



May 24, 2012

Ms. Michelle Kaysen

U.S. Environmental Protection Agency
Region V
77 W Jackson Blvd
Mail Code: LU-9J
Chicago, Illinois 60604

RE: Revised Groundwater Investigation Work Plan
Dort Highway Land, Grand Blanc, Michigan
FILE: 15388/ 48631

Dear Ms. Kaysen:

On behalf of Revitalizing Auto Communities Environmental Response Trust (RACER Trust), O'Brien & Gere Engineers, Inc. (O'Brien & Gere) is pleased to present this Work Plan for groundwater investigation activities at the Dort Highway Land Site located in Grand Blanc, Michigan.

The purpose of this Work Plan is to outline the proposed groundwater investigation and analytical activities to be performed at the Dort Highway Land Site (the Site). The investigation will be performed in accordance with the methods outlined in this Work Plan and the Dort Highway Land – Sampling and Analysis Plan (SAP) (O'Brien & Gere, 2011), which was submitted as Appendix F of the Site History and Current Conditions Report (O'Brien & Gere, 2011) to assess groundwater quality and flow conditions at the Site.

SITE BACKGROUND AND SETTING

The following provides a general description of the Site and Site background. It also provides a brief summary of previous investigations and remediation activities conducted at the Site. Specific details concerning Site investigation activities and methods/procedures can be found in the Dort Highway Land – Site History & Current Conditions Report (O'Brien & Gere, 2011), which summarizes these investigations, and their findings and results.

LOCATION AND DESCRIPTION

The Site is located at 10800 South Saginaw Street in Grand Blanc Township, Genesee County, Michigan in an industrial and commercial area of Grand Blanc, Michigan and fronts on Dort Highway. The Site is immediately adjacent to the General Motors LLC (GM) plant also located at 10800 South Saginaw Street, Grand Blanc, Michigan.

The Dort Highway Land Site is comprised of a 20.44 acre portion of what was formerly part of an area of the former GM Corporation site known as Area 2. Area 2 was an approximately 38.5 acre exterior area of the former GM Corporation plant located west of the plant.

The GM controlled portion of the former GM Corporation plant is now known as the Weld Tool Center (WTC) – Grand Blanc and includes the other exterior areas of the plant, the former Press Room area (that was demolished), and the remaining portion of the plant.

The Site is presently owned by the RACER Trust, which took over responsibility of the Site following the bankruptcy of General Motors Corporation (former GM Corporation), management by Motors Liquidation Company (MLC), and the creation of RACER Trust through the bankruptcy proceedings.

The Site is currently unused (*i.e.*, vacant land) and a fence encloses the property, separating it from the adjacent GM facility.

SITE BACKGROUND

The Site and the original portion of the adjacent plant were constructed in 1942 as a tank arsenal by the United States Department of Defense. The Site was initially used as a test track for the tanks manufactured at the adjacent plant, and also included a pump house and water tank utilized for water storage and firefighting. After World War II, the Site and plant were leased from the government by the Buick Motor Division and were purchased by the former GM Corporation in 1951. The Site was then used for die and other equipment and material storage during the manufacturing of automobile parts at the adjacent plant, and for water storage and firefighting.

During the Korean Emergency, Fisher Body produced Patton M-48 Medium Tanks at the plant, and the Site was again used as a tank test track. In 1955, the Site was converted to automotive body metal fabricating and the Press Room was added to the plant. The former GM Corporation stopped manufacturing automotive body parts in 2008 and began the demolition of the former Press Room, which concluded in 2010. The pump house and tank were also decommissioned and demolished during this time. GM currently fabricates, assembles and repairs robotic systems for automotive plants at the adjacent plant.

Approximately 4 feet of soils (and fill materials, including concrete and asphalt pavement) on average were stripped from the Site during the demolition of the former Press Room to fill in its basement. The soil stripping activities were completed in 2009 on the Site. Some areas were not stripped to the 4 foot depth due to encountering concrete (former water test trough for the tanks) or debris (*i.e.*, wood floor blocks).

PREVIOUS SITE INVESTIGATIONS

Two Phase I Environmental Site Assessments (ESAs) were conducted of the Site (O'Brien & Gere, 2005 and 2010); one was conducted in 2005 for GM Corporation and another was conducted in 2010 for MLC. Both Phase I ESAs were conducted to evaluate the existence of recognized environmental conditions (RECs) associated with the Site because of past or present Site activities. The RECs identified in 2005 were used to guide the Phase II ESA conducted in 2006 for the Site. The 2010 Phase I ESA only identified a couple potential RECs on the Site: 1) impacted soils that may not have been removed during the soil removal activities and 2) unearthed wood floor blocks along the southern boundary of the Site.

A Delineation Investigation was conducted in 2007 to delineate the documented surface soil impacted locations identified at the Site, which were above the MDEQ generic nonresidential groundwater and/or direct contact criteria (O'Brien & Gere, 2007). The historic soil and groundwater analytical results are presented in **Tables 1** and **2** and the historic sampling locations are shown on **Figure 1**. **Figure 5** provides data boxes for the historic (*i.e.*, 2006 Phase II and 2007 Delineation Investigation, and 2011 pre-interim remedial measure [IRM]) surface soil sample results.

On August 1, 2011, an investigation was conducted to assess the Site conditions following the 2009 soil removal activities, which consisted of the collection of twenty surface soil, five wood floor block and five soils in contact with floor block samples. A Floor Block Area Investigation occurred on September 14, 2011, which consisted of a series of shallow test pits to delineate the horizontal and vertical extent of the floor blocks at the Site. The analytical results of the Site conditions and floor block area investigations are presented in **Table 3** and the recent (2011) sample locations for the Site are shown on **Figure 2**. **Figure 6** provides data boxes for the remaining Pre-IRM surface and subsurface soil sample (2006/2007 and 2011) results.

The results of the 2011 Site conditions and floor block area investigations guided the floor block remediation activities that were conducted in December 2011 and January 2012, and consisted of removing the wood floor blocks and associated bulk soils that exceeded nonresidential direct contact criteria. **Figure 7** provides data

boxes for Pre-IRM samples that are representative of soil still at the Site after the soil stripping and 2011/2012 IRM activities, and for final confirmatory samples.

GEOLOGY AND HYDROGEOLOGY

The Site is underlain by unconsolidated glacial drift soils to depths of about 120 to 160 ft beneath the Site according to the Groundwater Resources Map Series for Grand Blanc Township (U of M – Flint, Nov. 1994). Native clay soils underlie surficial topsoil or fill soils at the Site and likely extend to the top of bedrock, and may include thin silt or sand seams within the predominantly clayey soils. Cross sections of the Site are shown on (Figure 3).

The depth to groundwater on December 7, 2006 ranged from 4.95 feet below grade (fbg) at MW2-2 to 11.33 fbg at MW2-1 (Figure 4). The groundwater elevation ranged from 828.20 feet above Mean Sea Level (ft aMSL) at MW2-2 to 820.91 ft aMSL at MW2-1. On December 22, 2006, the depth to water ranged from 4.44 ft at MW2-2 to 10.95 ft at MW2-1, which is similar to the earlier measurements and the groundwater elevation ranged from 828.71 ft aMSL at MW2-2 to 821.29 ft aMSL at MW2-1. However, MW2-1 and MW2-2 are likely not within the same water bearing unit due to the discontinuous nature of the sand and silt seams within the predominantly clayey Site soils. Therefore, it is difficult to establish an accurate groundwater flow direction for the Site. However, surface topography suggests that any continuous shallow (potentially perched) groundwater flow would be expected to generally be towards the west-northwest on the Site toward Gibson Drain, which is located about a quarter mile west of the Site.

SCOPE OF WORK

The following scope of work provides specific field sampling procedures to be utilized at the Site to conduct the groundwater investigation activities, which will include temporary monitoring well installation and groundwater sampling. Procedures will follow those described in this Work Plan and will be conducted in accordance with the SAP, except as noted herein.

HEALTH AND SAFETY

A Site-specific HASP (O'Brien & Gere, 2011) was prepared in accordance with 20 CFR 1910.120 and the RACER Health and Safety Guidelines, and submitted as Appendix G of the Site History and Current Conditions Report (O'Brien & Gere, 2011). The HASP also specifies protective measures and procedures to be followed by investigators and site visitors to minimize exposure to Site-related materials.

QUALITY CONTROL, DOCUMENT

A QCD (O'Brien & Gere, 2011) was prepared using guidance provided in the United States Environmental Protection Agency (USEPA) *Requirements for Quality Assurance Project Plans For Environmental Data Operations*, EPA QA/R-5 (USEPA 2001), and submitted as Appendix A of the SAP. The QCD describes protocols necessary to achieve the Site data quality objectives, which will be followed during the performance of the groundwater investigation activities.

UTILITY CLEARANCE

Prior to performing the groundwater investigation activities, an underground utility survey of the investigation locations will be performed to assist in clearing utilities for placing sample locations in accordance with Section 4.2 of the SAP.

GROUNDWATER TEMPORARY MONITORING INSTALLATION AND DEVELOPMENT

O'Brien & Gere will install 9 temporary monitoring wells to assess Site-specific groundwater flow conditions and potential impacts to groundwater. The locations of the proposed monitoring wells are shown on **Figure 4**. The temporary monitoring wells will be placed to allow groundwater quality and hydraulic characterization of groundwater at the Site.

Soil borings will be advanced utilizing direct push drilling techniques (Geoprobe®) using 5-ft long, 1.5 in diameter Macro-Core® samplers, with soil samples collected continuously from grade to the bottom of the boring. Once the sampling depth is reached for the sample run, the sampler will be removed from the borehole, detached from the drill rods, and the acetate sleeve will be cut length-wise and opened to allow observation of the subsurface soil. The soil samples will be visually inspected and logged by an O'Brien & Gere geologist in accordance with the Unified Soil Classification System (USCS). A portion of the sample will be retained for soil headspace screening to monitor for the presence of VOCs using a photoionization detector (PID). Soil borings will be terminated at 20 fbg or about 5 ft below the water table observed during drilling, whichever is shallower.

Temporary monitoring wells will be installed by overdrilling the Geoprobe® borings with 4.25-inch hollow stem auger drilling methods. The temporary monitoring wells will be constructed of 2-in diameter flush-joint PVC casing and a 5-ft length of 0.010-in slot PVC well screen. The well screen and riser assembly will be placed into the hollow stem augers to the desired depth and a washed graded silica sand pack will be placed around the well screen and shall extend a minimum of one foot above the top of the screen. Coarse granular bentonite will then be added to the annular space to the ground surface.

A 1/16th inch weep hole will be drilled in the well casing approximately 6 inches above grade to allow the well to equilibrate to atmospheric pressure while the well will be capped with an internal locking (J-plug) cap secured to the top of the well. The monitoring wells will be left as temporary wells with no protective casing or flushmount roadbox.

The newly installed monitoring wells will be developed to remove fine-grained materials that may have entered the well or sand pack during construction. The monitoring wells will be developed in accordance with the SAP using a surge and purge method. The development will be conducted approximately one week after installation to allow sufficient time for water to accumulate in the wells. Monitoring well MW2-1 will also be redeveloped in conjunction with the development of the newly installed monitoring wells.

Subsequent to monitoring well installation, a location and elevation survey will be performed to establish top-of-casing and grade elevations for the existing well and newly installed wells.

After completion of the groundwater investigation, and once the USEPA has made a determination that the wells are no longer necessary or useful at the site for purposes of corrective action, the temporary monitoring wells will be abandoned by knocking off the slip-cap installed at the base of the well screen and utilizing the well casing as a drop pipe for bentonite grouting. Monitoring well MW2-1 will be abandoned by over-drilling the existing well material. The ensuing borehole will be grouted with bentonite grout to the ground surface. The removed well casings and screens will be disposed of following the abandonment activities.

Please refer to Section 4.7 of the SAP for further details into the monitoring well installation and development procedures.

GROUNDWATER SAMPLING – LOW FLOW PURGING

Subsequent to installation, O'Brien & Gere will collect water levels and groundwater samples from the newly installed monitoring wells (**Figure 4**) and one existing well approximately two weeks after well development has been completed in accordance with Section 4.8 of the SAP. Groundwater samples will be analyzed for the presence of VOCs, SVOCs, RCRA dissolved metals (if the turbidity does not stabilize below 20 NTUs, in accordance with the Section 4.8 of the SAP) and total metals.

Groundwater samples will be collected using the low flow/low stress sampling technique as described in the O'Brien & Gere protocol in the SAP. The sampling will be conducted using new polyethylene tubing and a portable bladder pump system. Low flow/low stress sampling techniques minimize the presence of fine grain materials in the groundwater samples.

INVESTIGATION-DERIVED WASTES

Investigation derived wastes (IDW), including soils and purge and decontamination water/fluids, will not be contained, unless physical evidence of impacts are encountered during drilling or sampling. If impacts are encountered, the IDW will be containerized, characterized, and an appropriate disposal option determined. Personal protective equipment (PPE, *i.e.*, gloves, *etc.*) and disposable sampling equipment will be disposed as routine municipal waste in accordance with Section 4.9 of the SAP.

EQUIPMENT DECONTAMINATION

Field equipment potentially exposed to contaminants will be properly decontaminated as described in Section 4.10 of the SAP.

REPORTING

The results of the groundwater investigation will be summarized in a technical memorandum to be included as an appendix to the Corrective Measures report for the Site, that will include an evaluation of potential corrective measures for the Site (*i.e.*, will function as the Remedial Action Plan [RAP] or closure plan) for the Site. If further investigation is required, the scope of the additional investigation activities will be discussed in the technical memorandum.

If you have any questions, please feel free to contact either David Favero with RACER Trust at (217) 741-6235 or me at (248) 477-5701 (ext. 16).

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Clifford S. Yantz
Technical Associate

Enclosures

cc: Mr. Gary Cygan – USEPA
Ms. Bhooma Sundar – USEPA
Mr. Grant Trigger – RACER Trust
Mr. David Favero – RACER Trust
Mr. Kevin Schneider – O'Brien & Gere
Mr. Todd Krone – O'Brien & Gere

Tables

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

Parameter		MDEQ Criteria					SB2-06 (8'-10')	SB2-07 (8'-10')	SB2-08 (1'-3')	SB2-09 (2'-4')	SB2-10 (1'-3')	SB2-11 (2'-4')	SB2-11/Dup-02 (2'-4')	SB2-12 (2'-4')	SB2-13 (2'-4')	SB2-14 (4'-5')	SB2-16 (4'-5')	SB2-20 (0'-1')	SS2-01	SS2-02	SS2-03
		Statewide Default Background Levels	Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria															
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	0.56	2.18	1.69	1.69	1.73	1.04	1.09	0.46	1.59	--	--	2.78	1.26	2.33	4.89
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	60.3	54.3	49.9	38.9	43	47.5	51.2	66.8	36.5	--	--	12.6	16.2	30.6	42.9
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	<0.20	<0.20	0.23	0.24	0.28	<0.20	<0.20	<0.20	<0.20	--	--	<0.20	<0.20	1.36	7.29
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	3.6	5.5	4.2	2.6	4	3.4	3.7	4.1	4.8	--	--	3	4.5	9.3	19.1
Copper	mg/kg	32	5800	73 (G)	NLV	73000	7.4	6.3	5.3	4.2	9.9	3.1	3.1	3.9	4.3	--	--	7	5.6	24.8	65.3
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	10.6	7.79	18.2	7.31	20.4	5.77	7.4	7.8	5.99	--	--	11.1	11.2	31.4	699
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	<0.050	<0.050	<0.050	<0.050	0.096	<0.050	<0.050	<0.050	<0.050	--	--	<0.050	0.101	<0.050	0.076
Selenium	mg/kg	0.41	4	0.4	NLV	9600	<0.20	1.31	<0.50	0.47	<0.50	0.59	0.55	<0.20	0.5	--	--	0.51	0.4	0.71	<0.50
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	<0.10	<0.10	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	--	--	<0.20	<0.10	<0.10	0.24
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	6.7	11.8	15	17.9	29.8	8.4	9.3	10.7	10	--	--	21.1	22.7	117	645
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<300	<330	<300	<330
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<300	<330	<300	<330
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<330	<330	600	940
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<330	370	1600	3350
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	<330	<330	<330	<300	440	<300	<300	<300	<330	<300	<300	<330	560	2400	4140
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	<330	<330	<330	<300	400	<300	<300	<300	<330	<300	<300	<330	560	2400	3490
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	<330	<330	<330	<300	370	<300	<300	<300	<330	<300	<300	<330	360	1700	2410
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	<330	<330	<330	<300	380	<300	<300	<300	<330	<300	<300	<330	420	1700	3040
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	<330	<330	<330	<300	<330	<300	<300	<300	<330	--	--	--	370	1000	410
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<330	440	1900	3540
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<300	<300	<330	<330	<300	<330
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	<330	<330	<330	<330	<330	<330	<330	<330	<330	--	--	--	<330	<300	<330
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	<330	<330	450	<300	<330	<300	<300	<300	<330	<300	<300	400	800	3600	7060
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	<330	<330	<330	<330	<330	<330	<330	<330	<330	<300	<300	<300	<330	<300	<330
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	<330	<330	<330	<300	330	<300	<300	<300	<330	<300	<300	<330	370	1500	2170
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<300	<330	<300	<330
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<300	<330	<300	<330
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	<330	<330	<330	<300	<330	<300	<300	<300	<330	<300	<300	<330	390	2000	3240
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	<330	<330	370	<300	<330	<300	<300	<300	<330	<300	<300	400	640	2600	6600

Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(NLV) Means hazardous substance is not likely to volatilize under most conditions

(ID) Means insufficient data to develop criterion

(NC) Means no criterion or value is available

-- Not analyzed

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

Parameter		MDEQ Criteria					SS2-03S	SS2-03E	SS2-04	SS2-05	SS2-06	SS2-07	SS2-08	SS2-09	SS2-10	SS2-14	SS2-14D-2'	SS2-14D-3'	SS2-14D-8'	SS2-14N	SS2-14N/ Dup-05	SS2-14S
		Statewide Default Background Levels	Non- Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non- Residential Direct Contact Criteria																
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	--	--	2.4	1.34	1.22	0.89	1.14	0.59	3.2	13.5	5.09	--	1.08	12.1	11	8.62
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	--	--	49.5	38.4	44.4	47.8	42.6	73.7	67.4	93.2	--	--	--	--	--	--
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	--	--	5.17	0.76	1.21	0.65	<0.20	<0.20	2.4	1.26	--	--	--	--	--	--
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	--	--	38.1	7.8	15.8	6.7	3.1	3.8	34.6	24.5	--	--	--	--	--	--
Copper	mg/kg	32	5800	73 (G)	NLV	73000	--	--	94.1	18.7	52.9	11.6	4.9	4.5	52.6	91.2	--	--	--	--	--	--
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	164	142	83.3	20	31.1	24.5	12.2	11.6	253	1020	35.2	--	9.2	154	204	51.9
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	--	--	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.087	0.38	--	--	--	--	--	--
Selenium	mg/kg	0.41	4	0.4	NLV	9600	--	--	<0.50	0.43	0.39	0.22	0.31	0.39	0.48	0.48	--	--	--	--	--	--
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	--	--	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.31	--	--	--	--	--	--
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	--	--	691	80	191	56.7	15.9	13.1	321	156	--	--	--	--	--	--
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	--	--	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	--	--	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	--	--	13900	2000	300	800	<300	<300	300	500	600	<300	<300	<300	<300	500
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	--	--	37300	10700	1600	4400	<300	<300	<300	1500	1800	<300	<300	700	1200	3700
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	--	--	37300	11700	2000	5500	<300	<300	1000	2300	2100	<300	<300	1200	1600	4800
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	--	--	35100	13200	1800	6200	<300	<300	1300	2100	2000	<300	<300	700	1600	4400
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	--	--	19400	3200	1000	1600	<300	<300	400	1200	1200	<300	<300	<300	1500	3200
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	--	--	30400	12200	1900	4800	<300	<300	900	1900	1600	<300	<300	900	1300	3900
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	2030	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	--	--	38600	10900	1800	4800	<300	<300	1000	2000	1900	<300	<300	900	1500	3900
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	--	--	1800	400	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	1020	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	--	--	81600	20100	3500	8400	<300	<300	1900	3900	3800	<300	<300	1400	2200	6300
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	--	--	1730	300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	--	--	18300	4000	1100	2000	<300	<300	400	1200	1100	<300	<300	<300	1400	3200
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	--	--	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	<300	<300	<300	<300	<300	<300
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	--	--	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	--	--	36700	5500	1100	2100	<300	<300	1000	1800	2300	<300	<300	700	1200	2200
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	--	--	80900	17400	2900	7300	<300	<300	1600	3400	3500	<300	<300	1800	2900	6600

Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(NLV) Means hazardous substance is not likely to volatilize under most conditions

(ID) Means insufficient data to develop criterion

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-- Not analyzed

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

		MDEQ Criteria																			
		Statewide Default Background Levels	Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria															
Parameter							SS2-14SS	SS2-14SSS	SS2-14E	SS2-14EE	SS2-14W	SS2-14WW	SS2-14WWW	SS2-15	SS2-15D-3'	SS2-15D-7'	SS2-15N	SS2-15NN	SS2-15E	SS2-15W	
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	10.8	2.26	8.53	4.43	7.2	14.3	39.5	3.13	--	--	--	--	--	--	
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	--	--	--	--	--	--	--	66	--	--	--	--	--	--	
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	--	--	--	--	--	--	--	0.74	--	--	--	--	--	--	
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	--	--	--	--	--	--	--	13.4	--	--	--	--	--	--	
Copper	mg/kg	32	5800	73 (G)	NLV	73000	--	--	--	--	--	--	--	27.4	--	--	--	--	--	--	
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	--	--	160	--	109	--	--	90.9	--	--	--	--	--	--	
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	--	--	--	--	--	--	--	0.073	--	--	--	--	--	--	
Selenium	mg/kg	0.41	4	0.4	NLV	9600	--	--	--	--	--	--	--	0.56	--	--	--	--	--	--	
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--	
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	--	--	--	--	--	--	--	100	--	--	--	--	--	--	
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	<300	--	500	<300	<300	<300	--	400	<300	<300	1600	<300	<300	<300	
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	<300	--	<300	<300	<300	<300	--	<300	<300	<300	<300	<300	<300	<300	
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	<300	--	1300	<300	500	<300	--	1000	<300	<300	3800	<300	<300	<300	
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	1300	--	4600	900	1900	1000	--	2100	<300	<300	13000	<300	600	1300	
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	1900	--	6000	1400	2800	1500	--	3000	<300	<300	15600	<300	1100	1900	
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	1800	--	6500	1200	2200	1400	--	3200	<300	<300	17400	<300	800	1500	
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	1300	--	5000	1100	2100	900	--	1200	<300	<300	9900	<300	900	1300	
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	1500	--	4400	1000	2400	1200	--	2700	<300	<300	12300	<300	700	1300	
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	1500	--	5000	900	2100	1200	--	3000	<300	<300	14800	<300	600	1300	
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	<300	--	<300	<300	<300	<300	--	<300	<300	<300	<300	<300	<300	<300	
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	2400	--	8600	1400	3500	2300	--	8000	<300	<300	25600	<300	1200	2700	
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	<300	--	400	<300	<300	<300	--	400	<300	<300	1300	<300	<300	<300	
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	1200	--	4400	900	1900	900	--	1400	<300	<300	10200	<300	800	1300	
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	<300	--	<300	<300	<300	<300	--	<300	<300	<300	<300	<300	<300	<300	
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	<300	--	<300	<300	<300	<300	--	--	<300	<300	<300	<300	<300	<300	
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	<300	--	<300	<300	<300	<300	--	<300	<300	<300	<300	<300	<300	<300	
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	1100	--	4900	600	2200	1200	--	4700	<300	<300	15300	400	600	1300	
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	2400	--	10500	1500	3900	2200	--	6000	<300	<300	34700	<300	1400	2700	

Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

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(ID) Means insufficient data to develop criterion

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-- Not analyzed

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

		MDEQ Criteria																				
		Statewide Default Background Levels	Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria																
Parameter							SS2-17	SS2-18	SS2-20	SS2-20D-3'	SS2-20D-8'	SS2-20N	SS2-20S	SS2-20E	SS2-20W	SS2-24	SS2-24D-2'	SS2-24D-3'	SS2-24D-5'	SS2-24D-6'	SS2-24D-8.5'	SS2-24N
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	1.54	3.08	3.36	--	--	--	--	--	--	2.49	--	--	--	--	--	--
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	55.6	59.4	30.9	--	--	--	--	--	--	17.6	--	--	--	--	--	--
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	0.73	5.74	1.51	--	--	--	--	--	--	1.55	--	--	--	--	--	--
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	7.9	42.8	12.8	--	--	--	--	--	--	15	--	--	--	--	--	--
Copper	mg/kg	32	5800	73 (G)	NLV	73000	9.8	34.7	128	--	--	--	--	--	--	40.9	--	--	--	--	--	--
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	26.1	183	94	--	--	--	--	--	--	314	--	--	--	--	--	--
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	<0.050	0.060	2.760	<0.050	<0.050	2.761	5.976	2.736	2.242	0.701	--	--	--	--	--	--
Selenium	mg/kg	0.41	4	0.4	NLV	9600	0.43	0.74	0.49	--	--	--	--	--	--	0.36	--	--	--	--	--	--
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	<0.20	0.1	0.15	--	--	--	--	--	--	0.12	--	--	--	--	--	--
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	37.9	300	613	--	--	--	--	--	--	1040	--	--	--	--	--	--
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	<300	<300	<300	--	--	--	--	--	--	<300	500	4400	4800	<300	<300	400
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	<300	<300	<300	--	--	--	--	--	--	<300	<300	<500	<500	<300	<300	<300
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	<300	<300	<300	--	--	--	--	--	--	700	1000	6600	8900	<300	<300	800
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	<300	<300	<400	--	--	--	--	--	--	1800	3000	14700	19200	<300	<300	2700
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	<300	500	900	--	--	--	--	--	--	2300	3400	15000	20400	<300	<300	3000
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	<300	700	1300	--	--	--	--	--	--	2400	3000	16900	26000	<300	<300	2900
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	<300	<300	400	--	--	--	--	--	--	1400	1900	4500	4400	<300	<300	2300
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	<300	600	700	--	--	--	--	--	--	2000	3200	13200	20800	<300	<300	2900
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	<300	600	700	--	--	--	--	--	--	2100	3300	15400	19000	<300	<300	3000
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	<300	<300	<400	--	--	--	--	--	--	<300	<300	2100	<500	<300	<300	<300
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	300	1300	1000	--	--	--	--	--	--	4600	6600	37400	58300	<300	<300	4700
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	<300	<300	<400	--	--	--	--	--	--	<300	500	4300	6000	<300	<300	300
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	<300	<300	600	--	--	--	--	--	--	1400	1800	5000	5200	<300	<300	2100
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	<300	<300	<400	--	--	--	--	--	--	<300	<300	1400	3600	<300	<300	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	<300	900	2400	<300	<300	<300
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	<300	<300	<400	--	--	--	--	--	--	<300	<300	1800	13700	<300	<300	<300
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	<300	500	500	--	--	--	--	--	--	2700	4400	31800	51100	<300	<300	3100
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	<300	1100	1200	--	--	--	--	--	--	4100	6200	35100	35100	<300	<300	5200

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Grand Blanc, Michigan

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Parameter							SS2-24NN	SS2-24S	SS2-24S/ Dup-06	SS2-24E	SS2-24W	SS2-24WW	SS2-24NW	SS2-25	SS2-27	SS2-27D-2.5'	SS2-28	SS2-29	SS2-36	SS2-37	SS2-37/Dup-04	
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Copper	mg/kg	32	5800	73 (G)	NLV	73000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium	mg/kg	0.41	4	0.4	NLV	9600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	<300	<300	<300	<300	400	<300	<300	<300	800	<300	<300	300	<300	<300	<300	
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	<300	<300	<300	<300	900	<300	<300	<300	4100	<300	<300	700	800	400	300	
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	700	600	<300	<300	3000	700	1100	300	26400	<300	<300	2100	3900	1900	1600	
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	1000	900	<300	600	3200	1100	1400	1000	27100	400	<300	2800	3600	1800	1500	
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	1000	800	<300	<300	2500	1100	1500	1000	32800	<300	<300	3000	3300	1900	1400	
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	700	700	<300	<300	2300	1100	800	400	6600	<300	<300	900	2200	1100	900	
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	1000	600	<300	<300	3200	900	800	900	24600	<300	<300	2700	3300	1300	1300	
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	1000	700	<300	<300	3200	800	1100	800	25300	<300	<300	2600	4200	1800	1800	
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	<300	<300	<300	<300	<300	<300	<300	<300	900	<300	<300	<300	<300	<300	<300	
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	1300	1400	<300	500	5400	1200	1900	1500	45000	400	<300	5100	6800	3400	2800	
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	<300	<300	<300	<300	400	<300	<300	<300	800	<300	<300	<300	<300	<300	<300	
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	700	600	<300	<300	2300	900	800	500	8600	<300	<300	1000	2200	1100	1000	
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	<300	<300	<300	<300	<300	<300	<300	--	--	<300	--	--	<300	<300	<300	
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	700	700	<300	<300	3900	500	1200	600	12700	<300	<300	2900	3200	1400	1200	
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	1400	1600	<300	600	6300	1300	2000	1400	42100	500	<300	4700	8100	3700	3200	

- Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background
- Exceeds GSI protection criteria only
- Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria
- Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(NLV) Means hazardous substance is not likely to volatilize under most conditions

(ID) Means insufficient data to develop criterion

(NC) Means no criterion or value is available

-- Not analyzed

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

		MDEQ Criteria					SS2-38	SS2-39	SS2-40	SS2-41	SS2-42	SS2-43	SS2-43/Dup-10	SS2-46	SS2-46N	SS2-46NN	SS2-46S	SS2-46SS	SS2-46SSS	SS2-46W	SS2-46WW
		Statewide Default Background Levels	Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria															
Parameter																					
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	--	--	--	--	--	--	--	91.8	45.2	22.4	59.4	26.7	21	48.1	29.7
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/kg	32	5800	73 (G)	NLV	73000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.41	4	0.4	NLV	9600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	3000	1100	<300	<300	<300	<500	<400	--	--	--	--	--	--	--	--
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	<300	<300	<300	<300	<300	<500	<400	--	--	--	--	--	--	--	--
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	11100	5100	<300	600	700	<500	<400	--	--	--	--	--	--	--	--
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	46500	12800	<300	3300	4500	1300	800	--	--	--	--	--	--	--	--
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	38700	10400	700	4100	5100	1100	700	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	34600	9600	700	3800	4400	1600	1000	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	22400	6000	700	2100	2600	<500	<400	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	38000	9700	400	3400	4800	1200	800	--	--	--	--	--	--	--	--
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	45000	12900	<300	3500	5000	1700	1100	--	--	--	--	--	--	--	--
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	<300	<300	<300	800	<300	<500	<400	--	--	--	--	--	--	--	--
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	78400	26500	900	6100	8800	2300	1400	--	--	--	--	--	--	--	--
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	3400	1900	<300	<300	<300	<500	<400	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	24000	6200	600	2200	2600	<500	<400	--	--	--	--	--	--	--	--
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	<300	<300	<300	<300	<300	700	500	--	--	--	--	--	--	--	--
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	<300	<300	<300	<300	<300	500	400	--	--	--	--	--	--	--	--
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	<300	<300	<300	<300	<300	<500	<400	--	--	--	--	--	--	--	--
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	39100	18200	400	2200	3500	800	500	--	--	--	--	--	--	--	--
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	88900	28000	1000	6000	8300	2000	1200	--	--	--	--	--	--	--	--

Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background
 Exceeds GSI protection criteria only
 Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria
 Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent
(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water
(M) Calculated criterion is below the analytical target detection limit
(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source
(DD) Hazardous substances causes developmental effects
(NLL) Means hazardous substances is not likely to leach under most soil conditions
(NLV) Means hazardous substance is not likely to volatilize under most conditions
(ID) Means insufficient data to develop criterion
(NC) Means no criterion or value is available
-- Not analyzed

Table 1
Summary of Historic Soil Analytical Results
RACER Trust
Grand Blanc, Michigan

		MDEQ Criteria					SS2-46WWW	SS2-47NW	SS2-47NWNW	SS2-48	SS2-48S
		Statewide Default Background Levels	Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria					
Parameter											
Arsenic	mg/kg	5.8	4.6	4.6	NLV	37	4.24	24.1	6.15	28	50.7
Barium	mg/kg	75	1300	440 (G,X)	NLV	1.3E+05	--	--	--	--	--
Cadmium	mg/kg	1.2	6	3 (G,X)	NLV	2100	--	--	--	--	--
Chromium	mg/kg	18	1.0E+6 (D)	1.0E+6 (G,X,D)	NLV	1.0E+6(D)	--	--	--	--	--
Copper	mg/kg	32	5800	73 (G)	NLV	73000	--	--	--	--	--
Lead (Total)	mg/kg	21	700	2500 (G,X)	NLV	900 (DD)	--	--	--	--	--
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	89	580	--	--	--	--	--
Selenium	mg/kg	0.41	4	0.4	NLV	9600	--	--	--	--	--
Silver	mg/kg	1	13	100 (M); 27	NLV	9000	--	--	--	--	--
Zinc	mg/kg	47	5000	170 (G)	NLV	6.3E+05	--	--	--	--	--
Acenaphthene	µg/kg	NC	8.8E+05	8700	3.5E+08	1.3E+08	--	--	--	--	--
Acenaphthylene	µg/kg	NC	17000	ID	3.00E+06	5.2E+06	--	--	--	--	--
Anthracene	µg/kg	NC	41000	ID	1.0E+9(D)	7.3E+08	--	--	--	--	--
Benzo(a)anthracene	µg/kg	NC	NLL	NLL	NLV	80000	--	--	--	--	--
Benzo(a)pyrene	µg/kg	NC	NLL	NLL	NLV	8000	--	--	--	--	--
Benzo(b)fluoranthene	µg/kg	NC	NLL	NLL	ID	80000	--	--	--	--	--
Benzo(ghi)perylene	µg/kg	NC	NLL	NLL	NLV	7.0E+06	--	--	--	--	--
Benzo(k)fluoranthene	µg/kg	NC	NLL	NLL	NLV	8.0E+05	--	--	--	--	--
Carbazole	µg/kg	NC	39000	1100	NLV	2.4E+06	--	--	--	--	--
Chrysene	µg/kg	NC	NLL	NLL	ID	8.0E+06	--	--	--	--	--
Dibenzo(ah)anthracene	µg/kg	NC	NLL	NLL	NLV	8000	--	--	--	--	--
Dibenzofuran	µg/kg	NC	ID	1700	3.60E+06	ID	--	--	--	--	--
Fluoranthene	µg/kg	NC	7.30E+05	5500	1.0E+9 (D)	1.3E+08	--	--	--	--	--
Fluorene	µg/kg	NC	8.9E+05	5300	1.0E+9(D)	8.7E+7(DD)	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/kg	NC	NLL	NLL	NLV	80000	--	--	--	--	--
2-Methylnaphthalene	µg/kg	NC	1.70E+05	4200	4.90E+06	2.6E+07	--	--	--	--	--
1-Methylnaphthalene	µg/kg	NC	NC	NC	NC	NC	--	--	--	--	--
Naphthalene	µg/kg	NC	1.00E+05	730	4.7E+05	5.2E+07	--	--	--	--	--
Phenanthrene	µg/kg	NC	1.60E+05	2100	5.1E+06	5.2E+06	--	--	--	--	--
Pyrene	µg/kg	NC	4.8E+05	ID	1.0E+9(D)	8.4E+07	--	--	--	--	--

Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(NLV) Means hazardous substance is not likely to volatilize under most conditions

(ID) Means insufficient data to develop criterion

(NC) Means no criterion or value is available

-- Not analyzed

Table 2
Summary of Historic Groundwater Analytical Results
RACER Trust
Grand Blanc, Michigan

Parameter		MDEQ Criteria				MW2-01 (Dissolved)	MW2-01 (Total)	MW2-02 (Dissolved)	MW2-02 (Total)
		Non-Residential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Non-Residential Direct Contact Criteria				
Arsenic	mg/L	0.01 (A)	0.1 (X)	NLV	4.3	0.002	0.004	0.002	0.001
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	0.05	0.06	0.09	0.08
Cadmium	mg/L	0.005 (A)	0.0025 (G,X)	NLV	190	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1 (A)	0.1 (G,X)	NLV	2.90E+05	<0.005	<0.005	<0.005	0.005
Copper	mg/L	1 (E)	0.013 (G)	NLV	7400	<0.004	<0.004	0.007	0.006
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	<0.003	<0.003	<0.003	<0.003
Mercury	mg/L	0.002 (A)	0.0000013	0.056 (S)	0.056 (S)	<0.0002	<0.0002	<0.0002	<0.0002
Selenium	mg/L	0.05 (A)	0.005	NLV	970	<0.005	<0.005	0.006	<0.005
Silver	mg/L	0.098	0.0002(M);0.00006	NLV	1500	<0.0002	<0.0002	0.0008	0.0004
Zinc	mg/L	5 (E)	0.17 (G)	NLV	110000	0.015	0.012	0.013	0.016
Acenaphthene	µg/L	3800	38	4200 (S)	4200 (S)	<5	--	<5	--
Acenaphthylene	µg/L	150	ID	3900 (S)	3900 (S)	<5	--	<5	--
Anthracene	µg/L	43 (S)	ID	43 (S)	43 (S)	<5	--	<5	--
di-n-Butyl phthalate	µg/L	2,500	9.7	NLV	11,000 (S)	--	--	--	--
Benzo(a)anthracene	µg/L	8.5	ID	NLV	9.4 (S,AA)	<5	--	<5	--
Benzo(a)pyrene	µg/L	5.0 (A)	ID	NLV	1.0(M,AA);0.64	<5	--	<5	--
Benzo(b)fluoranthene	µg/L	1.5 (S,AA)	ID	ID	1.5 (S,AA)	<5	--	<5	--
Benzo(ghi)perylene	µg/L	1.0(M);0.26(S)	ID	NLV	1.0(M,AA);0.26(S)	<5	--	<5	--
Benzo(k)fluoranthene	µg/L	1.0(M);0.8(S)	NA	NLV	1.0(M,AA);0.8(S)	<5	--	<5	--
Carbazole	µg/L	350	10(M);4.0	NLV	7400	--	--	--	--
Chrysene	µg/L	1.6(S)	ID	ID	1.6(S,AA)	<5	--	<5	--
Dibenzo(ah)anthracene	µg/L	2.0(M);0.85	ID	NLV	2.0(M,AA);0.31	<5	--	<5	--
bis(2-Ethylhexyl)phthalate	µg/L	8.3	1.0 (M); 0.79	2.10E+05	5,700	--	--	--	--
Fluoranthene	µg/L	210 (S)	1.6	210 (S)	210 (S)	<5	--	<5	--
Fluorene	µg/L	2000 (S)	12	2000(S)	2000(S)	<5	--	<5	--
Indeno(1,2,3-cd)pyrene	µg/L	2.0(M);0.022(S)	ID	NLV	2.0(M,AA);0.022(S)	<5	--	<5	--
2-Methylnaphthalene	µg/L	750	19	25000 (S)	25000(S)	<5	--	<5	--
Naphthalene	µg/L	1500	11	31000(S)	31000(S)	<5	--	<5	--
Phenanthrene	µg/L	150	2.0 (M);1.4	1000 (S)	1000 (S)	<5	--	<5	--
Pyrene	µg/L	140 (S)	ID	140 (S)	140 (S)	<5	--	<5	--

Notes:

Exceeds GSI Criteria only

(A) Criterion is the state of Michigan drinking water standard.

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water

(M) Calculated criterion is below the analytical target detection limit

(S) Criterion defaults to the hazardous substance-specific water solubility limit

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source

(AA) Comparison to these criteria may take into account an evaluation of whether the hazardous substances are adsorbed to particulates rather than dissolved in water and whether filtered groundwater samples were used to evaluate groundwater

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(NLV) Means hazardous substance is not likely to volatilize under most conditions

(ID) Means insufficient data to develop criterion

(NC) Means no criterion or value is available

(NA) not analyzed

Table 3
Summary of August 2011 Soil and Floor Block Analytical Results
Dort Highway Land
Grand Blanc, Michigan

		MDEQ Criteria			SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-07 CO- LOCATED	SS-08	SS-09	SS-10
		Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non- Residential Direct Contact Criteria											
Parameter															
Arsenic	mg/kg	4.6	4.6	37	--	--	2.07	2.56	--	--	2.5	2.19	3.64	2.19	1.76
Barium	mg/kg	1300	440 (G,X)	1.3E+05	--	--	41.5	55	--	--	37	30.2	42.9	54.4	36.4
Cadmium	mg/kg	6	3 (G,X)	2100	--	--	<0.20	<0.20	--	--	<0.20	0.2	<0.20	<0.20	<0.20
Chromium	mg/kg	1.0E+6 (D)	1.0E+6 (G,X,D)	1.0E+6 (D)	--	--	3.82	2.96	--	--	7.45	3.27	6.85	3.31	3.5
Lead (Total)	mg/kg	700	2500 (G,X)	900 (DD)	--	--	9.79	6	--	--	35	12.6	5.19	6.81	6.48
Acenaphthene	µg/kg	8.8E+05	8700	1.3E+08	400	<300	--	--	<300	<300	<300	<300	<300	--	--
Acenaphthylene	µg/kg	17000	ID	5.2E+06	<300	<300	--	--	<300	<300	<300	<300	<300	--	--
Anthracene	µg/kg	41000	ID	7.3E+08	1,000	400	--	--	<300	<300	600	<300	<300	--	--
Benzo(a)anthracene	µg/kg	NLL	NLL	80000	3,100	1,500	--	--	<300	<300	2,000	1,000	<300	--	--
Benzo(a)pyrene	µg/kg	NLL	NLL	8000	3,800	1,800	--	--	<300	<300	3,200	1,400	<300	--	--
Benzo(b)fluoranthene	µg/kg	NLL	NLL	80000	6,900	3,300	--	--	300	400	5,100	2,300	<300	--	--
Benzo(k)fluoranthene	µg/kg	NLL	NLL	8.0E+05	7,100	3,200	--	--	<300	300	5,200	2,300	<300	--	--
Benzo(ghi)perylene	µg/kg	NLL	NLL	7.0E+06	1,700	1,000	--	--	<300	<300	1,600	900	<300	--	--
Chrysene	µg/kg	NLL	NLL	8.0E+06	3,500	1,700	--	--	<300	<300	2,500	1,300	<300	--	--
Dibenzo(ah)anthracene	µg/kg	NLL	NLL	8000	<300	<300	--	--	<300	<300	<300	<300	<300	--	--
Fluoranthene	µg/kg	7.30E+05	5500	1.3E+08	7,100	3,400	--	--	<300	<300	4,600	2,200	<300	--	--
Fluorene	µg/kg	8.9E+05	5300	8.7E+07	400	<300	--	--	<300	<300	300	<300	<300	--	--
Indeno(1,2,3-cd)pyrene	µg/kg	NLL	NLL	80000	1,700	1,000	--	--	<300	<300	1,600	900	<300	--	--
Naphthalene	µg/kg	1.00E+05	730	5.2E+07	<300	<300	--	--	<300	<300	<300	<300	<300	--	--
Phenanthrene	µg/kg	1.60E+05	2100	5.2E+06	4,200	1,800	--	--	<300	<300	2,600	1,100	<300	--	--
Pyrene	µg/kg	4.8E+05	ID	8.4E+07	6,000	2,800	--	--	<300	<300	3,800	1,700	<300	--	--
2-Methylnaphthalene	µg/kg	1.70E+05	4200	2.6E+07	<300	<300	--	--	<300	<300	<300	<300	<300	--	--
1-Methylnaphthalene	µg/kg	NC	NC	NC	<300	<300	--	--	<300	<300	<300	<300	<300	--	--

Exceeds GSI protection criteria only
Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria
Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent
(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness,
or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall
be calculated based on the pH or hardness of the receiving surface water
(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used
as a drinking water source
(DD) Hazardous substances causes developmental effects
(NLL) Means hazardous substances is not likely to leach under most soil conditions
(ID) Means insufficient data to develop criterion
(NC) Means no criterion or value is available
-- Not analyzed
* Elevated reporting limit for PAHs due to high target concentration
Equipment blanks, field blanks, trip blank, methanol blank were non-detect;
except field blank (FBK-01) which had a detection of 0.006 mg/L for barium

Table 3
Summary of August 2011 Soil and Floor Block Analytical Results
Dort Highway Land
Grand Blanc, Michigan

		MDEQ Criteria			SS-11	SS-12	SS-13	SS-14	SS-14 CO- LOCATED	SS-15	SS-16	SS-16 DUP-01	SS-17	SS-18	SS-19
		Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non- Residential Direct Contact Criteria											
Parameter															
Arsenic	mg/kg	4.6	4.6	37	2.87	1.41	1.78	0.65	0.74	1.35	1.8	1.92	--	--	--
Barium	mg/kg	1300	440 (G,X)	1.3E+05	42.1	57.8	44.1	93.5	66	63.6	53.2	44.4	--	--	--
Cadmium	mg/kg	6	3 (G,X)	2100	<0.20	<0.20	0.24	0.2	<0.20	<0.20	0.21	0.22	--	--	--
Chromium	mg/kg	1.0E+6 (D)	1.0E+6 (G,X,D)	1.0E+6 (D)	2.51	3.57	2.97	3.94	3.53	3.87	6.31	6.06	--	--	--
Lead (Total)	mg/kg	700	2500 (G,X)	900 (DD)	5.36	4.82	8.44	6.94	8.68	7.36	12.6	13	--	--	--
Acenaphthene	µg/kg	8.8E+05	8700	1.3E+08	--	--	<330	<330	<330	<330	<330	<330	400	<300	<300
Acenaphthylene	µg/kg	17000	ID	5.2E+06	--	--	<330	<330	<330	<330	<330	<330	<300	<300	<300
Anthracene	µg/kg	41000	ID	7.3E+08	--	--	<330	<330	<330	<330	<330	<330	2,400	<300	<300
Benzo(a)anthracene	µg/kg	NLL	NLL	80000	--	--	<330	<330	<330	<330	<330	<330	3,000	<300	<300
Benzo(a)pyrene	µg/kg	NLL	NLL	8000	--	--	<330	<330	<330	<330	<330	<330	2,700	<300	<300
Benzo(b)fluoranthene	µg/kg	NLL	NLL	80000	--	--	<330	<330	<330	<330	<330	<330	5,500	<300	<300
Benzo(k)fluoranthene	µg/kg	NLL	NLL	8.0E+05	--	--	<330	<330	<330	<330	<330	<330	5,500	<300	<300
Benzo(ghi)perylene	µg/kg	NLL	NLL	7.0E+06	--	--	<330	<330	<330	<330	<330	<330	900	<300	<300
Chrysene	µg/kg	NLL	NLL	8.0E+06	--	--	<330	<330	<330	<330	<330	<330	3,100	<300	<300
Dibenzo(ah)anthracene	µg/kg	NLL	NLL	8000	--	--	<330	<330	<330	<330	<330	<330	<300	<300	<300
Fluoranthene	µg/kg	7.30E+05	5500	1.3E+08	--	--	<330	<330	<330	<330	<330	<330	6,800	<300	<300
Fluorene	µg/kg	8.9E+05	5300	8.7E+07	--	--	<330	<330	<330	<330	<330	<330	500	<300	<300
Indeno(1,2,3-cd)pyrene	µg/kg	NLL	NLL	80000	--	--	<330	<330	<330	<330	<330	<330	900	<300	<300
Naphthalene	µg/kg	1.00E+05	730	5.2E+07	--	--	<330	<330	<330	<330	<330	<330	<300	<300	<300
Phenanthrene	µg/kg	1.60E+05	2100	5.2E+06	--	--	<330	<330	<330	<330	<330	<330	5,700	<300	<300
Pyrene	µg/kg	4.8E+05	ID	8.4E+07	--	--	<330	<330	<330	<330	<330	<330	6,200	<300	<300
2-Methylnaphthalene	µg/kg	1.70E+05	4200	2.6E+07	--	--	<330	<330	<330	<330	<330	<330	<300	<300	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	--	--	<330	<330	<330	<330	<330	<330	<300	<300	<300

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness,
or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall
be calculated based on the pH or hardness of the receiving surface water

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used
as a drinking water source

(DD) Hazardous substances causes developmental effects

(NLL) Means hazardous substances is not likely to leach under most soil conditions

(ID) Means insufficient data to develop criterion

(NC) Means no criterion or value is available

-- Not analyzed

* Elevated reporting limit for PAHs due to high target concentration

Equipment blanks, field blanks, trip blank, methanol blank were non-detect;
except field blank (FBK-01) which had a detection of 0.006 mg/L for barium

Table 3
Summary of August 2011 Soil and Floor Block Analytical Results
Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria			SS-20	SS-21	SS-22	SS-22 CO- LOCATED	FB-01*	FBS-01*	FB-02*	FBS-02*	FB-03*	FB-03* CO- LOCATED	FBS-03
		Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non- Residential Direct Contact Criteria											
Arsenic	mg/kg	4.6	4.6	37	--	--	--	--	2.43	1.94	1.54	1.29	1.91	2.12	2.55
Barium	mg/kg	1300	440 (G,X)	1.3E+05	--	--	--	--	6.91	69.6	10.1	30.6	23.1	75.5	58.8
Cadmium	mg/kg	6	3 (G,X)	2100	--	--	--	--	<0.20	<0.20	0.37	0.36	0.42	1	0.57
Chromium	mg/kg	1.0E+6 (D)	1.0E+6 (G,X,D)	1.0E+6 (D)	--	--	--	--	1.12	4.45	2.49	5.56	7.23	27.5	11.2
Lead (Total)	mg/kg	700	2500 (G,X)	900 (DD)	--	--	--	--	4.77	8.5	10.7	20.4	27.4	69.8	36.7
Acenaphthene	µg/kg	8.8E+05	8700	1.3E+08	<300	<300	<300	<300	190,000	20,800	850,000	3,500	320,000	290,000	<300
Acenaphthylene	µg/kg	17000	ID	5.2E+06	<300	<300	<300	<300	27,000	<2,000	<80,000	<400	80,000	70,000	<300
Anthracene	µg/kg	41000	ID	7.3E+08	<300	<300	<300	<300	338,000	37,600	1,430,000	5,900	550,000	510,000	300
Benzo(a)anthracene	µg/kg	NLL	NLL	80000	<300	<300	<300	<300	405,000	88,200	2,150,000	16,500	910,000	840,000	2,000
Benzo(a)pyrene	µg/kg	NLL	NLL	8000	<300	<300	<300	<300	332,000	94,900	1,880,000	18,700	860,000	850,000	3,100
Benzo(b)fluoranthene	µg/kg	NLL	NLL	80000	<300	<300	<300	<300	680,000	175,800	3,530,000	33,400	1,580,000	1,540,000	6,200
Benzo(k)fluoranthene	µg/kg	NLL	NLL	8.0E+05	<300	<300	<300	<300	707,000	200,200	4,010,000	38,000	1,760,000	1,710,000	6,300
Benzo(ghi)perylene	µg/kg	NLL	NLL	7.0E+06	<300	<300	<300	<300	95,000	29,000	640,000	6,800	260,000	250,000	1,600
Chrysene	µg/kg	NLL	NLL	8.0E+06	<300	<300	<300	<300	474,000	88,200	2,450,000	18,600	1,000,000	930,000	3,200
Dibenzo(ah)anthracene	µg/kg	NLL	NLL	8000	<300	<300	<300	<300	<15,000	2,400	<80,000	400	30,000	20,000	<300
Fluoranthene	µg/kg	7.30E+05	5500	1.3E+08	<300	<300	400	<300	1,233,000	272,200	6,770,000	44,700	2,640,000	2,530,000	4,400
Fluorene	µg/kg	8.9E+05	5300	8.7E+07	<300	<300	<300	<300	251,000	23,100	1,310,000	4,900	470,000	430,000	<300
Indeno(1,2,3-cd)pyrene	µg/kg	NLL	NLL	80000	<300	<300	<300	<300	99,000	31,400	700,000	7,500	290,000	280,000	1,700
Naphthalene	µg/kg	1.00E+05	730	5.2E+07	<300	<300	<300	<300	256,000	<2,000	<80,000	<400	220,000	140,000	<300
Phenanthrene	µg/kg	1.60E+05	2100	5.2E+06	<300	<300	<300	<300	1,515,000	159,100	8,280,000	33,200	3,090,000	2,770,000	2,000
Pyrene	µg/kg	4.8E+05	ID	8.4E+07	<300	<300	<300	<300	970,000	214,300	4,630,000	33,500	2,000,000	1,930,000	3,600
2-Methylnaphthalene	µg/kg	1.70E+05	4200	2.6E+07	<300	<300	<300	<300	136,000	2,300	<80,000	500	170,000	110,000	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	<300	<300	<300	<300	76,000	2,200	<80,000	400	120,000	90,000	<300

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness,
or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall
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as a drinking water source

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-- Not analyzed

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Equipment blanks, field blanks, trip blank, methanol blank were non-detect;
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Table 3
Summary of August 2011 Soil and Floor Block Analytical Results
Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria			FB-04*	FB-04 DUP-02	FBS-04	FB-05*	FBS-05	FBS-06	FBS-07	FBS-08	FBS-09	FBS-10	FBS-10 CO- LOCATED
		Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non- Residential Direct Contact Criteria											
Arsenic	mg/kg	4.6	4.6	37	1.14	1.21	2.51	1.38	2.44	--	--	--	--	--	--
Barium	mg/kg	1300	440 (G,X)	1.3E+05	8.56	9.82	62.6	22	54.9	--	--	--	--	--	--
Cadmium	mg/kg	6	3 (G,X)	2100	0.21	0.22	0.24	0.27	<0.20	--	--	--	--	--	--
Chromium	mg/kg	1.0E+6 (D)	1.0E+6 (G,X,D)	1.0E+6 (D)	1.57	2.33	5.68	3.63	5.53	--	--	--	--	--	--
Lead (Total)	mg/kg	700	2500 (G,X)	900 (DD)	10.1	10	12.4	22.5	11.5	--	--	--	--	--	--
Acenaphthene	µg/kg	8.8E+05	8700	1.3E+08	850,000	390,000	1,600	540,000	500	<300	300	500	4,400	2,300	300
Acenaphthylene	µg/kg	17000	ID	5.2E+06	400,000	110,000	<300	40,000	<300	<300	<300	<300	<600	<300	<300
Anthracene	µg/kg	41000	ID	7.3E+08	1,200,000	550,000	3,100	630,000	1,100	<300	500	900	6,100	3,500	500
Benzo(a)anthracene	µg/kg	NLL	NLL	80000	1,850,000	800,000	9,700	890,000	3,800	<300	1,200	2,100	18,500	8,900	1,400
Benzo(a)pyrene	µg/kg	NLL	NLL	8000	1,750,000	800,000	14,600	740,000	4,700	<300	1,400	2,300	22,500	10,000	1,600
Benzo(b)fluoranthene	µg/kg	NLL	NLL	80000	2,890,000	1,390,000	24,400	1,450,000	7,800	<300	2,300	3,700	37,600	17,200	2,700
Benzo(k)fluoranthene	µg/kg	NLL	NLL	8.0E+05	3,160,000	1,510,000	26,300	1,590,000	8,100	<300	2,300	3,700	41,000	18,500	2,600
Benzo(ghi)perylene	µg/kg	NLL	NLL	7.0E+06	530,000	250,000	5,600	220,000	2,000	<300	800	1,300	8,700	3,900	700
Chrysene	µg/kg	NLL	NLL	8.0E+06	1,800,000	820,000	10,900	990,000	4,200	<300	1,300	2,200	19,700	10,200	1,400
Dibenzo(ah)anthracene	µg/kg	NLL	NLL	8000	<80,000	<20,000	400	<40,000	<300	<300	<300	<300	800	<300	<300
Fluoranthene	µg/kg	7.30E+05	5500	1.3E+08	5,390,000	2,530,000	24,700	2,880,000	8,700	<300	3,300	5,900	47,300	25,100	3,300
Fluorene	µg/kg	8.9E+05	5300	8.7E+07	1,090,000	460,000	1,900	820,000	800	<300	400	700	5,700	2,400	400
Indeno(1,2,3-cd)pyrene	µg/kg	NLL	NLL	80000	580,000	280,000	6,100	240,000	2,100	<300	800	1,200	9,300	4,100	700
Naphthalene	µg/kg	1.00E+05	730	5.2E+07	2,070,000	590,000	700	370,000	<300	<300	<300	<300	1,100	1,200	<300
Phenanthrene	µg/kg	1.60E+05	2100	5.2E+06	7,620,000	3,120,000	14,300	4,330,000	4,700	<300	2,500	4,400	31,300	18,000	2,100
Pyrene	µg/kg	4.8E+05	ID	8.4E+07	4,320,000	1,920,000	19,600	1,930,000	6,200	<300	2,400	4,200	32,700	18,000	2,400
2-Methylnaphthalene	µg/kg	1.70E+05	4200	2.6E+07	1,150,000	330,000	400	300,000	<300	<300	<300	<300	<600	400	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	800,000	250,000	400	190,000	<300	<300	<300	<300	900	400	<300

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

Exceeds nonresidential direct contact criteria

(D) Calculated criterion exceeds 100 percent

(G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness,
or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall
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as a drinking water source

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Equipment blanks, field blanks, trip blank, methanol blank were non-detect;
except field blank (FBK-01) which had a detection of 0.006 mg/L for barium

Table 3
Summary of August 2011 Soil and Floor Block Analytical Results
Dort Highway Land
Grand Blanc, Michigan

		MDEQ Criteria			FBS-11	FBS-12	FBS-13	FBS-14	FBS-14 (DUP-01)	FBS-15
		Non-Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Non- Residential Direct Contact Criteria						
Parameter										
Arsenic	mg/kg	4.6	4.6	37	--	--	--	--	--	--
Barium	mg/kg	1300	440 (G,X)	1.3E+05	--	--	--	--	--	--
Cadmium	mg/kg	6	3 (G,X)	2100	--	--	--	--	--	--
Chromium	mg/kg	1.0E+6 (D)	1.0E+6 (G,X,D)	1.0E+6 (D)	--	--	--	--	--	--
Lead (Total)	mg/kg	700	2500 (G,X)	900 (DD)	--	--	--	--	--	--
Acenaphthene	µg/kg	8.8E+05	8700	1.3E+08	600	2,100	1,900	8,300	1,700	700
Acenaphthylene	µg/kg	17000	ID	5.2E+06	<300	<300	<300	<300	<300	<300
Anthracene	µg/kg	41000	ID	7.3E+08	900	2,400	3,600	17,500	3,200	1,100
Benzo(a)anthracene	µg/kg	NLL	NLL	80000	2,100	5,100	8,400	38,400	8,700	2,600
Benzo(a)pyrene	µg/kg	NLL	NLL	8000	2,400	5,700	10,000	39,200	10,000	3,200
Benzo(b)fluoranthene	µg/kg	NLL	NLL	80000	4,000	9,400	15,700	66,200	16,800	5,200
Benzo(k)fluoranthene	µg/kg	NLL	NLL	8.0E+05	4,000	9,900	16,800	72,300	18,100	5,200
Benzo(ghi)perylene	µg/kg	NLL	NLL	7.0E+06	1,300	2,800	4,700	17,400	4,700	1,700
Chrysene	µg/kg	NLL	NLL	8.0E+06	2,500	5,900	9,600	39,700	10,300	3,100
Dibenzo(ah)anthracene	µg/kg	NLL	NLL	8000	<300	<300	400	1,400	<300	<300
Fluoranthene	µg/kg	7.30E+05	5500	1.3E+08	6,000	14,700	21,100	116,300	23,800	6,800
Fluorene	µg/kg	8.9E+05	5300	8.7E+07	700	2,100	2,200	8,000	1,600	1,000
Indeno(1,2,3-cd)pyrene	µg/kg	NLL	NLL	80000	1,300	2,800	4,700	18,500	4,800	1,700
Naphthalene	µg/kg	1.00E+05	730	5.2E+07	<300	700	500	1,400	<300	400
Phenanthrene	µg/kg	1.60E+05	2100	5.2E+06	4,500	12,800	14,800	83,000	16,000	4,600
Pyrene	µg/kg	4.8E+05	ID	8.4E+07	4,200	10,500	15,800	81,100	16,800	5,000
2-Methylnaphthalene	µg/kg	1.70E+05	4200	2.6E+07	<300	400	<300	1,400	<300	<300
1-Methylnaphthalene	µg/kg	NC	NC	NC	<300	<300	<300	1,100	<300	<300

Exceeds GSI protection criteria only

Exceeds nonresidential drinking water protection criteria or both GSI and drinking water protection criteria

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(D) Calculated criterion exceeds 100 percent

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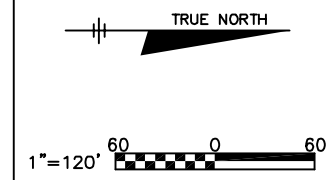
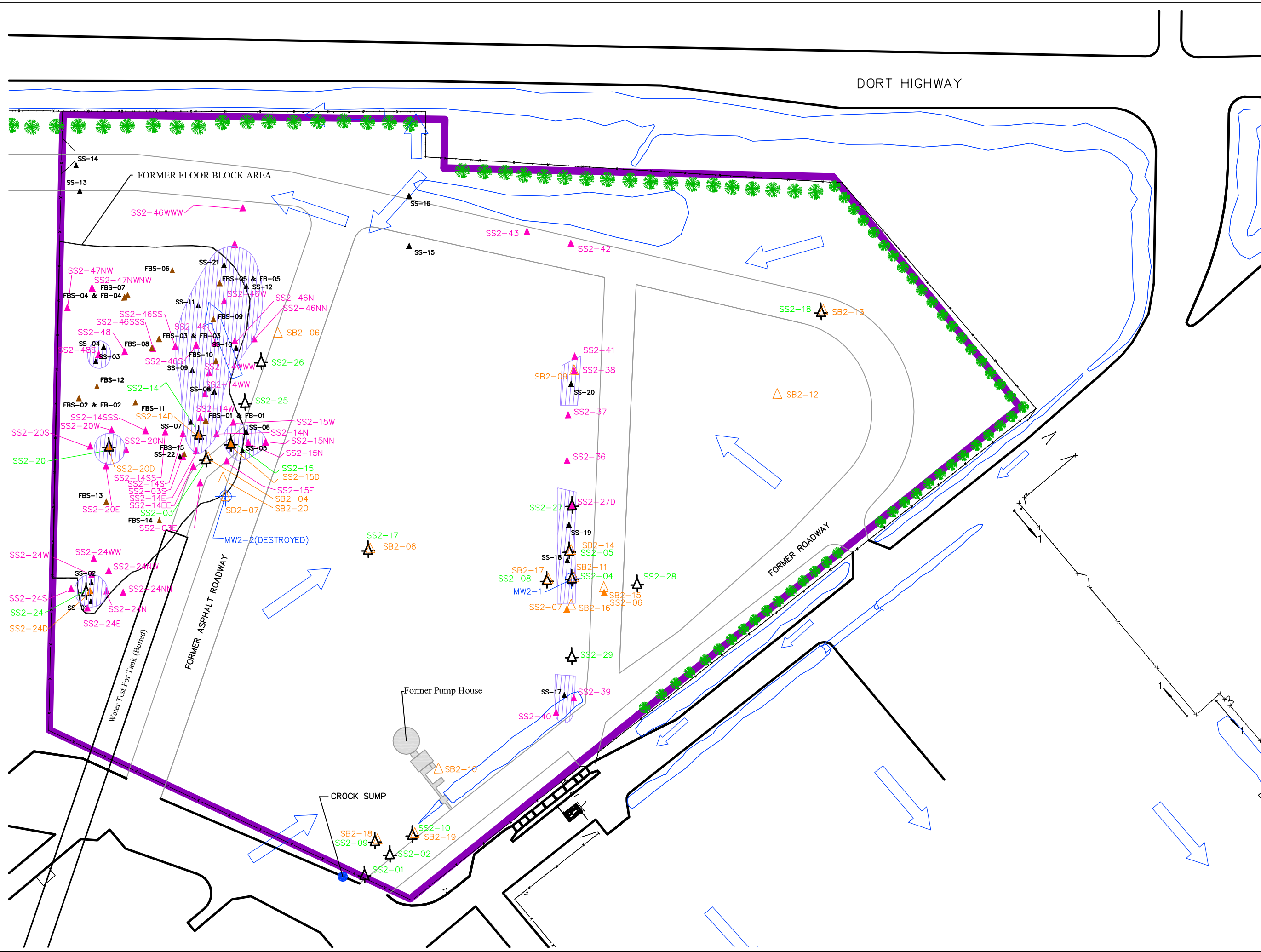
-- Not analyzed

* Elevated reporting limit for PAHs due to high target concentration

Equipment blanks, field blanks, trip blank, methanol blank were non-detect;
except field blank (FBK-01) which had a detection of 0.006 mg/L for barium

Figures

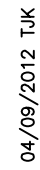
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PLOT DATE: 4/09/2012 TJK



- LEGEND**
- SOIL BORING LOCATION
 - SURFACE SOIL SAMPLE LOCATION
 - DELINEATION SOIL SAMPLE LOCATION
 - DELINEATION/CONFIRMATION SOIL SAMPLE LOCATION
 - FLOOR BLOCK AREA SOIL SAMPLE LOCATION
 - MONITORING WELL LOCATION
 - AREA FORMERLY EXCEEDING NON-RESIDENTIAL CRITERIA
 - APPROXIMATE RACER TRUST PROPERTY LINE
 - FORMER TANK TEST TRACK AND DIE STORAGE ACCESS ROADS
 - APPROXIMATE FENCE LOCATION

HISTORICAL SAMPLING AND IMPACTED AREA MAP WITH 2011 SAMPLING LOCATIONS

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN



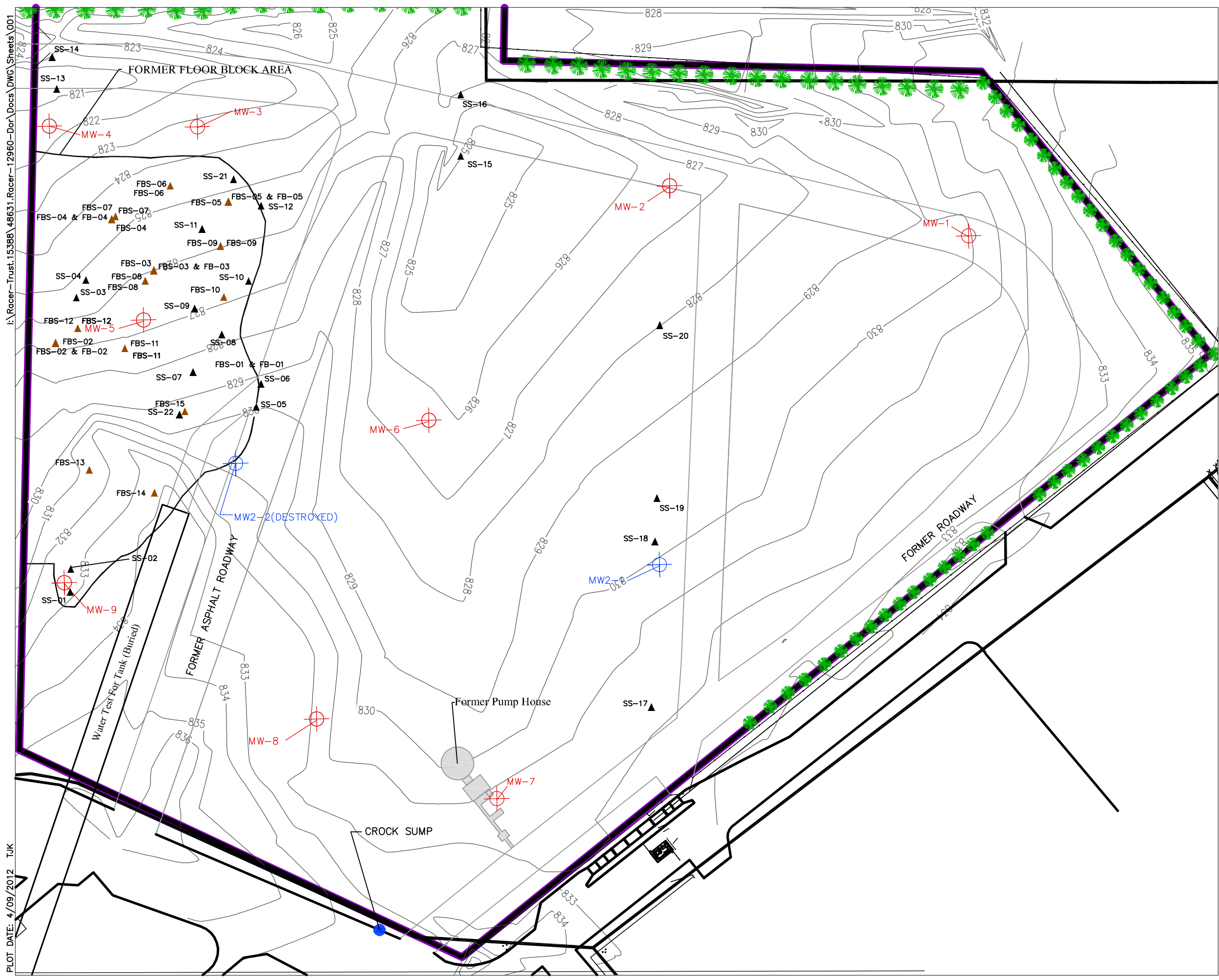


FIGURE 4



LEGEND

- PROPOSED TEMPORARY MONITORING WELL LOCATION
- MONITORING WELL LOCATION
- APPROXIMATE RACER TRUST PROPERTY LINE
- FORMER TANK TEST TRACK AND DIE STORAGE ACCESS ROADS
- APPROXIMATE FENCE LOCATION
- DELINEATION/ CONFIRMATION SOIL SAMPLE LOCATION
- FLOOR BLOCK AREA SOIL SAMPLE LOCATION

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

PROPOSED GROUNDWATER
SAMPLING LOCATIONS

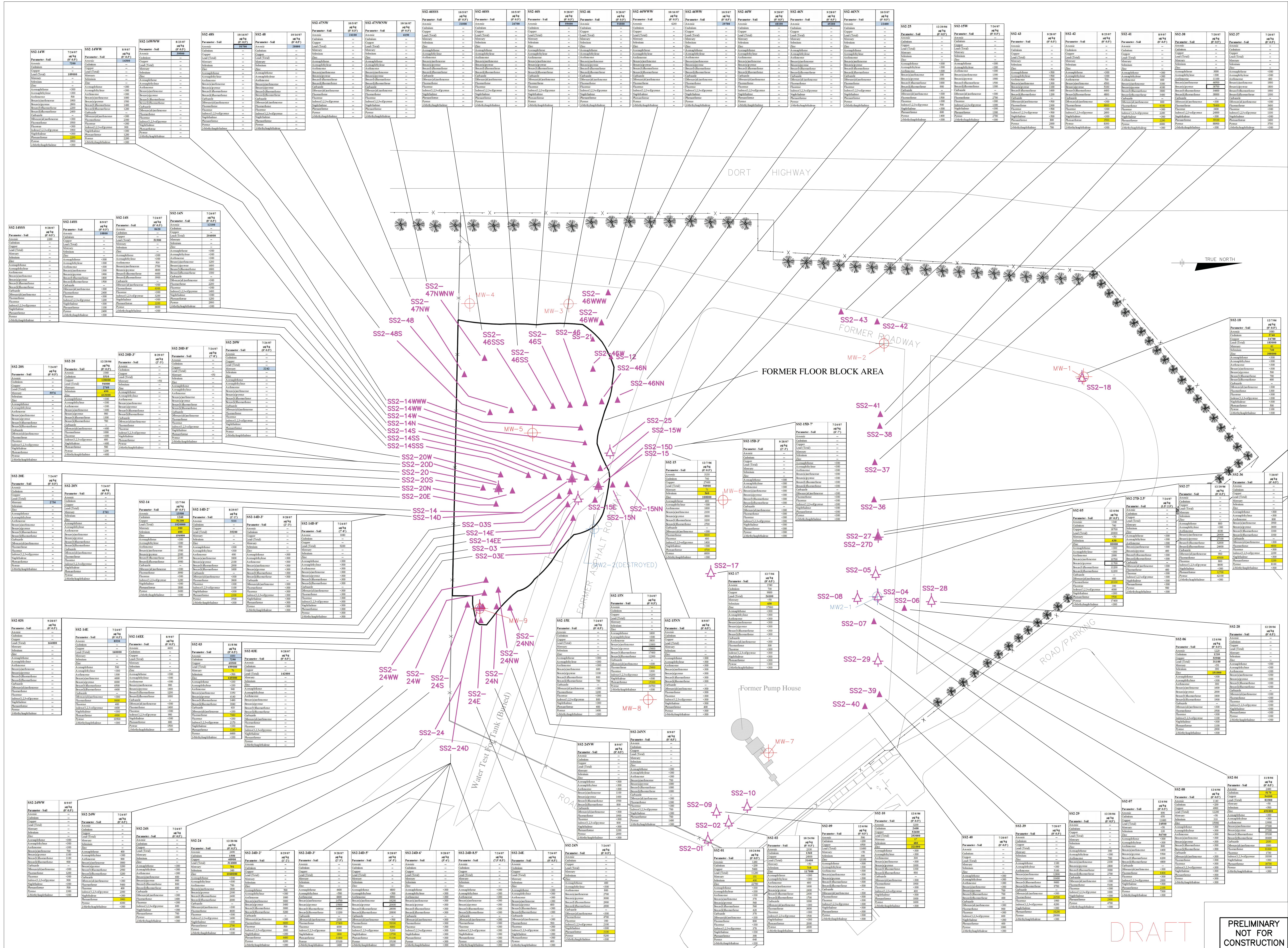


15388/48631.006
APRIL 2012



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PLOT DATE: 4/09/2012 TJK



NOTE: SEE FIGURE 6 FOR MDEQ SOIL CRITERIA AND LEGEND INFORMATION

IN CHARGE OF _____
DESIGNED BY _____ CHECKED BY _____
DRAWN BY _____

0 50 100
1"=50'

1 5/14/2012 REDRAFT - CORRECT SCALE, ETC.
0 5/8/2012 DRAFT - FOR DISCUSSION PURPOSES ONLY
NO. DATE REVISION

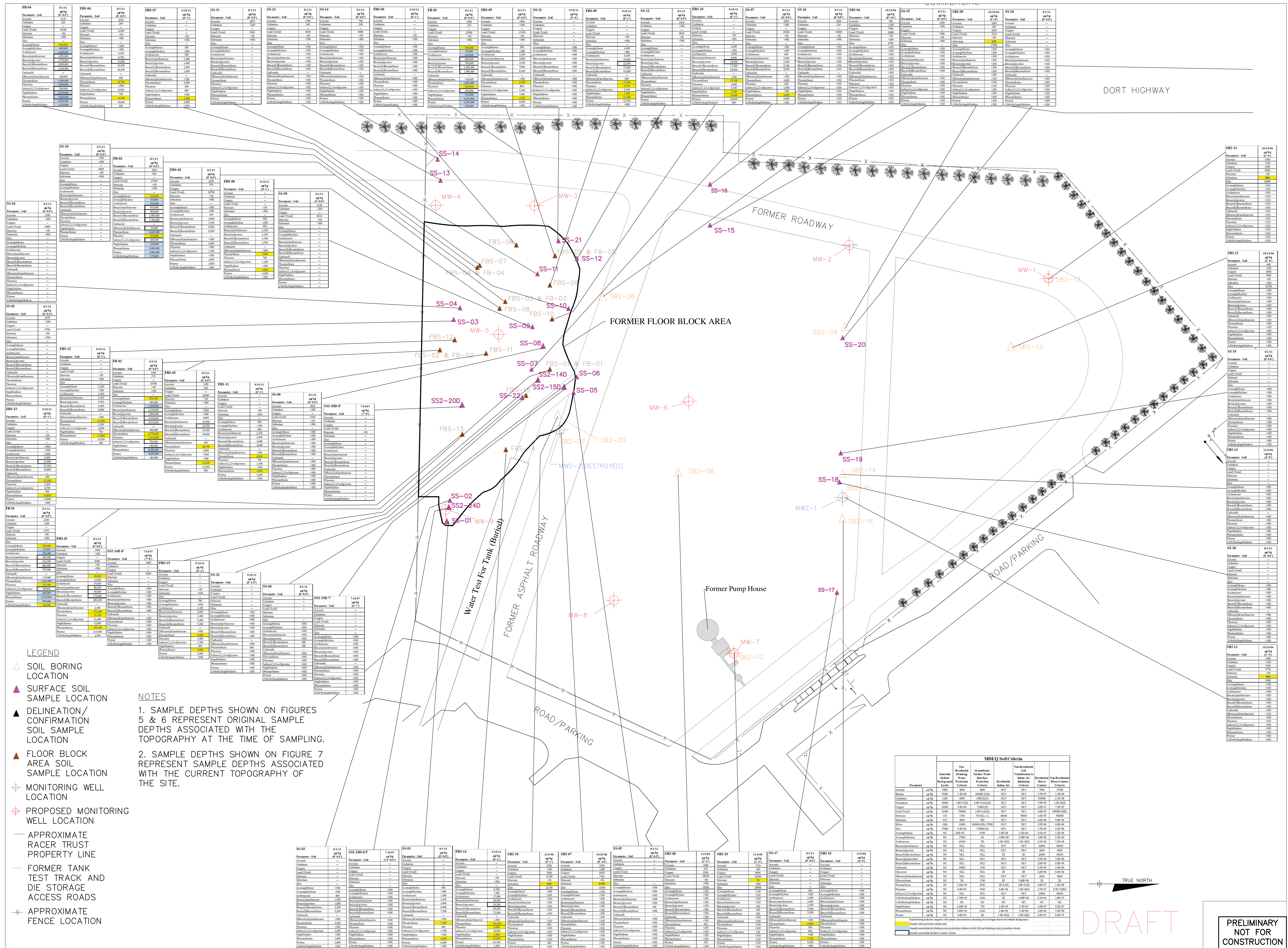
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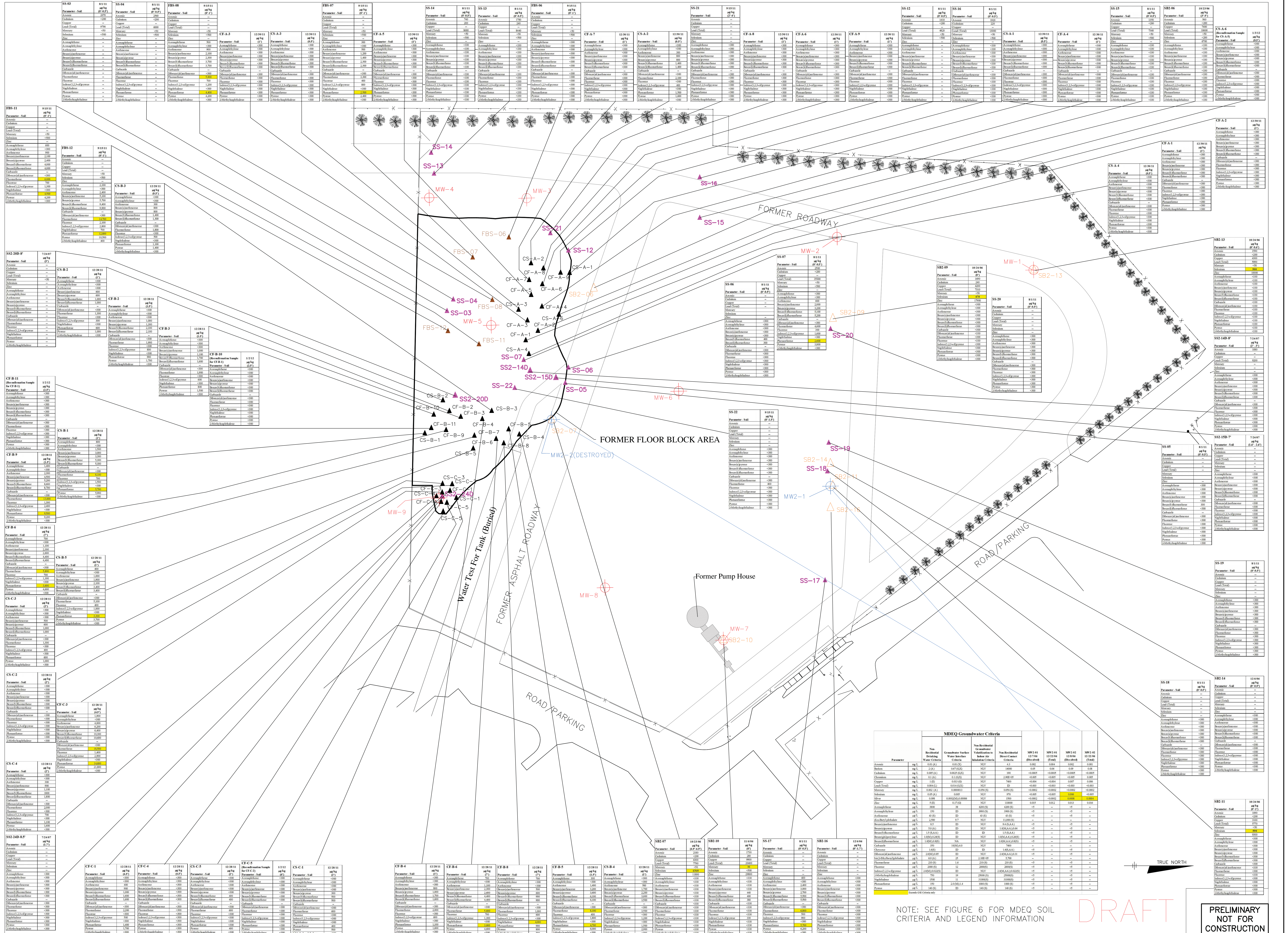
RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MI

FIGURE 5
PRE-IRM HISTORIC
SURFACE SOIL RESULTS

FILE NO.
15388.48631-005
DATE
MAY 2012

005





NOTE: SEE FIGURE 6 FOR MDEQ SOIL CRITERIA AND LEGEND INFORMATION

PRELIMINARY
NOT FOR
CONSTRUCTION

DATE: 05/14/12

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