DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **Dort Highway Land**
Facility Address: **Affronting Dort Highway, Grand Blanc, Michigan 48439**
Facility EPA ID #: **MID 005 356 944**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no – re-evaluate existing data, or

☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action Program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA Corrective Action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives that are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI Determinations status codes should remain in the RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

☒ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

☐ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Groundwater sampling indicates Michigan Department of Environmental Quality (MDEQ) Groundwater Surface Water Interface (GSI) criteria exceedances for arsenic, lead, selenium and silver, and slight drinking water exceedances for arsenic and lead. The attached supporting documentation provides a discussion of the Site data, data tables that include a comparison with "appropriate levels" (GSI and drinking water criteria) and figures illustrating the groundwater potentiometric contours and approximate groundwater flow directions for the Site. Although appropriate for screening purposes, on-Site exceedances of the GSI criteria do not constitute applicable criteria because GSI criteria apply at the point where groundwater is reasonably expected to vent to surface water in concentrations that exceed the generic GSI criteria (in accordance with R 299.5716(1)), which is at Gibson Drain. Gibson Drain is the nearest surface water discharge point at 1,300 feet southwest of the Site.

In addition, the concentrations of arsenic detected in groundwater at the Site are within the range of what has been demonstrated to be local and regional background levels.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

☒ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2].

☐ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):
Groundwater sampling results for downgradient monitoring well MW-4 have consistently remained below the detection limits for arsenic, lead, selenium and silver, indicating that contaminants have not reached this well. Furthermore, arsenic detected in MW-2, which may be considered a downgradient monitoring well, at least during wetter portions of the year (see discussion in attached supporting documentation), remained relatively constant during the four quarterly sampling events conducted during the Groundwater Investigation. In fact, arsenic concentrations at the Site appear to have generally decreased during the Groundwater Investigation, including at monitoring wells MW2-1 and MW-7, which were the only other wells where arsenic was detected above the drinking water (and GSI) criteria.

In addition, lead was only detected in MW-2 slightly above the drinking water criteria of 0.004 mg/L at concentrations varying from 0.005 to 0.009 mg/L during the fourth sampling event, which may have been partially due to elevated turbidity during sampling. Similarly, lead was also detected in monitoring wells MW2-1 and MW-7 only during the fourth sampling event, and was detected in MW-9 just above the criteria during the initial sampling event at 0.006 mg/L and then again during the fourth sampling event at slightly higher concentrations, which could be partially turbidity related.

Similar to MW-4, selenium and silver were not detected in the monitoring wells during the Groundwater Investigation, except for a single detection of silver during the fourth sampling event in MW-9 at a concentration of 0.0003 mg/L, which exceeds the GSI criteria of 0.00006 mg/L, but was below the drinking water criteria of 0.034 mg/L. Furthermore, silver was not detected in the co-located sample during the same sampling event.

Selenium was only detected one time historically on December 8, 2006 at a concentration of 0.006 mg/L in monitoring well MW-2-2 and just above the GSI criteria of 0.005 mg/L, but was not detected during the second sampling event performed on December 22, 2006 or during the Groundwater Investigation; therefore, selenium is no longer considered an constituent of concern (COC) for Site groundwater.

(Continued on next page)

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Therefore, it appears that the groundwater impacts are stable. Furthermore, given that the groundwater observed in the Site monitoring wells exists within thin, potentially discontinuous silty sand seams within an overall clayey glacial drift matrix to depths of over 100 ft, it is likely that groundwater does not readily flow off-Site or migrate vertically and that contaminant concentrations are naturally attenuating. Furthermore, the source of groundwater impacts at the Site, including impacted soil and wood floor blocks, have been removed. Based on this information the horizontal and vertical extent of the three dimensional area of groundwater contamination appears to be stable or decreasing in size.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

☐ If yes - continue after identifying potentially affected surface water bodies.

☒ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Given the Site geology and hydrogeology, generally low concentrations of arsenic, lead and silver detected at the Site, the fact that downgradient monitoring well MW-4 is clean, the source of groundwater impacts at the Site, including impacted soil and wood floor blocks, have been removed, and Gibson Drain is located about a quarter of a mile west of the Site, it is very unlikely that the impacted groundwater at the Site will discharge into Gibson Drain.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions [e.g., the nature, and number, of discharging contaminants, or environmental setting], that significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

☐ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

☐ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

NA

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

☐ If yes - continue after either: 1) identifying the final remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors that should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

☐ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

☐ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

NA

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

☐ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

☒ If no - enter "NO" status code in #8.

☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

NA

A restrictive covenant prohibiting groundwater use will be placed on the Site; however, at this time additional monitoring does not appear necessary based on the Site geology and hydrogeology, generally low and relatively consistent concentrations of arsenic, sporadic low concentrations of lead and silver detected at the Site, the fact that downgradient monitoring well MW-4 is clean, the source of groundwater impacts at the Site, including impacted soil and wood floor blocks, has been removed, and Gibson Drain is located about a quarter of a mile west of the Site.

8. Check the appropriate RCRIS codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), obtain supervisor signature and date on the EI determination below, and (attach appropriate supporting documentation as well as a map of the facility.

☒ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Dort Highway Land** facility, EPA ID # **MID 005 356 944**, located in **Grand Blanc, Michigan**. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be reevaluated when the agency/state becomes aware of significant changes at the facility.

☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

☐ IN - More information is needed to make a determination.

Note: No further monitoring is considered necessary at this time.

Completed by: (signature) Michelle Kaysen Date 6/20/14
(print) MICHELLE KAYSEN
(title) ENVIRONMENTAL SCIENTIST

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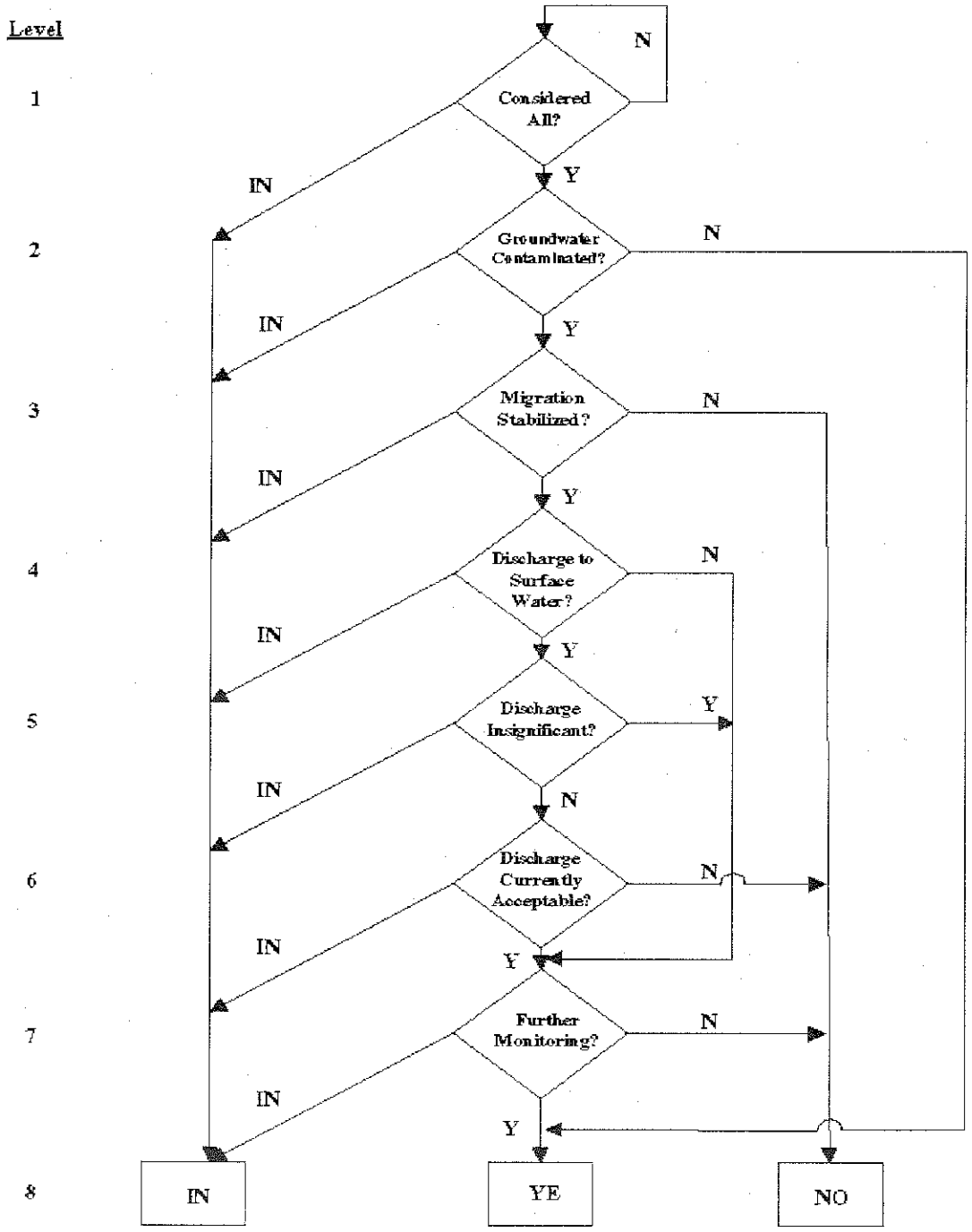
MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)



Supporting Documentation for:
Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

SITE LOCATION AND DESCRIPTION

The Site is located in Grand Blanc Township, Genesee County, Michigan (Figure 1) in an industrial and commercial area of Grand Blanc, Michigan and fronts on Dort Highway (Figure 2). The current address for the Site (10800 S. Saginaw Street) is also associated with the adjacent General Motors LLC (GM) plant, and at some point a unique address for the Site may be established.

The Site is presently owned by RACER Properties, LLC, a wholly-owned subsidiary of RACER Trust, which received ownership of the Site following the bankruptcy of General Motors Corporation (former GM Corporation)/Motors Liquidation Company (MLC) and finalization of a Settlement Agreement through the bankruptcy court. The Dort Highway Land Site is comprised of a 20.44 acre portion of what was formerly a GM Corporation facility. The GM operational portion of the plant is now known as the Weld Tool Center (WTC) – Grand Blanc (Figure 1). This 20.44 acre parcel, now owned by RACER, is knows as Area 2. Per the bankruptcy settlement process, activities are in progress to transfer ownership of the GM operational portion of the former plant to GM.

The Site is currently unused vacant land and a fence encloses the property, separating it from the adjacent GM facility. The primary access gate for the Site is located in the northeast portion of the Site; however, there is a second access gate for entering the Site property located in the southwest corner of the Site (Figure 2), which can only be accessed by going through GM's security. A line of pine trees is present just inside of the perimeter fence along the western, northern and northeastern boundary of the Site.

SITE BACKGROUND AND LAND USE

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 for 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 General Motors Corporation in 1951. The Site was then used for die and other equipment storage during the manufacturing of automobile parts at the adjacent plant, and for water storage. 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 formerly at the Site were also decommissioned and demolished during this time. GM currently fabricates, assembles and repairs robotic systems for automotive plants at the adjacent plant (O'Brien & Gere, 2011a).

Approximately 4 feet of soils (and fill materials, including concrete and asphalt pavement) on average were stripped/removed from the Site during the demolition of the former Press Room to fill in its basement. The soil removal activities were completed in 2009 on the Site, and no seeding or stabilization of the Site was undertaken. Some areas were not stripped to the 4 foot depth due to encountering concrete or debris in the former water test for tank trough and former floor block areas (Figure 2).

SITE TOPOGRAPHY AND SURFACE WATER FEATURES

The topography of the Site is generally characterized by a gentle northeast to southwest slope along the southern and north central portions of the Site, a gentle northwest slope along the eastern portion of the Site, and a gentle north to south slope along the very western portion of the Site. Figure 3 represents the current, approximate surface topography of the Site (survey completed in November/December 2010) after the soil removal activities were completed in 2009. In 2011 GM installed an approximate 1 to 4 foot high berm along the southern boundary of the Site to separate the GM and Site properties, and installed a new perimeter fence along the southern and eastern boundaries of the Site. .Along the western edge of the Site the topography rises to generally contain the surface drainage on Site; therefore, two drainage structures (Figure 3) were installed in 2011 to allow discharge of Site storm water to the drainage ditch west of the Site. Water ponds during/after precipitation near the two discharge structures. This ditch west of the Site discharges to a drainage ditch that drains to the west below Dort Highway and eventually discharges to Gibson Drain located approximately 1,300 ft southwest of the Site. The topographic relief at the Site is about 15 ft. It varies from a high of about 836 ft above mean sea level (aMSL) at the very north corner of the Site and along the southeast corner of the Site to 821 ft aMSL in the southwestern corner of the Site.

SITE GEOLOGY

The Site geology generally consisted of a layer of damp, brown silty SAND fill material to depths of up to 4 fbg in the south central to southeastern portion of the Site where remediation efforts including backfilling of excavations took place, and along the northeastern and northwestern perimeters of the Site where less soil was removed, but is absent elsewhere due to the aforementioned soil removal activities conducted at the Site. In addition, the former asphalt, concrete, gravel or topsoil that once capped the Site, depending on the location on Site, were generally removed during the soil removal activities.

Underlying the fill materials, where present, is a silty clay with little to some sand consistent throughout almost the entire Site. This clay can be found down to approximately 16.5 feet below ground. Underlying the clay, to depths of up to 24 fbg (the deepest depth investigated), the soil became a less mottled clay with discontinuous sand seams, extending to depths of over 100 fbg in the Site area (U of M –Flint, 1994).

Thin and apparently discontinuous sand seams ranging from less than an inch thick to 3.6 feet thick were observed in the monitoring well borings, except in the borings for MW-5 and MW2-1 (Figure 1); however, MW2-1 had two approximately 6 inch thick seams of wet, sandy clay from 17.5 to 18 fbg and 19.5 to 20 fbg. The sand seams generally consisted of moist to wet, brown, coarse to fine (often predominantly medium to fine) sand, little silt to silty sand with a USCS symbol of SM. Figure 2 presents three cross-sections (A-A', B-B'-B", and C-C') to help illustrate the Site geology, and the relationship between the historical surface topography and the post-soil removal (2010)/postremediation (2012) topography of the Site.

SITE HYDROGEOLOGY

Depths to groundwater were measured within the monitoring wells at the Site in June, September and December 2012 and March 2013 during the quarterly groundwater investigation sampling events and are presented in Table 1. However, these water levels may not correspond to the depth of the true (unconfined) groundwater table or phreatic surface, as the saturated sand seams observed at the Site may constitute semi-confined saturated zones and therefore be considered artesian zones. This is supported by field observations of unsaturated soils during drilling and sampling, and the depth to

which groundwater was observed in several of the monitoring wells, but in particular within monitoring well MW-3 on March 14, 2013, which was approximately 0.12 ft above the ground surface.

The June 27, 2012 results indicate that the groundwater level in MW-5, which had no sand seams, had not completely stabilized prior to measuring the water level as the depth to groundwater in MW-5 was 21.00 ft below top of casing (fbTOC), well below levels in other wells in the area at that time, and water levels obtained from MW-5 during subsequent sampling events, which were around 6 to 8 fbTOC. The groundwater levels collected on September 27, 2012 ranged from 4.32 ft fbTOC or 2.14 fbg at MW-3 to 11.04 fbTOC or 8.70 fbg at MW-7 (Table 1), and appear to represent typical groundwater levels (piezometric heads) during drier periods, and provide an indication of the groundwater flow direction at the Site. The resulting groundwater elevations ranged from 827.32 ft above mean sea level (aMSL) at MW-9 to 818.60 ft aMSL at MW-4 (Table 1 and Figure 5). Figures 3 through 6 provide groundwater contour maps for each of the quarterly sampling events. The groundwater levels collected on March 14, 2013 may represent the typical groundwater levels during wetter periods, which likely indicates that ponded water within the topographic low area located near MW-3 and MW-4 affects the water level in these wells during wetter periods causing a slightly more westward flow direction during these periods.

The groundwater contours indicate a flow pattern originating from the southeastern and northern portions of the Site with a general overall westerly/south westerly flow direction. The inclusion of the groundwater level for the shallow sand seam at MW-1 in the contour map provides a more southerly flow component near the northern portion of the Site. The groundwater flow pattern in many shallow perched/primarily clayey near surface hydrogeologic settings can be complex, locally variable, and in some cases contours of groundwater elevations may even indicate that the groundwater elevations should not be contoured. However, the groundwater flow direction indicated by the contours of the groundwater elevations in the monitoring wells at the Site agrees with the predicted flow direction based on topographic and surface water information for the Site area. Shallow groundwater in the Site area appears to ultimately flow toward Gibson Drain located west of the Site.

WATER SUPPLY

Local municipally supplied drinking water in the Site area is supplied by the Grand Blanc Township Water Supply System (through a series of organizations). The source of the water is Lake Huron. However, the City of Grand Blanc, which is located just east of the Site, operates four municipal groundwater wells. The closest of these is approximately 1 mile east (sidegradient) of the Site (Grand Blanc Well #3). Each of the municipal wells is over 300 ft deep, is cased through the glacial drift soils and produces water from the regional bedrock aquifer (sandstone units of the Saginaw Formation). The Site is not in a designated wellhead protection area and the only designated wellhead protection area located within 1-mile of the Site is located east or sidegradient of the Site and is associated with Well #3.

Groundwater on the Site is not used for potable or non-potable purposes. The expected future use of groundwater at the property is not expected to change and will be maintained via a deed restriction that will be placed on the property as part of the Corrective Measures for the Site. The most recent Phase I ESA report (O'Brien & Gere, 2010) identified fifty-five wells within 1 mile of the Site. Therefore, groundwater in the area near the Site is used for potable or non-potable purposes, although generally not from the glacial soils, but from the regional bedrock aquifer. Based on the Michigan Department of Environmental Quality (MDEQ) Water Well Viewer database, the nearest private well is approximately a tenth of a mile northwest of the Site (at 2524 Gibson) and is cased through the glacial drift soils (to 150 fbg) and produces water from the regional bedrock aquifer. Similarly, the next closest well is a former production well (#5) located on the GM property about a tenth of a mile south of the Site, which also obtained water from the regional bedrock aquifer. Well #5 was formerly used to provide fire protection water for the adjacent GM plant, but has not been used in over a decade and is no longer operational. The next closest potable well is located approximately a quarter of a mile northwest of the

Site (at 2435 Gibson) and is also cased through the glacial drift soils (to 171 fbg) and also produces water from the regional bedrock aquifer, as are the next closest potable wells located a half mile or greater west of the Site.

There is a state-wide regulation prohibiting the installation of a well for potable use within the uppermost 25 feet below the ground surface.

GROUNDWATER INVESTIGATION

A Groundwater Investigation (O'Brien & Gere, 2012b), which included the installation of nine monitoring wells, MW-1 through MW-9 (Figure 1) at the Site to assess Site-specific groundwater flow conditions and potential impacts to groundwater from historical Site activities/impacts. Monitoring wells MW-1 through MW-9 and existing monitoring well MW2-1, originally installed in 2006, were developed and subsequently sampled quarterly for one year during the Groundwater Investigation. Static water levels and groundwater samples were collected from monitoring wells MW-1 through MW-9 and existing well MW2-1 (Figure 2) during the initial groundwater sampling event that took place between June 27 and July 2, 2012, approximately two weeks following well development. Subsequently, static water levels were measured on a quarterly basis along with the collection of groundwater samples from selected monitoring wells, including MW-2, MW-4, MW-7, MW-9 and MW2-1. These wells were selected for sampling based on the results from the initial groundwater sampling event, as discussed below. Static water level and groundwater elevation data are summarized in Table 1. Using these data, a groundwater elevation contour map was prepared for each of the four quarterly events (Figures 3 through 6).

The groundwater samples were collected using low flow sampling methods. While the well was being purged, indicator field parameters consisting of pH, conductivity, temperature, oxidation-reduction potential (ORP), turbidity, and dissolved oxygen (DO) were monitored continuously using an in-line meter, and were recorded at five minute intervals.

The initial groundwater samples were analyzed for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) dissolved metals (if the turbidity did not stabilize below 20 nephelometric turbidity units [NTUs]) and RCRA total metals. Subsequently, groundwater samples were analyzed for the presence of dissolved and total arsenic, lead, selenium and silver (*i.e.*, selected RCRA metals) based on the historical detection of selenium and silver above the GSI criteria in MW2-2 (Table 2) and the initial groundwater sampling event results (arsenic and lead, see Table 3), as discussed below.

Table 3 presents a summary of groundwater analytical results for detected constituents from the Groundwater Investigation. In the first round of sampling, three VOC constituents were detected during the sampling, but all detections were below the MDEQ criteria. 1,1-Dichloroethane was detected in MW-3 at 6 micrograms per liter (µg/L), which is much less than its associated cleanup criteria. Bromodichloromethane was detected in the equipment blank at 2 µg/L, and chloroform was detected in the equipment blank at 9 µg/L and the trip blank (TB-3) at 5 µg/L, and their detections are considered laboratory artifacts (*i.e.*, contamination). Similarly, dimethyl phthalate was the only SVOC detected, and was detected at MW-1, MW-2 MW2-1, MW-5, MW-8, and the field blank (FB-1) at concentrations ranging from 5 to 10 µg/L, but was also detected in the associated laboratory method blank. Therefore, dimethyl phthalate is considered a laboratory contaminant. The VOC and SVOC results confirm the results from historical groundwater sampling and indicate that SVOCs, in particular PAHs, do not appear to have leached from historical soil impacts at the Site, and that VOCs and SVOCs are not constituents of concern (COCs) for Site groundwater. Removal of the impacted soil and floor block material addressed these constituents at the Site. Therefore, VOCs and SVOCs were dropped from further analysis during the subsequent sampling events.

Arsenic, barium, and lead were the only metals detected during the Groundwater Investigation. Arsenic was detected above the MDEQ nonresidential drinking water and GSI criteria of 0.01 mg/L at MW-2, MW2-1 and MW-7 during each of the four quarterly events, except in MW-7 during the third (December 2012) sampling event. Arsenic was retained for analysis during the subsequent sampling events based on the initial groundwater sampling event results. The arsenic results were generally highest during the second (September 2012) sampling event and lowest during the fourth (March 2013) sampling event. Arsenic remains undetected in downgradient monitoring well MW-4. The dissolved and total results were within acceptable relative percent differences (RPD), except during the March 2013 when the dissolved arsenic results in MW-2 and MW-7 were about a third to half the total arsenic results. Generally it appears that the turbidity of the samples did not affect the overall results. Elevated arsenic in groundwater is common in southeast Michigan due to glacial till (clayey) soils that naturally contain arsenic. According to the MDEQ Water Well Viewer database, arsenic concentrations in the regional aquifer range from less than 10 µg/L to greater than 50 µg/L within the Site area. It is noted that detections of arsenic in wells MW-2, MW2-1, MW-7 are upgradient and away from areas where elevated arsenic in soils was historically detected (in the former Floor Block area [O'Brien & Gere, 2011a]).

Barium was detected in monitoring wells MW-1 through MW-9 and MW2-1, but was below the MDEQ criteria during the initial groundwater sampling event. Therefore, barium was not analyzed during the subsequent sampling events.

Lead was only detected at monitoring well MW-9 during the initial sampling event, and was detected at a concentration of 0.006 mg/L, which is above the MDEQ nonresidential drinking water criterion of 0.004 mg/L, but was below the GSI criterion of 0.014 mg/L. Lead was retained for analysis during the subsequent sampling events based on the initial groundwater sampling event results. Lead was either not detected or detected at the detection limit of 0.003 mg/L, which is below the drinking water criterion during the second and third sampling events. However, lead was detected above the MDEQ nonresidential drinking water criterion at MW-2, MW2-1, MW-7 and MW-9 and the GSI criterion at MW-7 and MW-9 during the fourth groundwater sampling event at concentrations ranging from 0.005 mg/L to 0.021 mg/L. Although, the arsenic results did not appear to be greatly affected by the sample turbidity, the lead detections do appear to potentially be linked to elevated turbidity during sampling. Monitoring wells MW-2 and MW-9 had the highest turbidity readings during the fourth sampling event, and MW-7 had its second highest turbidity during this sampling event. The dissolved and total results were within acceptable RPD, except during the March 2013 when the dissolved lead results in MW-7 and MW-9 were about a half to two thirds the total lead results. The Phase II ESA (O'Brien & Gere, 2007a) analytical results did not indicate that lead was a COC in the area surrounding monitoring wells MW-2, MW2-1, MW-7 and MW-9, and in fact was only detected above the MDEQ nonresidential drinking water protection criterion at one soil sampling location (SS2-14) during the Phase II Investigation. SS2-14 was located near MW-5, and was excavated during the soil removal activities conducted by the former GM Corporation to fill in the former Press Room basement.

During the March 2013 sampling event silver was detected above the MDEQ GSI criterion of 0.0002 mg/L at MW-9 at a concentration of 0.0003 mg/L. This is the first time that silver was detected in the monitoring wells during the Groundwater Investigation.

CONCLUSIONS

The results of the Groundwater Investigation at the Site demonstrates that groundwater at the Site does not present a significant risk under current or future uses of the Site nor do detected exceedances in the groundwater pose a significant risk due to potential off-site migration, including potential venting to surface water.

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Table 1
Depth to Groundwater Levels in Monitoring Wells
RACER Trust- Dort Highway Land
Grand Blanc, Michigan

Well	Top Of Casing Elev. (ft) *	Top of Sand Pack Elev. (ft)	Bottom of Sand Pack Elev. (ft)	Date	Depth To Water (ft)	Static Water Elev. (ft)
MW-1	831.76	825.69	819.69	27-Jun-12	6.06	825.70
				27-Sep-12	8.96	822.80
				14-Mar-13	6.76	825.00
MW-2	829.31	814.64	806.84	27-Jun-12	7.09	822.22
				27-Sep-12	9.05	820.26
				19-Dec-12	9.08	820.23
				14-Mar-13	7.95	821.36
MW2-1	832.33	821.05	812.35	27-Jun-12	8.69	823.64
				27-Sep-12	10.56	821.77
				19-Dec-12	12.25	820.08
				14-Mar-13	9.94	822.39
MW-3	824.99	816.81	807.81	27-Jun-12	5.30	819.69
				27-Sep-12	4.32	820.67
				14-Mar-13	2.06	822.93
MW-4	824.03	818.12	812.12	27-Jun-12	5.60	818.43
				27-Sep-12	5.43	818.60
				19-Dec-12	2.47	821.56
				10-Apr-13	2.25	821.78
MW-5	829.58	811.43	803.43	27-Jun-12	21.00	808.58
				27-Sep-12	7.76	821.82
				14-Mar-13	6.09	823.49
MW-6	828.63	816.25	808.25	27-Jun-12	3.95	824.68
				27-Sep-12	7.20	821.43
				14-Mar-13	6.55	822.08
MW-7	834.20	818.26	811.86	27-Jun-12	9.51	824.69
				27-Sep-12	11.04	823.16
				19-Dec-12	10.96	823.24
				14-Mar-13	10.56	823.64
MW-8	833.22	820.20	811.20	27-Jun-12	5.39	827.83
				27-Sep-12	8.15	825.07
				14-Mar-13	4.82	828.40
MW-9	835.45	817.48	809.98	27-Jun-12	8.05	827.40
				27-Sep-12	8.13	827.32
				19-Dec-12	7.12	828.33
				14-Mar-13	7.27	828.18

Notes

* Casing elevations were provided by CTI Engineers and are in feet relative to National Geodetic Vertical Datum

Static water levels were inadvertantly not collected from monitoring wells MW-1, MW-3, MW-5, MW-6 and MW-8 during the December groundwater sampling event.

The shallow groundwater in MW-4 was frozen on March 14, 2013, so the water level was taken on April 10, 2013 and reflected a similar water level as on the 14th.

Table 2
Summary of Historical Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria				MW2-01 (Dissolved) 12/07/2006	MW2-01 (Total) 12/22/2006	MW2-02 (Dissolved) 12/08/2006	MW2-02 (Total) 12/22/2006
		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)	0.01 (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	6.0 (A)	25	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 Detected Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria: Residential Drinking Water Criteria & RBSLs	MDEQ Criteria: Groundwater Surface Water Interface Criteria & RBSLs	MDEQ Criteria: Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria & RBSLs	MDEQ Criteria: Groundwater Contact Criteria & RBSLs	MW-1		MW-2											
										(CO-LOCATED)						(CO-LOCATED)			(Dup 1)
						28-Jun-12		28-Jun-12		27-Sep-12		27-Sep-12		19-Dec-12		19-Dec-12		14-Mar-13		14-Mar-13	
						Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals																					
Arsenic	mg/L	0.01 (A)	0.01	NLV	4.3	<0.002	<0.002	0.027	0.028	0.035	0.034	0.034	0.035	0.031	0.032	0.030	0.035	0.009	0.027	0.010	0.027
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	0.084	0.098	0.042	0.045	--	--	--	--	--	--	--	--	--	--	--	--
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	0.005	0.005	0.006	0.009
Silver	mg/L	0.034	0.0002 (M); 0.00006	NLV	1.50E+06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SVOCs																					
Dimethyl phthalate	µg/L	210,000	NA	NLV	4.2E+06 (S)	--	10*	--	5*	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																					
Bromodichloromethane	µg/L	80 (A,W)	ID	37,000	14,000	--	<1	--	<1	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	µg/L	80 (A,W)	350	1.80E+05	1.50E+05	--	<1	--	<1	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	2,500	740	2.30E+06	2.40E+06	--	<1	--	<1	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
Exceeds residential drinking water criteria or both GSI and drinking water criteria
Exceeds GSI protection criteria only
* Compound also found in associated method blank.
(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
(S) Criterion defaults to the hazardous substance-specific water solubility limit.
(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.
(W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 µg/L.
(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.
(NLV) Means hazardous substance is not likely to volatilize under most conditions.
(ID) Means insufficient data to develop criterion.
(--) Not analyzed.

Table 3
Summary of Detected Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria: Residential Drinking Water Criteria & RBSLs	MDEQ Criteria: Groundwater Surface Water Interface Criteria & RBSLs	MDEQ Criteria: Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria & RBSLs	MDEQ Criteria: Groundwater Contact Criteria & RBSLs	MW2-1								MW-3	MW-4						
						28-Jun-12		27-Sep-12		19-Dec-12		14-Mar-13		29-Jun-12	29-Jun-12	27-Sep-12		19-Dec-12		10-Apr-13	
						Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals																					
Arsenic	mg/L	0.01 (A)	0.01	NLV	4.3	0.020	0.018	0.028	0.030	0.010	0.010	0.011	0.010	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	0.081	0.083	--	--	--	--	--	--	0.094	0.135	--	--	--	--	--	--
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	0.007	0.009	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Silver	mg/L	0.034	0.0002 (M); 0.00006	NLV	1.50E+06	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
SVOCs																					
Dimethyl phthalate	µg/L	210,000	NA	NLV	4.2E+06 (S)	--	8*	--	--	--	--	--	--	<5	<5	--	--	--	--	--	--
VOCs																					
Bromodichloromethane	µg/L	80 (A,W)	ID	37,000	14,000	--	<1	--	--	--	--	--	--	<1	<1	--	--	--	--	--	--
Chloroform	µg/L	80 (A,W)	350	1.80E+05	1.50E+05	--	<1	--	--	--	--	--	--	<1	<1	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	2,500	740	2.30E+06	2.40E+06	--	<1	--	--	--	--	--	--	6	<1	--	--	--	--	--	--

Notes:

Exceeds residential drinking water criteria or both GSI and drinking water criteria

Exceeds GSI protection criteria only

* Compound also found in associated method blank.

(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

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

(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

(W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 µg/L.

(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.

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

(ID) Means insufficient data to develop criterion.

(--) Not analyzed.

Table 3
Summary of Detected Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria: Residential Drinking Water Criteria & RBSLs	MDEQ Criteria: Groundwater Surface Water Interface Criteria & RBSLs	MDEQ Criteria: Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria & RBSLs	MDEQ Criteria: Groundwater Contact Criteria & RBSLs	MW-5	MW-6	MW-7 (CO-LOCATED)										MW-8 (DUP-1)	
						29-Jun-12	2-Jul-12	28-Jun-12		28-Jun-12		27-Sep-12		19-Dec-12		14-Mar-13		2-Jul-12	
						Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Total	Total
Metals																			
Arsenic	mg/L	0.01 (A)	0.01	NLV	4.3	<0.002	<0.002	0.025	0.024	0.024	0.029	0.030	0.028	0.010	0.010	0.005	0.011	<0.002	<0.002
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	0.054	0.046	0.090	0.092	0.090	0.112	--	--	--	--	--	--	0.105	0.111
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.009	0.020	<0.003	<0.003
Silver	mg/L	0.034	0.0002 (M); 0.00006	NLV	1.50E+06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005
SVOCs																			
Dimethyl phthalate	µg/L	210,000	NA	NLV	4.2E+06 (S)	8*	<5	--	<5	--	<5	--	--	--	--	--	--	8*	10*
VOCs																			
Bromodichloromethane	µg/L	80 (A,W)	ID	37,000	14,000	<1	<1	--	<1	--	<1	--	--	--	--	--	--	<1	<1
Chloroform	µg/L	80 (A,W)	350	1.80E+05	1.50E+05	<1	<1	--	<1	--	<1	--	--	--	--	--	--	<1	<1
1,1-Dichloroethane	µg/L	2,500	740	2.30E+06	2.40E+06	<1	<1	--	<1	--	<1	--	--	--	--	--	--	<1	<1

Notes:

Exceeds residential drinking water criteria or both GSI and drinking water criteria

Exceeds GSI protection criteria only

* Compound also found in associated method blank.

(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

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

(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

(W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 µg/L.

(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.

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

(ID) Means insufficient data to develop criterion.

(--) Not analyzed.

Table 3
Summary of Detected Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria: Residential Drinking Water Criteria & RBSLs	MDEQ Criteria: Groundwater Surface Water Interface Criteria & RBSLs	MDEQ Criteria: Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria & RBSLs	MDEQ Criteria: Groundwater Contact Criteria & RBSLs	MW-9													
						27-Jun-12		27-Sep-12		27-Sep-12 (DUP-1)		19-Dec-12		19-Dec-12 (DUP-1)		14-Mar-13		14-Mar-13 (CO-LOCATED)	
						Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals																			
Arsenic	mg/L	0.01 (A)	0.01	NLV	4.3	<0.002	0.002	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	<0.002	0.006	<0.002	0.007
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	0.076	0.086	--	--	--	--	--	--	--	--	--	--	--	--
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	0.004	0.006	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.011	0.018	0.012	0.021
Silver	mg/L	0.034	0.0002 (M); 0.00006	NLV	1.50E+06	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	0.0003	<0.0002	<0.0002
SVOCs																			
Dimethyl phthalate	µg/L	210,000	NA	NLV	4.2E+06 (S)	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																			
Bromodichloromethane	µg/L	80 (A,W)	ID	37,000	14,000	--	<1	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	µg/L	80 (A,W)	350	1.80E+05	1.50E+05	--	<1	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	2,500	740	2.30E+06	2.40E+06	--	<1	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

Exceeds residential drinking water criteria or both GSI and drinking water criteria

Exceeds GSI protection criteria only

* Compound also found in associated method blank.

(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

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

(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

(W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 µg/L.

(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.

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

(ID) Means insufficient data to develop criterion.

(--) Not analyzed.

Table 3
Summary of Detected Groundwater Analytical Results
RACER Trust - Dort Highway Land
Grand Blanc, Michigan

Parameter		MDEQ Criteria: Residential Drinking Water Criteria & RBSLs	MDEQ Criteria: Groundwater Surface Water Interface Criteria & RBSLs	MDEQ Criteria: Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria & RBSLs	MDEQ Criteria: Groundwater Contact Criteria & RBSLs	EB-1 (Equip Blank) 2-Jul-12 Total	EB-1 (Equip Blank) 27-Sep-12 Total	EB-1 (Equip Blank) 19-Dec-12 Total	EB-1 (Equip Blank) 14-Mar-13 Total	FB-1 (Field Blank) 2-Jul-12 Total	FB-1 (Field Blank) 27-Sep-12 Total	FB-1 (Field Blank) 19-Dec-12 Total	FB-1 (Field Blank) 14-Mar-13 Total	TB-1 (Trip Blank) 28-Jun-12 Total	TB-2 (Trip Blank) 29-Jun-12 Total	TB-3 (Trip Blank) 2-Jul-12 Total
Metals																
Arsenic	mg/L	0.01 (A)	0.01	NLV	4.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Barium	mg/L	2 (A)	0.67 (G,X)	NLV	14000	<0.005	--	--	--	<0.005	--	--	--	--	--	--
Lead (Total)	mg/L	0.004 (L)	0.014 (G,X)	NLV	ID	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	--	--	--
Silver	mg/L	0.034	0.0002 (M); 0.00006	NLV	1.50E+06	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	--	--	--
SVOCs																
Dimethyl phthalate	µg/L	210,000	NA	NLV	4.2E+06 (S)	<5	--	--	--	9*	--	--	--	--	--	--
VOCs																
Bromodichloromethane	µg/L	80 (A,W)	ID	37,000	14,000	2	--	--	--	<1	--	--	--	<1	<1	<1
Chloroform	µg/L	80 (A,W)	350	1.80E+05	1.50E+05	9	--	--	--	<1	--	--	--	<1	<1	5
1,1-Dichloroethane	µg/L	2,500	740	2.30E+06	2.40E+06	<1	--	--	--	<1	--	--	--	<1	<1	<1

Notes:

Exceeds residential drinking water criteria or both GSI and drinking water criteria

Exceeds GSI protection criteria only

* Compound also found in associated method blank.

(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

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

(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

(W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 µg/L.

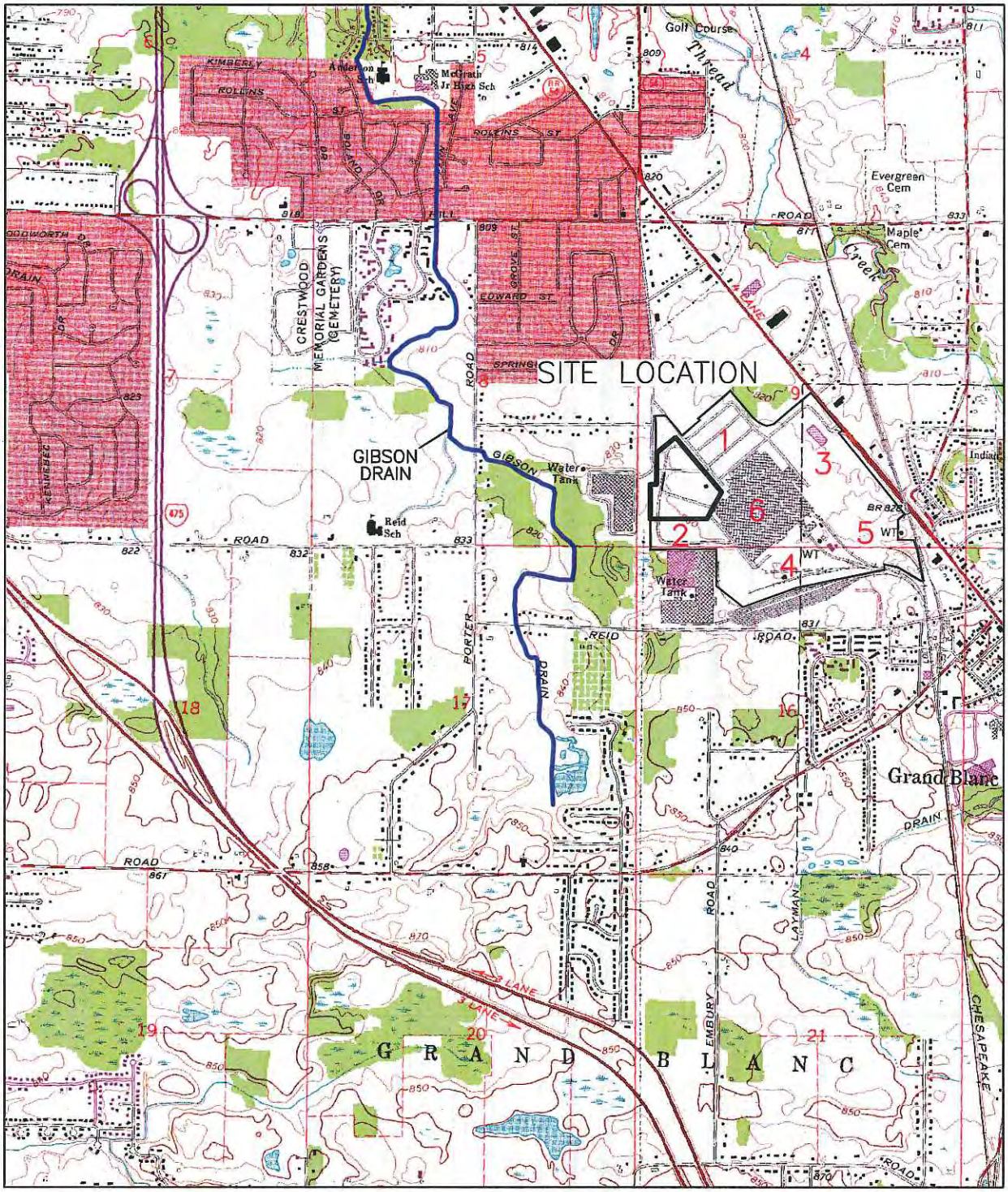
(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

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

(ID) Means insufficient data to develop criterion.

(--) Not analyzed.

FIGURE 1



MICHIGAN
QUADRANGLE LOCATION

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

SITE LOCATION

TRUE NORTH

0 1

APPROXIMATE SCALE
ONE MILE

14774/50136.001
JUNE 2013

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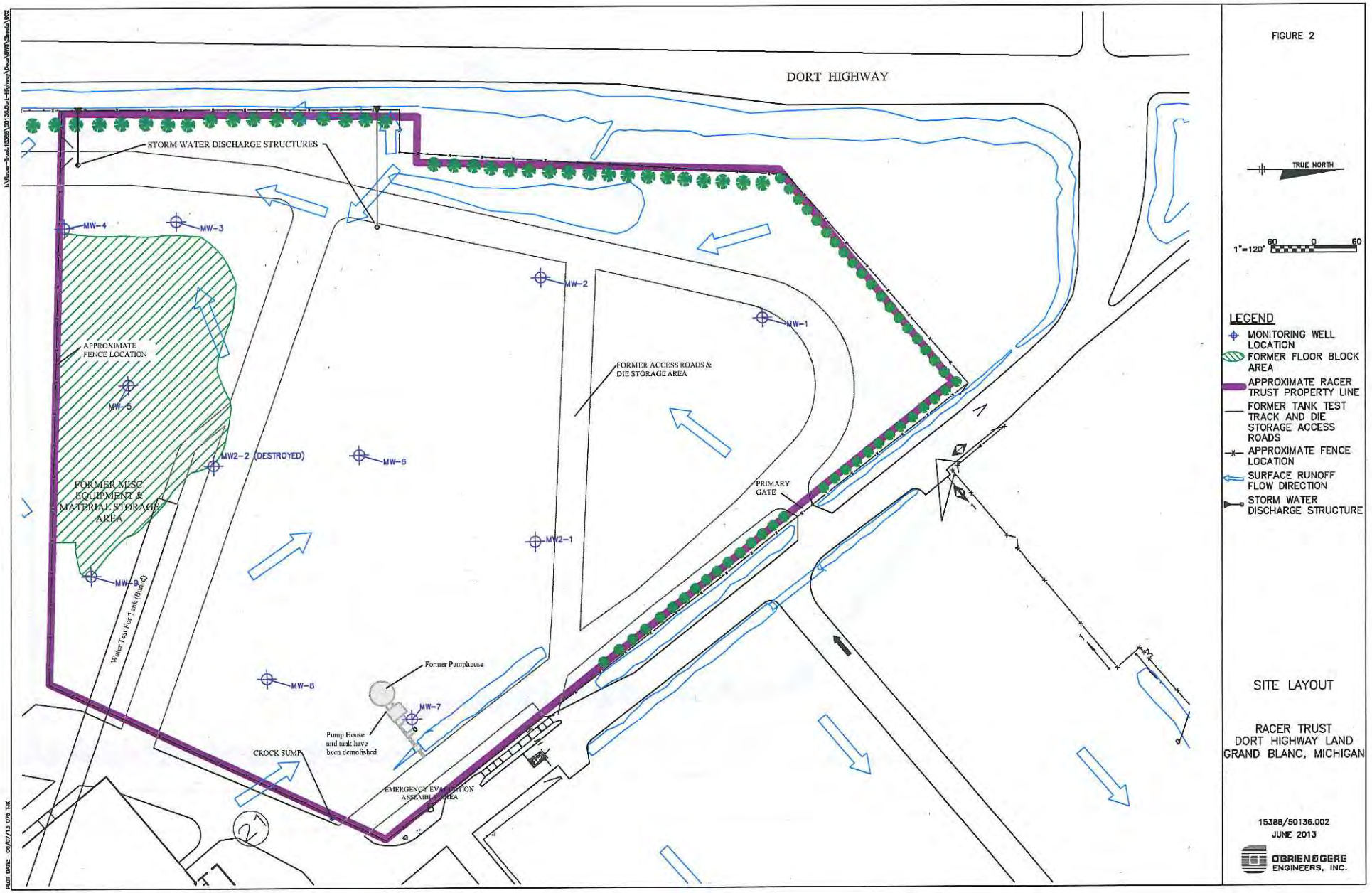

DORT HIGHWAY
STORM WATER DISCHARGE STRUCTURES
MW-4
MW-3
MW-2
MW-1
APPROXIMATE FENCE LOCATION
MW-5
FORMER ACCESS ROADS & DIE STORAGE AREA
MW2-2 (DESTROYED)
MW-6
FORMER MISC. EQUIPMENT & MATERIAL STORAGE AREA
PRIMARY GATE
MW2-1
MW-9
Water Test For Tank (Island)
Former Pumphouse
MW-8
MW-7
Pump House and tank have been demolished
CROCK SUMP
EMERGENCY EVACUATION ASSEMBLY AREA
FIGURE 2
TRUE NORTH
1"=120'
60
0
60
LEGEND
MONITORING WELL LOCATION
FORMER FLOOR BLOCK AREA
APPROXIMATE RACER TRUST PROPERTY LINE
FORMER TANK TEST TRACK AND DIE STORAGE ACCESS ROADS
APPROXIMATE FENCE LOCATION
SURFACE RUNOFF FLOW DIRECTION
STORM WATER DISCHARGE STRUCTURE
SITE LAYOUT
RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN
15388/50136.002
JUNE 2013
O'BRIEN & GERE
ENGINEERS, INC.

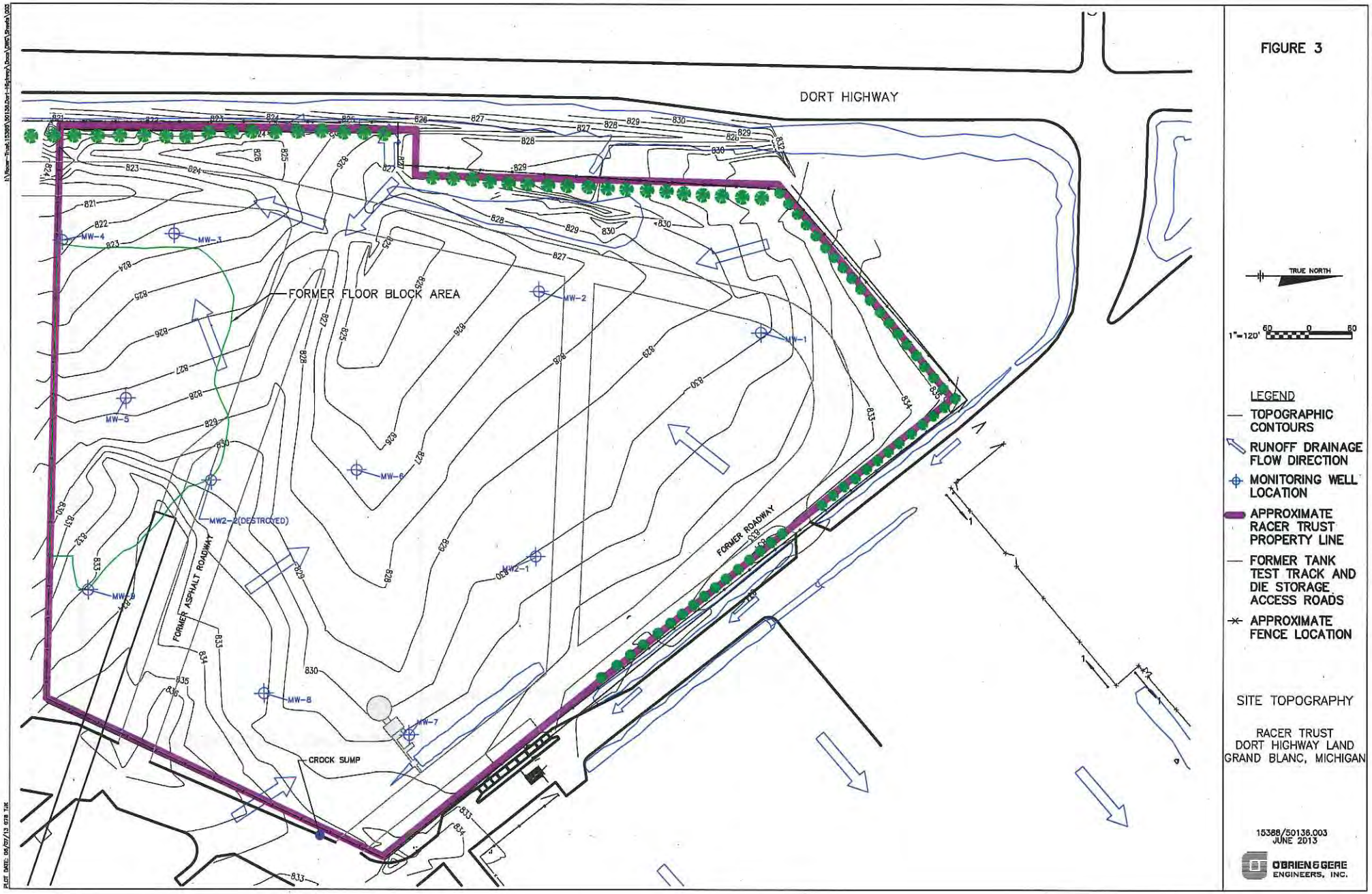


FIGURE 3

TRUE NORTH

1"=120' 60 0 60

LEGEND

- TOPOGRAPHIC CONTOURS
- RUNOFF DRAINAGE FLOW DIRECTION
- MONITORING WELL LOCATION
- APPROXIMATE RACER TRUST PROPERTY LINE
- FORMER TANK TEST TRACK AND DIE STORAGE ACCESS ROADS
- APPROXIMATE FENCE LOCATION

SITE TOPOGRAPHY

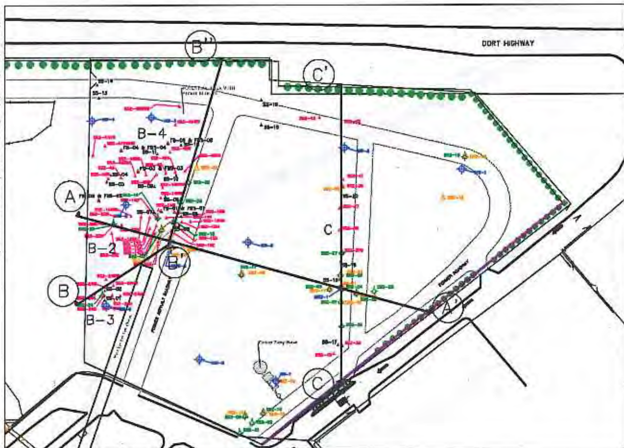
RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

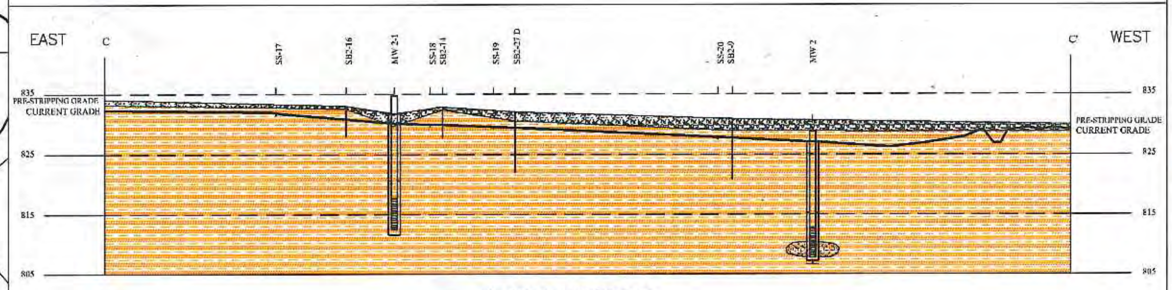
15388/50136.003
JUNE 2013

O'BRIEN & GERE ENGINEERS, INC.

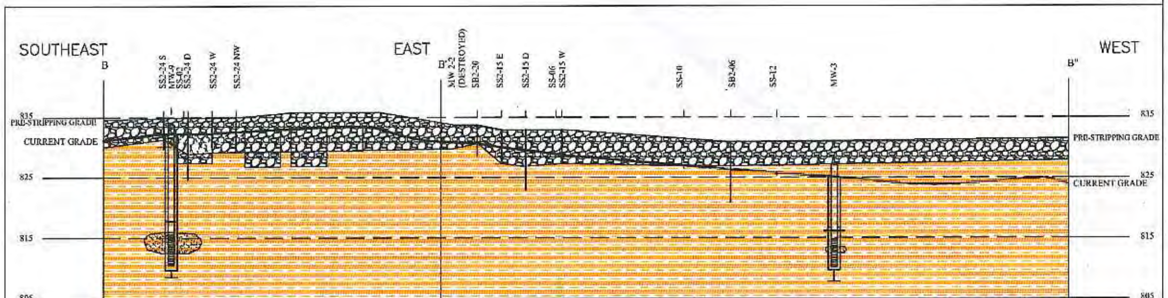
PLOT DATE: 06/07/13 GTB TJK

FIGURE 4

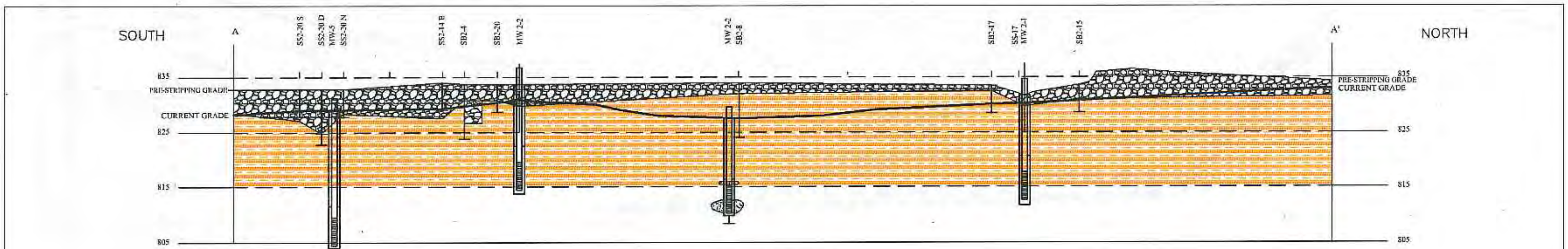




CROSS SECTION C-C'



CROSS SECTION B-B'-B''



CROSS SECTION A-A'

LEGEND

- FILL SOIL
- CLAY
- CROSS SECTION
- SAND SEAM

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

GEOLOGIC CROSS SECTIONS

1"=10' — 10 0 10 VERTICLE SCALE

1"=50' — 50 0 50 HORIZONTAL SCALE

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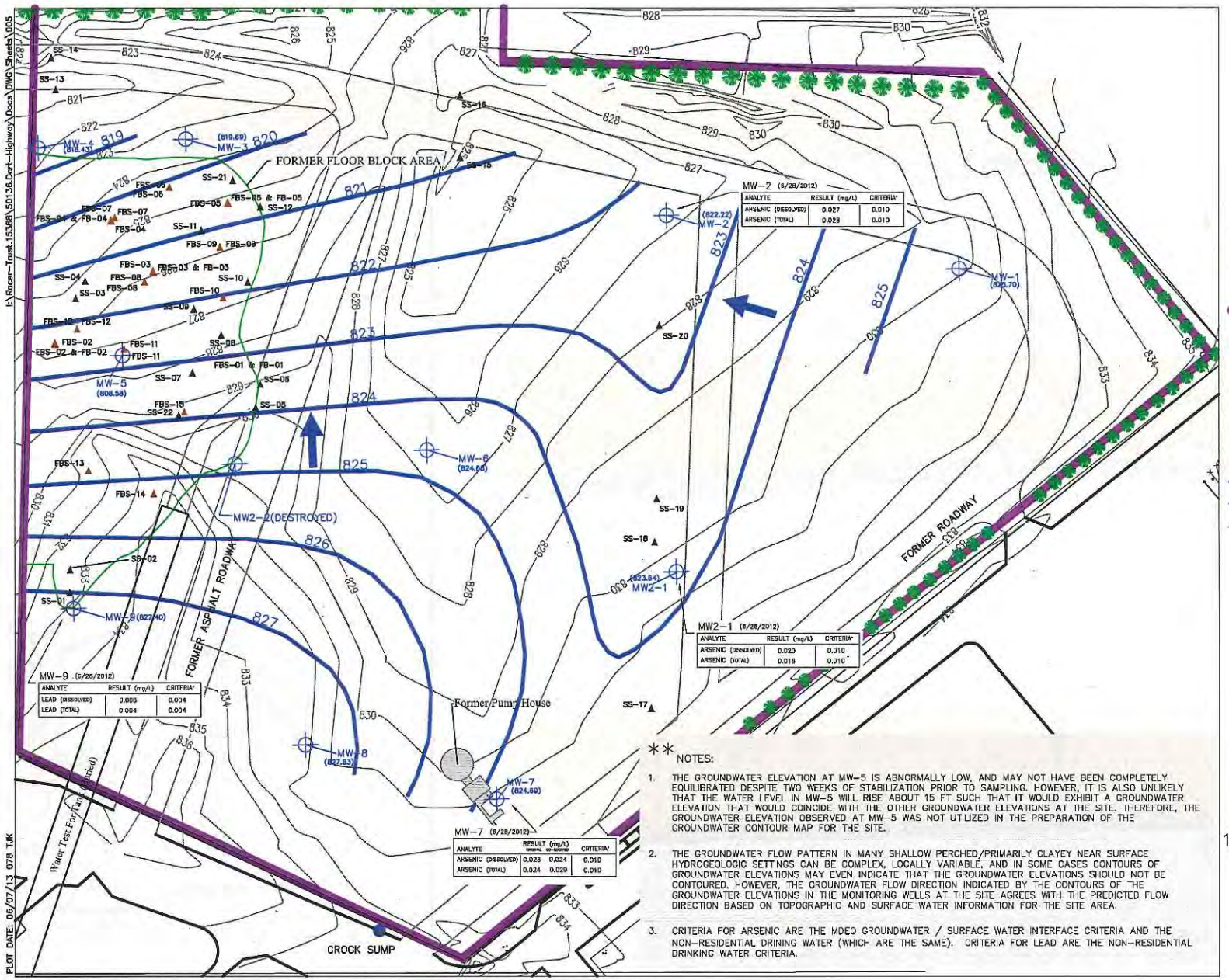

FIGURE 5

TRUE NORTH

LEGEND

- 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
- GROUND WATER CONTOUR
- GROUND WATER FLOW
- TOPOGRAPHIC CONTOURS

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

GROUNDWATER CONTOUR MAP (JUNE 27, 2012) WITH EXCEEDANCES

1"=200' 200 0 200

15388/50136.005
JUNE 2013

O'BRIEN & GERE ENGINEERS INC.

** NOTES:

1. THE GROUNDWATER ELEVATION AT MW-5 IS ABNORMALLY LOW, AND MAY NOT HAVE BEEN COMPLETELY EQUILIBRATED DESPITE TWO WEEKS OF STABILIZATION PRIOR TO SAMPLING. HOWEVER, IT IS ALSO UNLIKELY THAT THE WATER LEVEL IN MW-5 WILL RISE ABOUT 15 FT SUCH THAT IT WOULD EXHIBIT A GROUNDWATER ELEVATION THAT WOULD COINCIDE WITH THE OTHER GROUNDWATER ELEVATIONS AT THE SITE. THEREFORE, THE GROUNDWATER ELEVATION OBSERVED AT MW-5 WAS NOT UTILIZED IN THE PREPARATION OF THE GROUNDWATER CONTOUR MAP FOR THE SITE.
2. THE GROUNDWATER FLOW PATTERN IN MANY SHALLOW PERCHED/PRIMARILY CLAYEY NEAR SURFACE HYDROGEOLOGIC SETTINGS CAN BE COMPLEX, LOCALLY VARIABLE, AND IN SOME CASES CONTOURS OF GROUNDWATER ELEVATIONS MAY EVEN INDICATE THAT THE GROUNDWATER ELEVATIONS SHOULD NOT BE CONTOURED. HOWEVER, THE GROUNDWATER FLOW DIRECTION INDICATED BY THE CONTOURS OF THE GROUNDWATER ELEVATIONS IN THE MONITORING WELLS AT THE SITE AGREES WITH THE PREDICTED FLOW DIRECTION BASED ON TOPOGRAPHIC AND SURFACE WATER INFORMATION FOR THE SITE AREA.
3. CRITERIA FOR ARSENIC ARE THE MDEQ GROUNDWATER / SURFACE WATER INTERFACE CRITERIA AND THE NON-RESIDENTIAL DRINING WATER (WHICH ARE THE SAME). CRITERIA FOR LEAD ARE THE NON-RESIDENTIAL DRINKING WATER CRITERIA.

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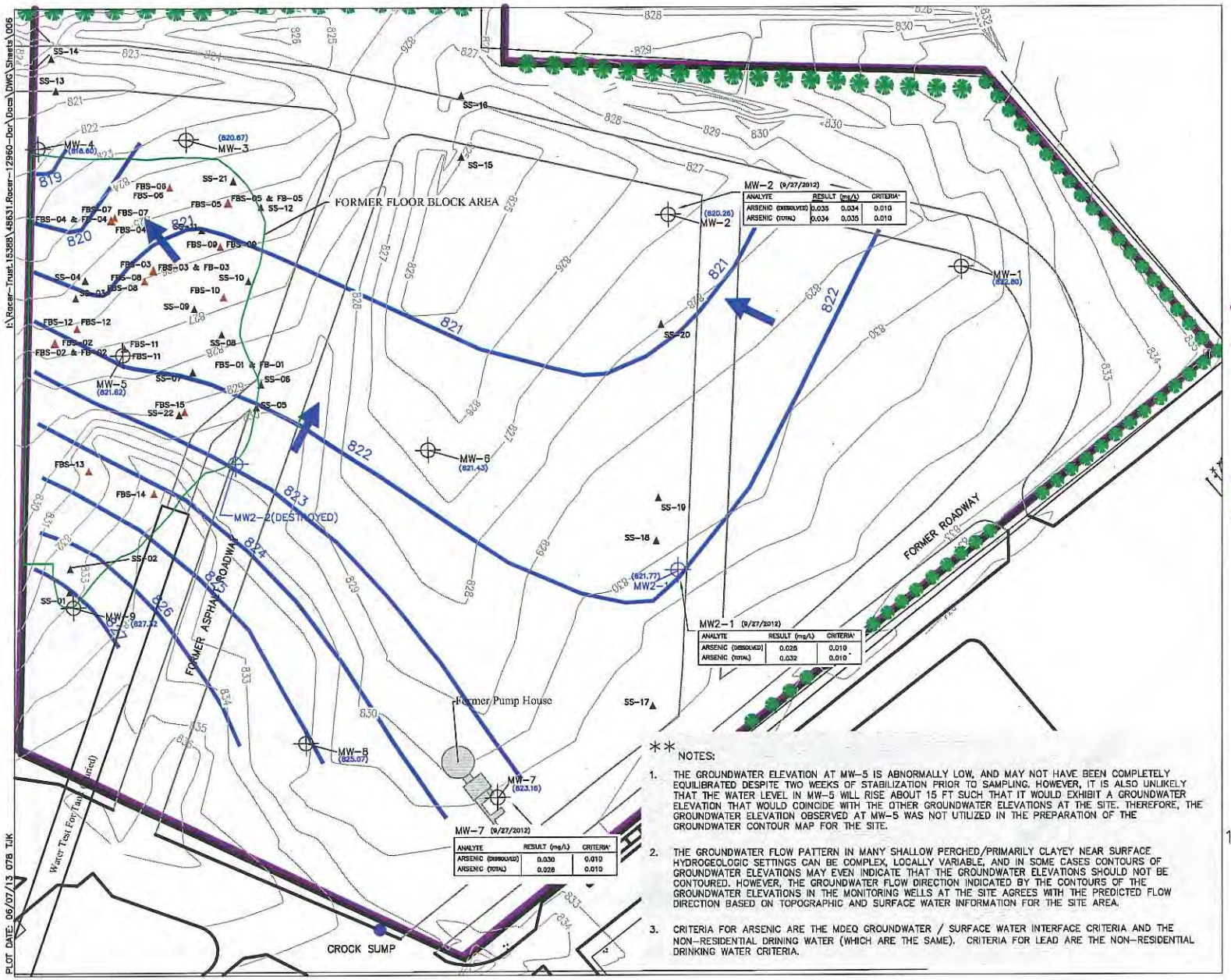

FIGURE 6

TRUE NORTH

LEGEND

- 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
- GROUND WATER CONTOUR
- GROUND WATER FLOW
- TOPOGRAPHIC CONTOURS

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

GROUNDWATER CONTOUR MAP (SEPT. 27, 2012) WITH EXCEEDANCES

1"=200' 200 0 200

15388/50136.006
JUNE 2013

O'BRIEN & GERE ENGINEERS INC.

** NOTES:

1. THE GROUNDWATER ELEVATION AT MW-5 IS ABNORMALLY LOW, AND MAY NOT HAVE BEEN COMPLETELY EQUILIBRATED DESPITE TWO WEEKS OF STABILIZATION PRIOR TO SAMPLING. HOWEVER, IT IS ALSO UNLIKELY THAT THE WATER LEVEL IN MW-5 WILL RISE ABOUT 15 FT SUCH THAT IT WOULD EXHIBIT A GROUNDWATER ELEVATION THAT WOULD COINCIDE WITH THE OTHER GROUNDWATER ELEVATIONS AT THE SITE. THEREFORE, THE GROUNDWATER ELEVATION OBSERVED AT MW-5 WAS NOT UTILIZED IN THE PREPARATION OF THE GROUNDWATER CONTOUR MAP FOR THE SITE.
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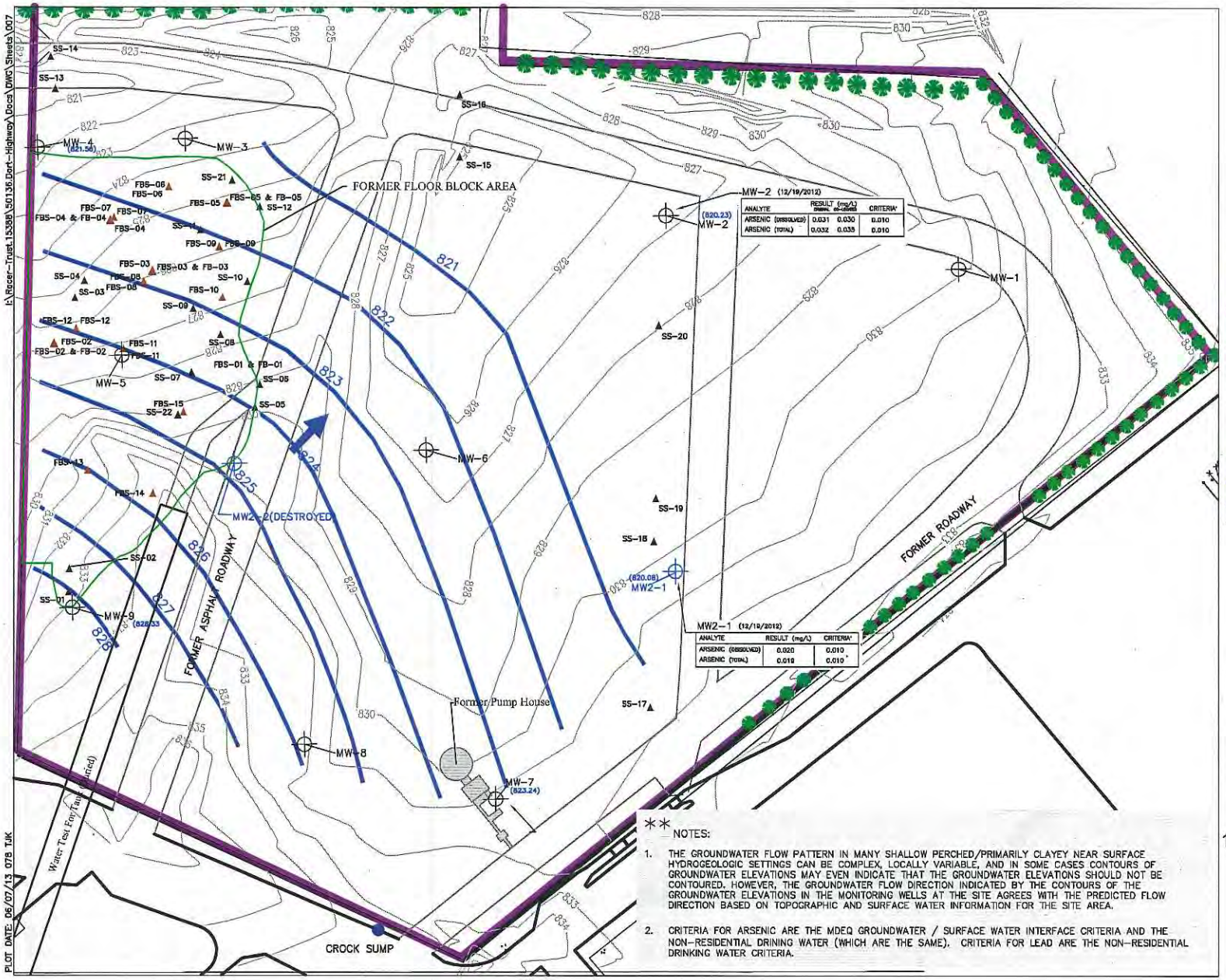

** NOTES:

1. THE GROUNDWATER FLOW PATTERN IN MANY SHALLOW PERCHED/PRIMARILY CLAYEY NEAR SURFACE HYDROGEOLOGIC SETTINGS CAN BE COMPLEX, LOCALLY VARIABLE, AND IN SOME CASES CONTOURS OF GROUNDWATER ELEVATIONS MAY EVEN INDICATE THAT THE GROUNDWATER ELEVATIONS SHOULD NOT BE CONTOURED. HOWEVER, THE GROUNDWATER FLOW DIRECTION INDICATED BY THE CONTOURS OF THE GROUNDWATER ELEVATIONS IN THE MONITORING WELLS AT THE SITE AGREES WITH THE PREDICTED FLOW DIRECTION BASED ON TOPOGRAPHIC AND SURFACE WATER INFORMATION FOR THE SITE AREA.

2. CRITERIA FOR ARSENIC ARE THE MDEQ GROUNDWATER / SURFACE WATER INTERFACE CRITERIA AND THE NON-RESIDENTIAL DRINING WATER (WHICH ARE THE SAME). CRITERIA FOR LEAD ARE THE NON-RESIDENTIAL DRINKING WATER CRITERIA.

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FIGURE 7

TRUE NORTH

LEGEND

- MONITORING WELL LOCATION
- PHASE II ESA 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
- GROUND WATER CONTOUR
- GROUND WATER FLOW
- TOPOGRAPHIC CONTOURS

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

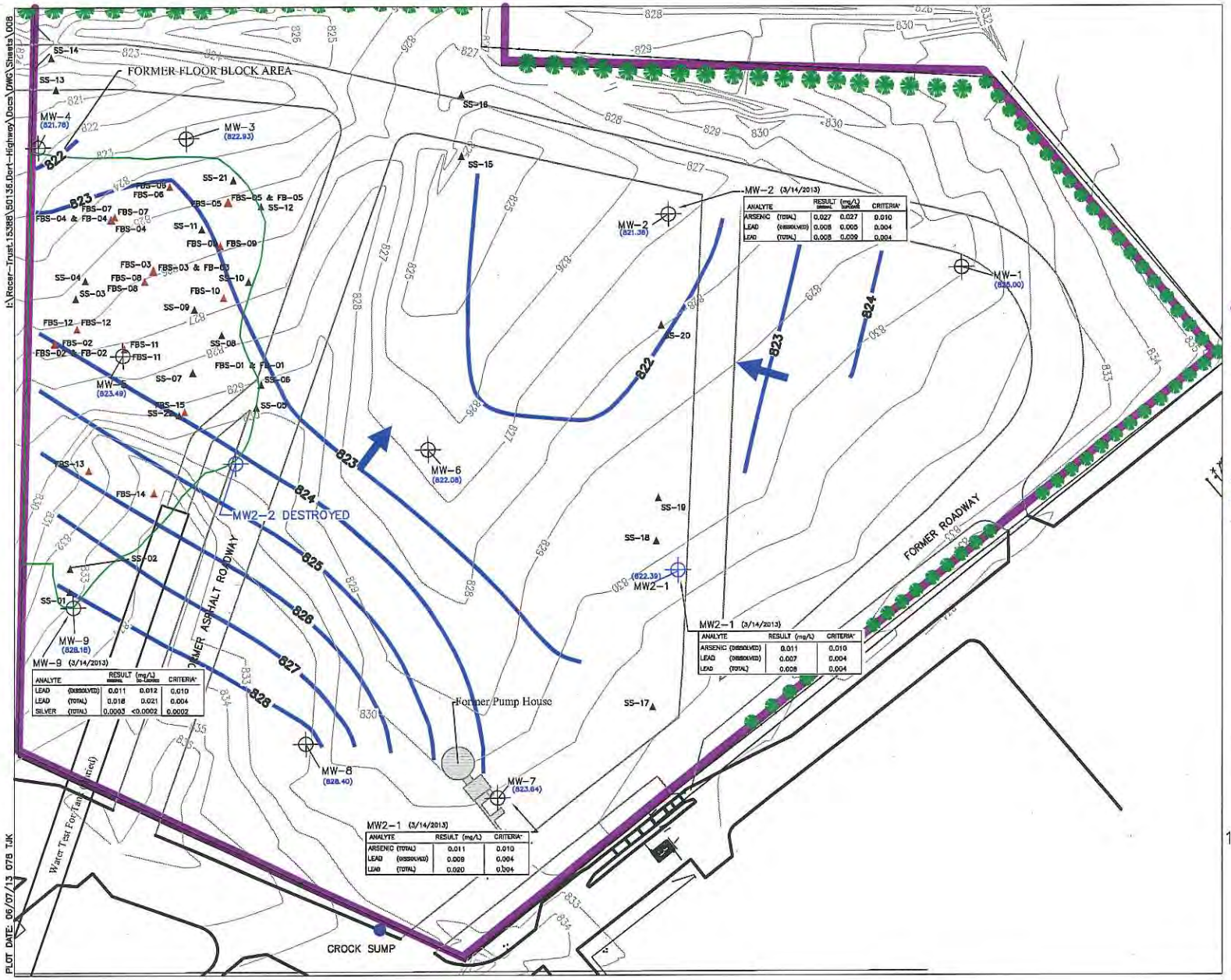
GROUNDWATER CONTOUR MAP (DEC. 19, 2012) WITH EXCEEDANCES

1"=200' 200 0 200

15388/50136.007
JUNE 2013

OBRIEN & GERE ENGINEERS INC.

FIGURE 8



TRUE NORTH

LEGEND

- MONITORING WELL LOCATION
- PHASE II ESA 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
- GROUND WATER CONTOUR
- GROUND WATER FLOW
- TOPOGRAPHIC CONTOURS

RACER TRUST
DORT HIGHWAY LAND
GRAND BLANC, MICHIGAN

GROUNDWATER CONTOUR MAP (MARCH 14, 2013) WITH EXCEEDANCES

1"=200' 200 0 200

15388/50136.008
JUNE 2013

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