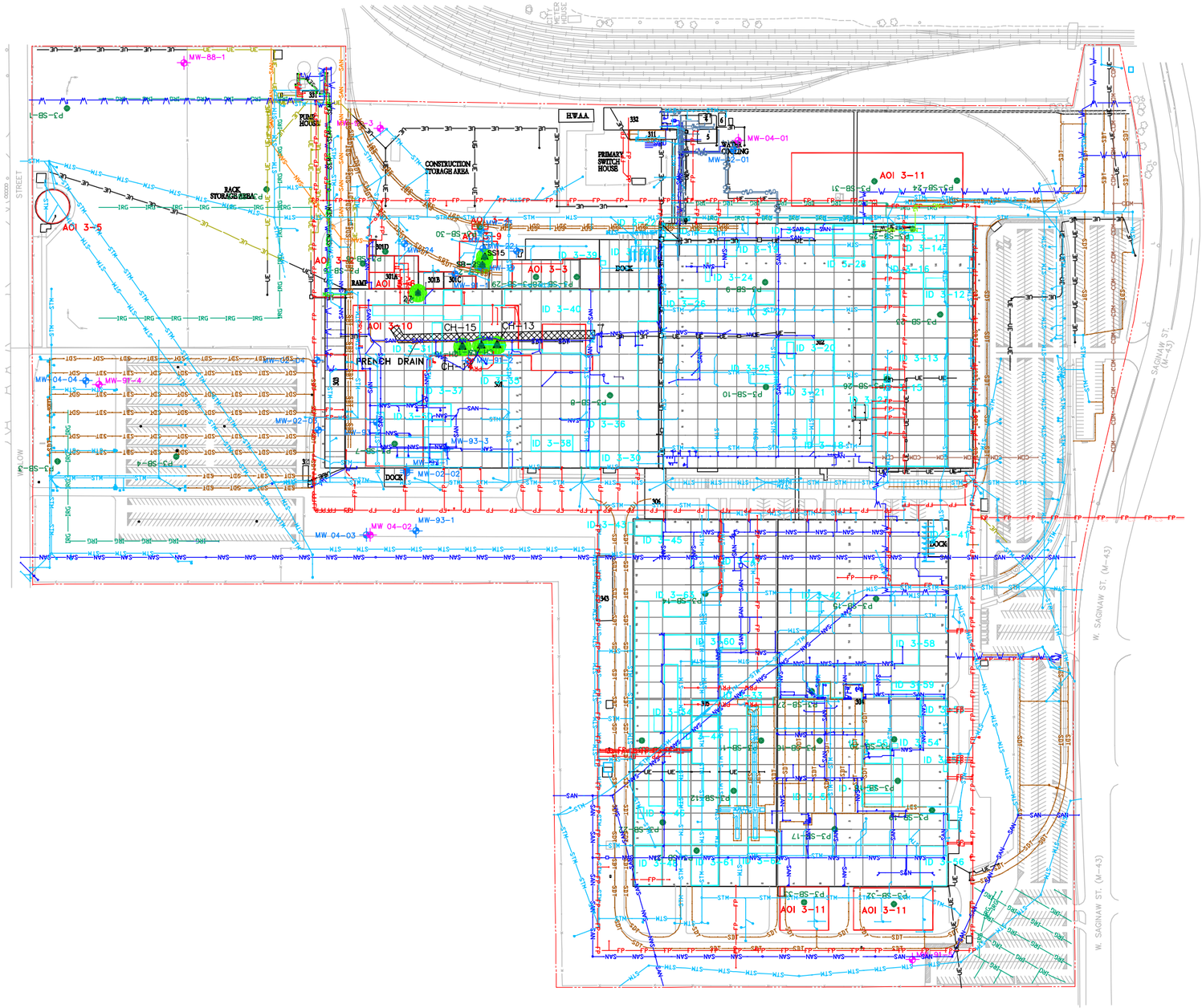


RACER TRUST
LANSING, MICHIGAN
RFI WORK PLAN - PLANTS 2, 3, & 6

PLANT 2 MISCELLANEOUS ITEMS AND AOI'S

ARCADIS

FIGURE
2



LEGEND:

- AOI 3-4 — AREA OF INTEREST (AOI)
- ID 3-1 — MISCELLANEOUS ITEMS
- 301 — BUILDING NUMBER
- APPROXIMATE PROPERTY BOUNDARY
- BUILDING LINE
- COLUMN LINE
- RAILROAD
- PROPOSED SOIL BORING
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- PROPOSED LOCATION FOR RE-OCCUPATION
- ABNWATER
- CECUN
- CITY_WATER
- COMMUNICATION
- CONDENSATE
- COOLING_WATER
- CSSUN
- DRAIN_TILE
- E-SITE-POWR-IRRG
- ELECT_PLANT
- FIRE_SPRINK
- LAWN_SPRINK
- LIGHT
- LIR
- M-SANR-PIPE
- M-STRM-PIPE
- NATURAL_GAS
- PERF_DRAIN_TILE
- PROCESS
- SAN-ABAND
- STEAM
- TWP_WATER
- UNKNOWN
- WASTE_OIL

NOTES:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. ALL LOCATIONS ARE APPROXIMATE

0 150' 300'
GRAPHIC SCALE

RACER TRUST
LANSING, MICHIGAN
RFI WORK PLAN - PLANTS 2, 3, & 6

PLANT 3 MISCELLANEOUS ITEMS AND AOIs

ARCADIS

FIGURE
3

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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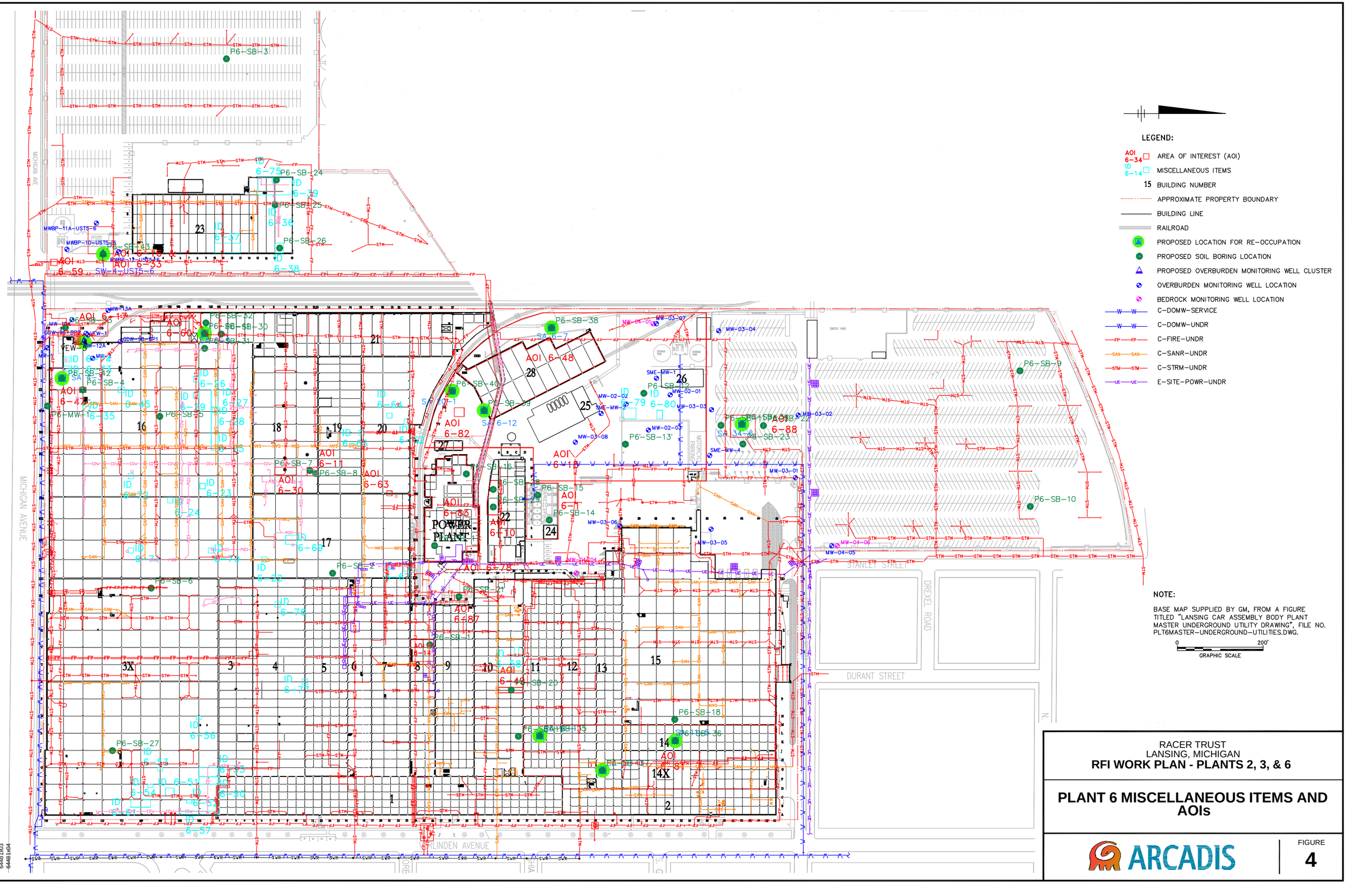
64480X02
64480X04



RACER TRUST
LANSING, MICHIGAN
RFI WORK PLAN - PLANTS 2, 3, & 6

PLANT 6 MISCELLANEOUS ITEMS AND AOIs

ARCADIS

FIGURE
4

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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XREFS: IMAGES: PROJECTNAME: ---
64481x02
64481x03
64481x04
8/19/2011 8:34 AM BY: FOX, AARON