



**CONESTOGA-ROVERS
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MEMORANDUM

To: Peter Ramanauskas/EPA
Cc: Dave Favero/RACER; Gregory Rudloff/EPA
FROM: Thomas Kinney/MC/ds/32 *TK*
DATE: January 13, 2015
REF. NO.: 017322
RE: **Supplemental Sampling and Analysis Plan
PCC-Validation
Pontiac, Michigan**

1.0 Introduction

Conestoga-Rovers & Associates (CRA) is providing this memorandum on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust to update the current sampling and analysis plan (SAP) based on a web-conference meeting on January 6, 2015. This updated SAP will provide details on soil boring installation, monitoring well installation, monitoring well development and supplements the SAP submitted to the U.S. EPA on July 25, 2014. The scope for the July 25, 2014 SAP was discussed and approved in a meeting with the U.S. EPA at CRA's office on July 11, 2014. This supplemental SAP adds additional parameters to the July 25, 2014 SAP as requested by the U.S. EPA during the January 6, 2015 meeting. Additional parameters include specific metal analysis of groundwater samples collected from select monitoring wells located along the western portion of the Site and groundwater samples from the proposed monitoring well near MW74-08 will be analyzed for volatile organic compounds (VOCs).

The decision to install a deeper monitoring well (MW74D-15) near MW74-08 was discussed during the web-conference meeting on January 6, 2015 and was determined adequate to verify the vertical delineation of dissolved phase VOCs in the southern VOC plume.

The Scope of Work below includes proposed boring and well installation details, the supplemental SAP and rationale for sampling.

2.0 Boring and Well Installation, Development and Sampling

Boring Installation

Near MW74-08, a Rotosonic drill rig will be utilized to install one soil boring to a maximum of 50 feet below ground surface (bgs) or approximately 910 feet above mean sea level (AMSL). See attached Figures 1 and 2 for location and proposed depth of the soil boring near MW74-08.

Using Rotasonic drilling, continuous soil samples will be collected. Soils will be described using the Unified Soil Classification System and field screened using a photoionization detector (PID), visual and/or incidental olfactory evidence. No soil sampling for laboratory analysis is planned.

Monitoring Well Installation, Development and Sampling

Near MW74-08, a monitoring well (MW74D-15) will be installed in the boring described above. The monitoring well will be set at a depth greater than 20 feet below ground surface (total depth drilled for MW74-08) within the upper 5 feet of the saturated interval of the first sand unit encountered exceeding approximately 10 feet in thickness. It is anticipated the monitoring well will be set at a depth of approximately 40 to 45 feet bgs or approximately 915 to 920 feet AMSL. See attached Figures 2 and 3 for proposed location and anticipated depth of the planned monitoring well.

The proposed monitoring well (MW74D-15) will be constructed using a 2-inch diameter, 5-foot long, machine slotted 0.010-inch, polyvinyl chloride (PVC) well screen threaded to a 2-inch diameter PVC riser extending to just below ground surface. A filter sand pack will be installed adjacent to the screen in the annular space and extend approximately 2 feet below (if necessary) and 2 feet above the top of the screened interval. A sodium bentonite seal will be placed from the bottom of the boring to the bottom of the sand pack (if necessary) and a sodium bentonite seal will be placed above the sand pack to approximately 1 foot below ground surface (bgs). A flush-mount protective casing will be set into concrete to complete the well. Upon completion, the monitoring well will be developed to a generally silt free condition.

A minimum of 2 weeks after development and following methods described in the approved SAP/QAPP (May 2012), one groundwater sample will be collected from the newly installed monitoring well (MW74D-15). If the piezometric water level in the well is greater than 20 feet bgs, a bladder pump will be utilized to collect the groundwater sample instead of the standard peristaltic pump. The groundwater sample will be analyzed for total compound list (TCL) VOCs. Specific analysis is presented in Table 1.

3.0 Supplemental Sampling and Analysis Plan and Rationale

Monitoring Wells to be Sampled/Sampling and Analysis Plan (SAP) - Annual Sampling (to be completed in July 2015)

To continue monitoring the VOC and LNAPL areas, 25 monitoring wells will be monitored following methods described in the approved SAP/QAPP (where appropriate). Analyses of specific metals are added to select monitoring wells along the western border of the Site. Several of the monitoring wells are utilized for multiple reasons and are repeated in the bullets below. Monitoring wells to be retained for sampling and the parameters to be analyzed for each well are identified on Table 1. Monitoring well locations and identification as to whether the well will be retained for monitoring or abandoned are shown on Figure 3.

- Monitoring wells (MW2-07, MW79-12, MW80-12, MW81-12, MW92S/I-13 and MW93I-13) are located in the northwest corner of the Site or northwest of the Site. The MWs will be retained to confirm off-Site impacts of VOCs are stable.
- Monitoring wells (MW74-08 and MW91-12) are located in the southern half of the Site and will be retained to monitor VOC concentrations within the southern VOC plume.
- Planned monitoring well (MW74D-15) will be located approximately 10 feet west of MW74-08 and will be retained to monitor the deep aquifer in the area of the southern VOC plume.
- Monitoring wells (MW33-07, MW38-07, MW48-07, MW68-08, MW82-12, MW87-12, MW88-12 and MW90-12) are located in the southern half of the Site and will be retained to document the southern VOC plume is stable.
- Monitoring wells (MW10-07, MW21-07, MW33-07, MW38-07, MW82-12 and MW83-12) are located along the western property boundary of the Site and will be retained to document impacted groundwater is stable.
- Monitoring wells (MW69-08, MW84-12, and MW86-12) are located within the LNAPL area located in the northern portion of Former Plant 3. The MWs will be retained to monitor LNAPL levels.
- Monitoring wells (MW68-08, MW74-08, MW85-12, MW87-12 and MW88-12) are located around the LNAPL area located in the northern portion of Former Plant 3. The MWs will be retained to document the LNAPL is stable. The wells are also being monitored to assess the southern VOC plume as described previously.

4.0 Proposed Schedule

Task:

Monitoring Well Installation, Development and Sampling
Data Report Submittal
Annual Groundwater Monitoring
Report Submittal

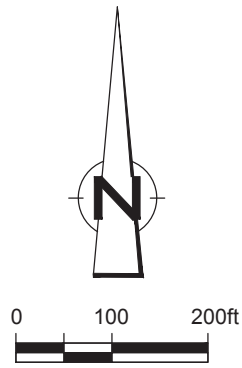
Approximate Timeline:

February/March 2015
May 2015
July 2015
October 2015

Encl: Figure 1 – Site Map with Cross-Section Transect Location
Figure 2 – Cross-Section A-A'
Figure 3 – Proposed Wells for Monitoring and/or Abandonment
Table 1 – Monitoring Wells to be Sampled, Parameters and Rationale for Continued Use



No	Revision	Date	Initial



- LEGEND**
- MW74D-14 PROPOSED MONITORING WELL LOCATION
 - TP1-07 COMPLETED TEST PIT LOCATION
 - MW28-07 COMPLETED MONITORING WELL LOCATION
 - TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
 - BH8-07 COMPLETED SOIL BORING LOCATION
 - HIGHLIGHTED WELLS TO BE SAMPLED
 - - - APPROXIMATE SITE BOUNDARY
 - EXISTING STRUCTURE
 - FORMER SITE STRUCTURE
 - M.H. MANHOLE
 - C.B. CATCH BASIN
 - A — A' TRANSECT LINE

SCALE VERIFICATION

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



Approved

DRAWING STATUS

Status	Date	Initial

SITE MAP
WITH CROSS-SECTION TRANSECT LOCATION
PCC-VALIDATION
PONTIAC, MICHIGAN



Source Reference:			
Project Manager:	Reviewed By:	Date:	
T.K.	M.C.	JANUARY 2015	
Scale:	Project N°:	Report N°:	Drawing N°:
1:200	017322-T02	MEMO032	1

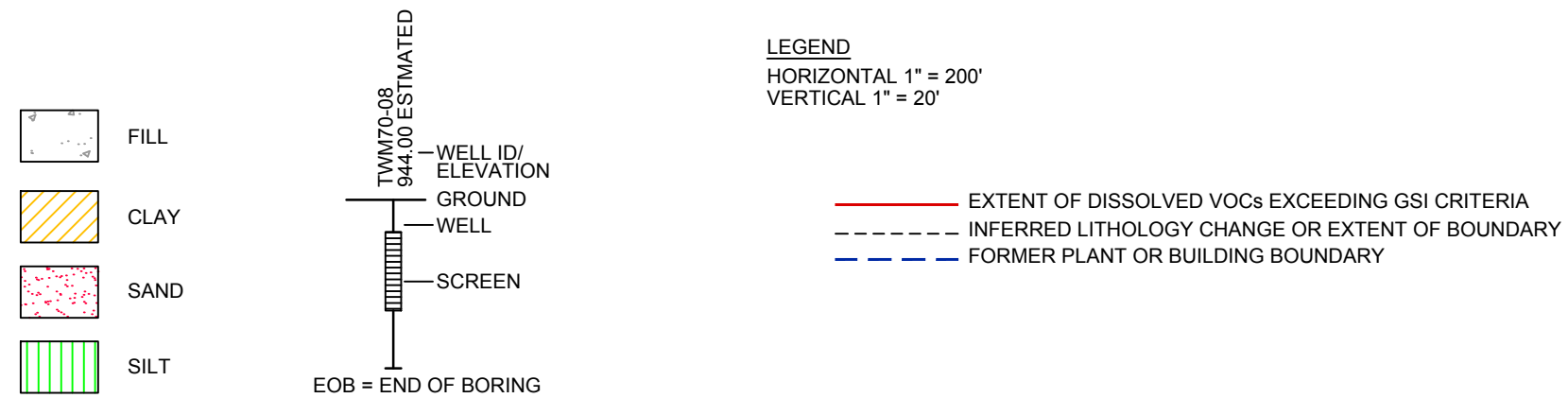
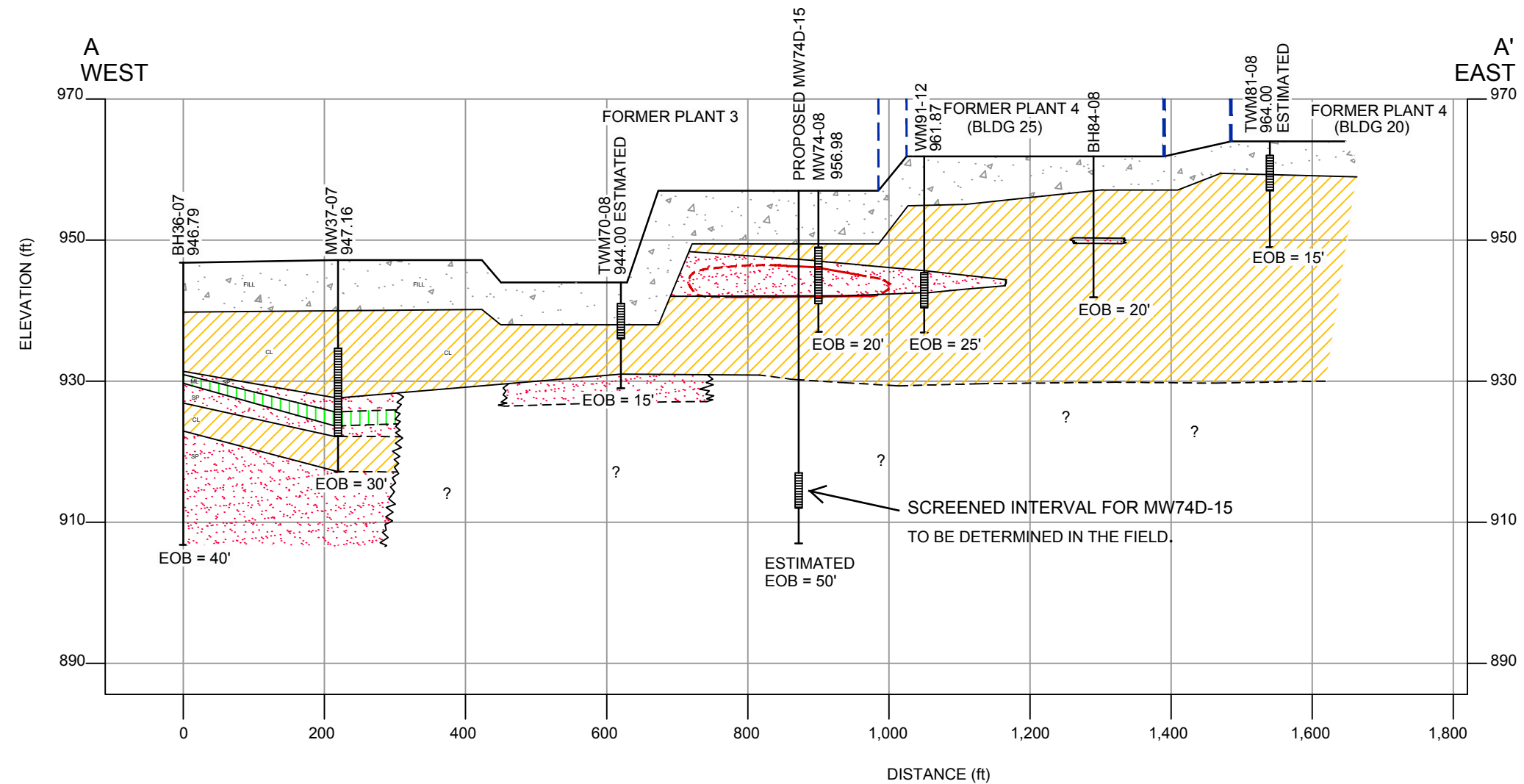


figure 2

CROSS-SECTION A-A'
PCC-VALIDATION
Pontiac, Michigan



TABLE 1

**MONITORING WELLS TO BE SAMPLED
PCC VALIDATION CENTER
PONTIAC, MICHIGAN**

Well ID	Date Installed	Screened		Sampling Parameters	Rationale for Continuing Use
		Top (ft bgs)	Bottom (ft bgs)		
MW2-07	10/12/2007	12	25	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.
MW10-07	10/15/2007	3.5	13.5	TCL VOCs, aluminum, lead, and vanadium	Monitoring well will monitor the western property boundary to confirm VOCs and/or select metals are stable.
MW21-07	12/4/2007	10.5	20.5	TCL VOCs, aluminum, lead, and vanadium	Monitoring well will monitor the western property boundary to confirm VOCs and/or select metals are stable.
MW33-07	12/4/2007	10.5	20.5	TCL VOCs, aluminum, lead, and vanadium	Delineation well to confirm VOCs and/or select metals in the southern portion of the Site are stable.
MW38-07	12/4/2007	9.5	14.5	TCL VOCs, aluminum, lead, and vanadium	Delineation well to confirm VOCs and/or select metals in the southern portion of the Site are stable.
MW48-07	10/9/2007	5	15	TCL VOCs	Up-gradient VOC delineation Well.
MW68-08	3/12/2008	9	19	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable. Also, will confirm LNAPL in the southern portion of the Site is stable.
MW69-08	3/13/2008	10	20	None (LNAPL gauging only)	Measure LNAPL thickness (if LNAPL present)
MW74-08	3/14/2008	8	16	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable. Also, will confirm LNAPL in the southern portion of the Site is stable.
MW74D-08	NA	NA	NA	TCL VOCs	Vertical delineation well to confirm VOCs in the southern portion of the Site are stable.
MW79-12	8/22/2012	25	30	TCL VOCs	Up-gradient VOC delineation Well.
MW80-12	8/28/2012	7	12	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.
MW81-12	8/28/2012	14	19	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.
MW82-12	8/23/2012	2.5	7.5	TCL VOCs, aluminum, lead, and vanadium	Delineation well to confirm VOCs and select metals in the southern portion of the Site are stable. Also, will monitor the storm sewer and GSI at the property boundary.
MW83-12	8/23/2012	6	11	TCL VOCs, aluminum, lead, and vanadium	Monitoring well will monitor the storm sewer and GSI at the property boundary. And confirm VOCs and/or select metals are stable.
MW84-12	8/28/2012	5	20	None (LNAPL gauging only)	Measure LNAPL thickness (if LNAPL present)
MW85-12	8/23/2012	5	10	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable. Also, will confirm LNAPL in the southern portion of the Site is stable.
MW86-12	8/24/2012	8	18	None (LNAPL gauging only)	Measure LNAPL thickness (if LNAPL present)
MW87-12	8/23/2012	4	9	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable. Also, will confirm LNAPL in the southern portion of the Site is stable.
MW88-12	8/20/2012	15.5	20.5	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable. Also, will confirm LNAPL in the southern portion of the Site is stable.
MW90-12	12/3/2012	10	15	TCL VOCs	Delineation well to confirm VOCs in the southern portion of the Site are stable.
MW91-12	12/3/2012	16.5	21.5	TCL VOCs	Confirm VOC concentrations in southern portion of the Site
MW92S-13	1/24/2013	4.8	9.8	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.
MW92I-13	1/24/2013	12	17	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.
MW93I-13	7/26/2013	12	17	TCL VOCs	Delineation well to confirm off-Site VOCs northwest of the Site are stable.

Notes:

ft AMSL - Feet Above Mean Sea Level.

ft bgs - Feet below ground surface.

MW - Monitoring well.