CONESTOGA-ROVERS & ASSOCIATES

651 Colby Drive, Waterloo, Ontario, Canada N2V 1C2
Telephone: (519) 884-0510 Fax: (519) 884-0525
www.CRAworld.com

MEMORANDUM

TO:	Jean Caufield, GM	REF. NO.:	007097-10
FROM:	Sylvie Eastman, P. Eng., P.E./sp/48 Beth Landale BL	DATE:	April 21, 2009
CC:	Francis Ramacciotti, ENVIRON		
RE:	**2009 MDEQ Part 213 Groundwater Investigation Duco Stores Supplemental Work Plan Open Releases: C-0235-90, C-0776-90, and C-1831-91 Centerpoint Business Campus Pontiac, Michigan**		

Conestoga-Rovers & Associates, Inc. (CRA) has prepared this work plan to summarize the additional delineation and sampling activities to be conducted to close the Leaking Underground Storage Tank (LUST) (Area of Interest (AOI) #50 – DUCO Stores) at the General Motors Corporation (GM) Centerpoint Business Campus located in Pontiac, Michigan (Site). The purpose of this investigation is to complete delineation of groundwater impacts required for preparing a Final Assessment Report (FAR) for the open releases (C-0235-90, C-0776-90, and C-1831-91) listed on the Michigan Department of Environmental Quality (MDEQ) LUST list. The investigation will be completed to comply with the requirements of the Michigan Natural Resources and Environmental Protection Act, Public Act 451 of 1994, Part 213 (Part 213). Part 213 requires that the soil, vapor, and groundwater impacts from a gasoline release be delineated per Act 451 Part 201 Generic Cleanup Criteria (Part 201). Therefore, Part 201 generic cleanup criteria will be used as the screening criteria for this investigation.

1.0 BACKGROUND

The DUCO Stores Underground Storage Tank (UST) Area historically consisted of eight 12,000-gallon USTs that were installed at the Site in 1927. A Site plan prepared by the Factory Insurance Association in December 1950 indicated the contents of the eight USTs as follows: fuel oil (3), gasoline (3), grease (1), and solvent (1). Based on historical documents, previous investigation results, and conversations with GM, it is very unlikely that the solvents stored historically in the DUCO stores tanks were chlorinated. When the USTs were removed in 1991, the contents of the USTs were identified as follows: gasoline (2), diesel fuel (3), RR end lube (1), glycol (1), and axle oil (1). This information indicates that the contents of the USTs were changed at least once over the lifetime of the DUCO Stores UST area.

Surrounding features of the UST area historically included a hazardous materials storage pad to the west; a concrete retaining wall, a 9,500-gallon aboveground glycol storage tank, and Building 34 to the north; a series of paint rooms connected to Building 34 located to the northeast; a concrete retaining wall and two 500-gallon aboveground glycol mix tanks located to the east; and Building 21 to the south.

In December 1989, approximately 500 gallons of gasoline were released to the environment due to overfilling of one of the gasoline USTs in the DUCO Stores UST area.

On February 2, 1990, gasoline was identified to be infiltrating into a sanitary sewer line located to the west of the DUCO Stores UST area. This release was identified as MDEQ Release Number C-0235-90. Following this instance, the sewer was plugged and the sewer contents removed, as necessary, by vacuum tanker truck.

In May 1990, a second gasoline release to a storm sewer in the DUCO stores area was discovered. This release was reported and assigned MDEQ Release Number C-0776-90. In response to this release, GM retained the Northeast Research Institute, Inc. (NERI) of Lakewood, Colorado to perform a soil gas survey of the UST area and adjacent hazardous materials storage pad. NERI installed 53 soil gas probes on June 5, 1990 and June 6, 1990. The results of the soil gas survey indicated the presence of aromatic hydrocarbons, cycloalkane/alkene hydrocarbons, oil character hydrocarbons, toluene, tetrachloroethylene (PCE) and trichloroethene (TCE). The purpose of this study was to characterize the vapors in the subsurface and use them to map the areal distribution of impacts. The study concluded that the TCE and PCE detected near the southeast corner of the hazardous material storage area were likely due to activities associated with the storage pad.

In August 1991, all eight USTs in the DUCO Stores UST area were excavated and removed by Maecorp, Inc. (Maecorp). Following removal of the USTs, diesel fuel was observed seeping into the excavation. This release was reported and assigned MDEQ Release Number C-1831-91. Approximately 100 gallons of diesel fuel were recovered before seepage ceased.

2.0 PREVIOUS INVESTIGATIONS

A 45-Day report was prepared and submitted to the Michigan Department of Natural Resources (MDNR) by Maecorp on August 14, 1991. M. L. Chartier conducted on-site treatment of approximately 3,000 cubic yards of soil via low temperature thermal desorption, which was used as a backfill at Building 29 or stockpiled near Building 29. In January 1994, CRA was retained to define the nature and extent of any potential residual soil contamination left in the DUCO Stores UST area. The extent of these excavation and investigation activities conducted by Maecorp, M. L. Chartier, and CRA and the historic sample locations associated with the investigations in the DUCO Stores UST area are presented in DUCO Stores report (CRA, May 1994). A summary of the recent investigations is presented below.

2007 Investigation: Based on historical work performed, there may be residual contamination present in groundwater beneath Building 34 and outside the former tank cavity. Four monitoring wells (MW34-01 through MW34-04) were installed during November 2007 to assess groundwater quality south and west of Building 34 and the UST area. The soil borings were screened with a photoionization detector (PID) with an 11.7eV lamp, and examined for visual and olfactory evidence of impacts. Where non-aqueous phase liquid (NAPL) was suspected to be present, an oil screen soil (Sudan IV jar test) test was performed. A

Sudan IV jar test performed on the 6-8 foot interval at MW34-04, where an odor was encountered, indicated the presence of NAPL. A soil sample was collected from this interval as well as the 0-2 foot interval and submitted to the lab for analysis of Target Contaminant List (TCL) Volatile Organic Compounds (VOCs), polynuclear aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCBs), and total lead. There were no detected concentrations exceeding the Part 201 screening criteria reported at either of the intervals. In addition, no product was detected in the monitoring well screened from 4 to19 ft bgs. Soil samples were not submitted for chemical analyses from MW34-01, MW34-02 or MW34-03 since no evidence of impact was observed at these locations. Groundwater samples were collected from these locations and were analyzed for lead, VOCs, and PAHs. No groundwater constituents were detected at concentrations above the Part 201 screening criteria from these locations.

2008 Investigation: When access to the building interior could be gained, a total of 12 soil borings were advanced beneath the building to a depth of approximately 20 feet below ground surface (bgs) using the Geoprobe direct push method. Soil samples were collected from locations with the highest evidence of impacts and were analyzed for VOCs, PAHs, glycol, and metals. Detected concentrations of arsenic and selenium exceeded the Part 201 screening criteria at SB-5-08 and SB-6-08. Concentrations of iron exceeded the Part 201 screening criteria at SB-5-08. In addition, the concentrations of three VOCs (1,1,1-trichloroethane, 1,1-dichloroethene, and TCE) exceeded the Part 201 screening criteria at SB-7-08.

During the 2008 investigation, the highest impacts were recorded just above the water table at SB-3-08 and SB-4-08. A strong odor was observed and positive results using Sudan IV jar test were identified at these locations. Borehole water samples were collected from the borehole locations to identify potential impacts to groundwater. Benzene exceeded the Part 201 screening criteria at both locations. Naphthalene and ethylbenzene exceeded the screening criteria at SB-4-08.

Tables 1 and 2 present the soil and groundwater/borehole water analytical results from the 2007 and 2008 investigations. A summary of groundwater exceedances of Part 201 Generic Cleanup Criteria is presented on Figure 1. The locations of the soil borings and monitoring wells are presented on Figure 2.

3.0 PROPOSED INVESTIGATION

Based on the recent investigations (2007 and 2008), further groundwater delineation is required to close the releases listed on the MDEQ LUST list associated with the DUCO Stores UST area. As stated above, three metals exceeded at SB-5-08 and SB-6-08 and three VOCs were detected above the Part 201 criteria in the soil samples collected in 2008 at SB-7-08. The constituents showing exceedances in soil are not constituents associated with a gasoline release per Table 1 of Recommended Parameters for Common Petroleum Products list for LUST releases which is presented in the Analytical Parameters and Methods, Sample Handling, and Preservation for Petroleum Releases Operational Memorandum dated July 12, 1998 (Op Memo 14). Therefore, no further soil delineation is required for the LUST closure. The groundwater exceedances (benzene, ethylbenzene, and naphthalene), however, are required to be delineated to close the open LUST releases since these constituents are included in Table 1 of Op Memo 14.

Three monitoring wells (MW34-05, MW34-07, and MW34-08) will be installed to delineate the exceedances detected in the borehole water samples from SB-3-08 and SB-4-08 collected during 2008 field investigation. A fourth monitoring well, MW34-06, will be installed in the source area (former location of tanks) to

determine the impacts within the area and verify that NAPL is not present per MDEQ guidelines. The proposed monitoring well locations are presented on Figure 2.

All the utilities will be checked prior to installing the monitoring wells. The boreholes will be completed to the top of the confining clay layer (approximately 25 feet bgs). The monitoring wells will be installed straddling the water table, so that the top two feet of the ten-foot screen is above the water table. Based on previous soil borings, the presence of clay beneath the building has made identifying the location of the water table difficult, and therefore longer screens may be required. The soil borings will be screened with a PID and examined for visual and olfactory evidence of impacts. Soil lithology will be documented in accordance with modified USGS classifications. Soil samples will not be collected for laboratory analysis during this investigation.

Monitoring wells will be developed and sampled with a peristaltic pump using low-flow techniques. Groundwater samples will be collected from the four new monitoring wells and three existing monitoring wells (MW34-01, MW34-03, and MW34-04) and will be submitted for analysis. Table 3 summarizes the analyses to be conducted on the groundwater samples.

All groundwater samples will be submitted under chain-of-custody protocol to Test America in North Canton, Ohio. Final results will be analyzed by a CRA chemist for quality assurance/quality control (QA/QC) purposes.

Decon fluids and soil cuttings will be containerized in 55-gallon drums and staged on Site for disposal. The locations of monitoring wells will be surveyed. This information will be used to determine the groundwater levels and to prepare the groundwater contours.

4.0 REPORT COMPLETION

The FAR will be prepared summarizing the DUCO Stores investigation activities and previous activities including excavation and thermal treatment. The FAR will be completed in accordance with the requirements of the Michigan Natural Resources and Environmental Protection Act, Public Act 451 of 1994, Part 213 (Part 213) and will be submitted to the MDEQ.

5.0 SCHEDULE

The field work described in this Work Plan will be completed once access to the area is approved which may require extensive coordination with the Site staff. The FAR will be submitted to MDEQ within four months of completing the field work.

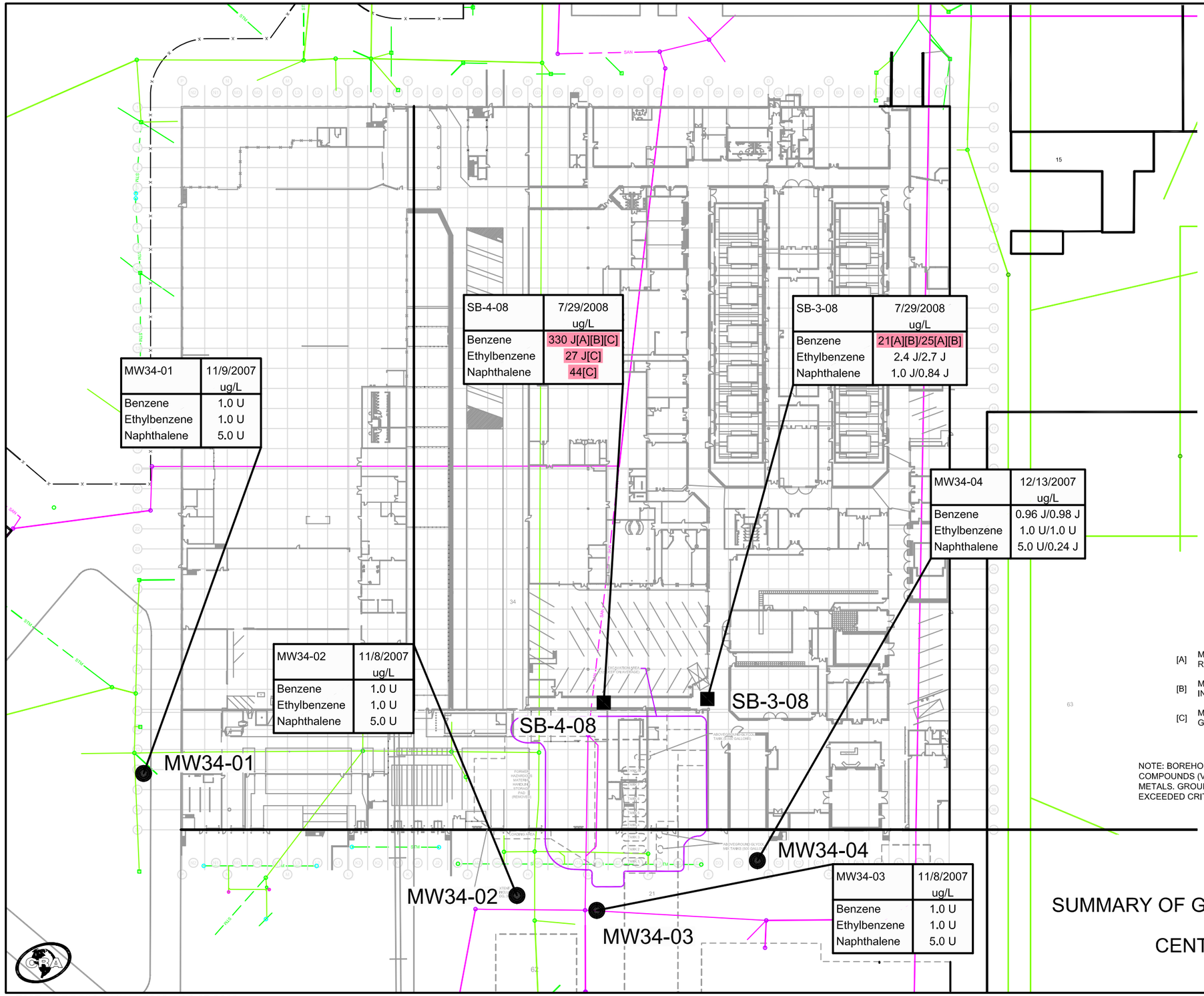
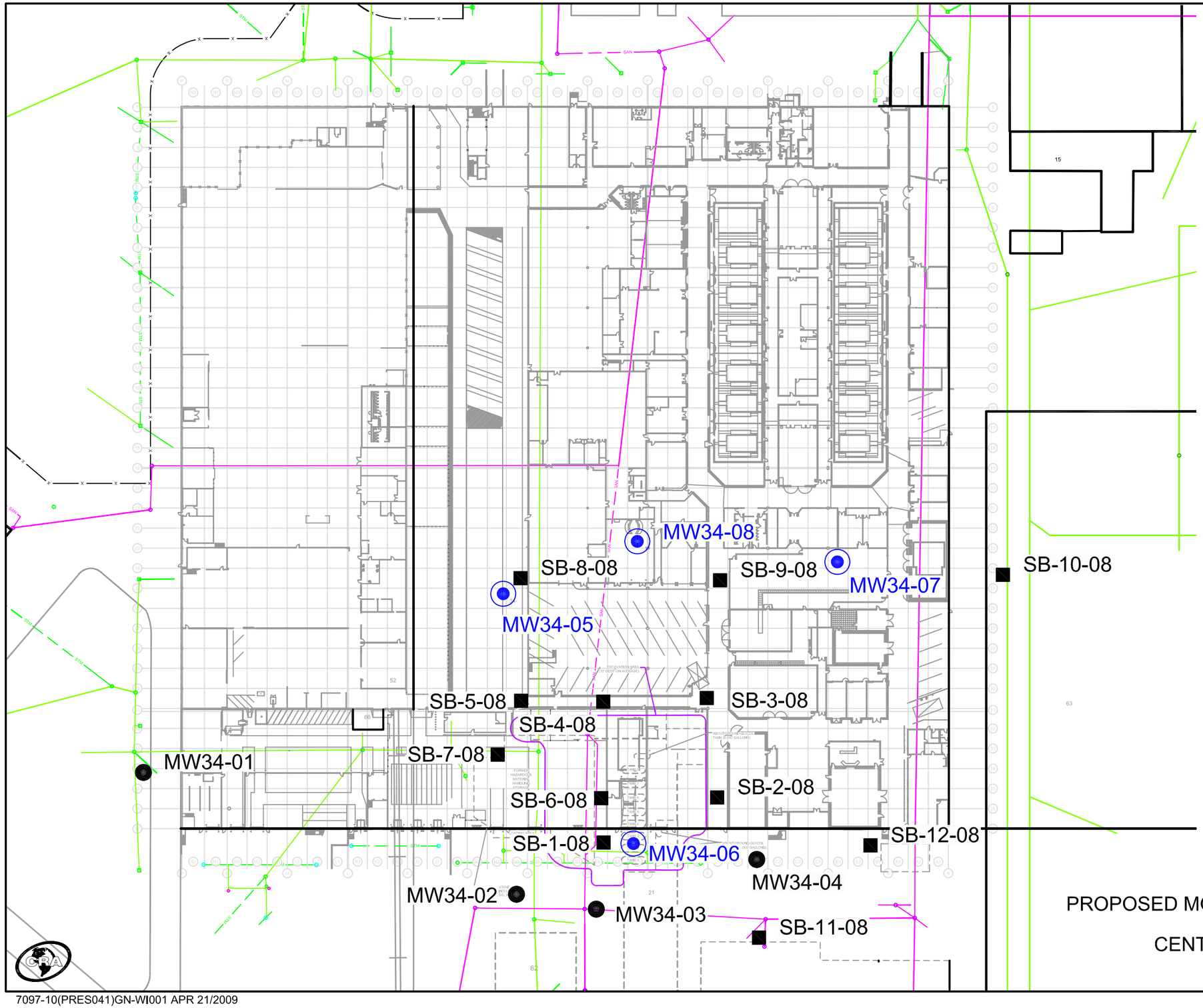


figure 1

SUMMARY OF GROUNDWATER EXCEEDANCE
AOI #50: DUCO STORES
CENTERPOINT BUSINESS CAMPUS
Pontiac, Michigan

7097-10(PRES041)GN-WI002 APR 07/2009



0 50 100ft

LEGEND

- FORMER STRUCTURE
- 1997 EXCAVATION BY CRA
- STORM SEWER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- GENERAL MANHOLE
- STORM PLUG
- STORM CATCHBASIN
- CLEANOUT
- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- PROPOSED MONITORING WELL

NOTE:

THE WATER TABLE LOCATION IS DIFFICULT TO IDENTIFY DUE TO THE PRESENCE OF CLAY BENEATH THE BUILDING, THEREFORE, A TEN-FOOT SCREEN WILL BE REQUIRED.

figure 2

PROPOSED MONITORING WELL LOCATIONS
AOI #50: DUCO STORES
CENTERPOINT BUSINESS CAMPUS
Pontiac, Michigan

7097-10(PRES041)GN-WI001 APR 21/2009

TABLE 1

SOIL ANALYTICAL RESULTS
2007 & 2008 INVESTIGATIONS
DUCO STORES UST AREA
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Location Name		*Criteria* [1]						*MW34-04*	*SB-1-08*	*SB-2-08*	*SB-3-08*	*SB-3-08*	*SB-4-08*	*SB-4-08*	*SB-5-08*	*SB-6-08*	*SB-7-08*
Sample Name		RDW_PC	IND_PC	GSI_PC	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	*SO-7097-112007-CB-001*	*S-7097-072808-EV-001*	*S-7097-072808-EV-002*	*S-7097-072808-EV-003*	*S-7097-072808-EV-004*	*S-7097-072808-EV-005*	*S-7097-072808-EV-006*	*S-7097-072808-EV-007*	*S-7097-072808-EV-008*	*S-7097-072808-EV-009*
Sample Date								*11/20/2007*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*	*7/28/2008*
Sample Depth:								*(0-2) ft bgs*	*(5-7) ft bgs*	*(7.5-9) ft bgs*	*(8-10) ft bgs*	*(10-12) ft bgs*	*(8-10) ft bgs*	*(10-12) ft bgs*	*(15-16) ft bgs*	*(7-8) ft bgs*	*(10.5-12) ft bgs*
	Units	b	c	d	e	f	g										
Metals																	
Aluminum	ug/kg	1000	1000		1000000000 D	NLV	NLV	-	1730000	2330000	2110000	2360000	4670000	2920000	4960000	2220000	1390000
Antimony	ug/kg	4300	4300	94000	49000000	NLV	NLV	-	170 UJ	180 UJ	170 UJ	170 UJ	210 J	170 J	180 UJ	180 UJ	280 J
Arsenic	ug/kg	4600	4600	70000 X	2000000	NLV	NLV	-	3700	3700	5000	5400	5500	5700	7100[abc]	4000	5900[abc]
Barium	ug/kg	1300000	1300000	G,X	1000000000 D	NLV	NLV	-	7500	8800	8300	10100	27800	13000	31200	10700	7500
Beryllium	ug/kg	51000	51000	G	1000000000 D	NLV	NLV	-	170 U	180 U	170 U	170 U	190 U	180 U	120 J	180 U	180 U
Cadmium	ug/kg	6000	6000	G,X	230000000	NLV	NLV	-	86 U	140	170	190	190	590	210	89 U	530
Chromium Total	ug/kg	30000	30000	3300	140000000	NLV	NLV	-	4300	6300	5400	5700	9700	7700	10600	4600	5400
Cobalt	ug/kg	800	2000	2000	48000000	NLV	NLV	-	2100	3400	2900	2900	5200	4900	6500	2400	2700
Copper	ug/kg	5800000	5800000	G	1000000000 D	NLV	NLV	-	4500	7600	10800	12400	11800	11800	15100	4900	11300
Iron	ug/kg	6000	6000		1000000000 D	NLV	NLV	-	4980000	6930000	6030000	7130000	11300000	7180000	13300000[abc]	5860000	5600000
Lead	ug/kg	700000	700000	G, X	ID	NLV	NLV	7700	2900	5900	5200	5300	7400	4600	6600	3100	4500
Manganese	ug/kg	1000	1000	G,X	180000000	NLV	NLV	-	123000	214000	197000	157000	314000	199000	286000	155000	122000
Mercury	ug/kg	1700	1700	100 M	47000	48000	52000	-	43 U	44 U	42 U	41 U	47 U	46 U	45 U	45 U	44 U
Nickel	ug/kg	100000	100000	G	1000000000 D	NLV	NLV	-	4600	10000	8800	9500	13700	16300	18500	5400	8000
Selenium	ug/kg	4000	4000	400	78000000	NLV	NLV	-	110 J	190	250	240	400	1800[ad]	400	120 J	460[ad]
Silver	ug/kg	4500	13000	100 M	200000000	NLV	NLV	-	86 U	89 U	84 U	83 U	94 U	92 U	90 U	89 U	88 U
Thallium	ug/kg	2300	2300	4200 X	15000000	NLV	NLV	-	90 U	210 U	250	160 U	250	380	400	89 U	320
Vanadium	ug/kg	72000	990000	190000	1000000000 D	NLV	NLV	-	7100	12300	9700	10300	15500	11300	15200	8100	6800
Zinc	ug/kg	2400000	5000000	G	1000000000 D	NLV	NLV	-	15100	32000	28000	30700	32000	34600	33600	15300	46000
PCBs																	
Aroclor-1016 (PCB-1016)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	ug/kg	NLL	NLL	NLL	NLL	16000000	240000	300 UJ	-	-	-	-	-	-	-	-	-
Petroleum Products																	
Ethylene glycol	ug/kg	300000	840000		110000000 C	NLV	NLV	-	11000 U	11000 U	11000 U	10000 U	12000 U	11000 U	11000 U	11000 U	11000 U
Propylene glycol	ug/kg	3000000	8400000	5800000	110000000 C	NLV	NLV	-	43000 U	44000 U	42000 U	41000 U	47000 U	46000 U	45000 U	45000 U	44000 U
Semi Volatiles																	
2-Methylnaphthalene	ug/kg	57000	170000	ID	5500000	ID	ID	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Acenaphthene	ug/kg	300000	880000	4400	970000	190000000	81000000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Acenaphthylene	ug/kg	5900	17000	ID	440000	1600000	2200000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Anthracene	ug/kg	41000	41000	ID	41000	1000000000 D	1400000000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Benzo(a)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Benzo(a)pyrene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Benzo(b)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Benzo(g,h,i)perylene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Benzo(k)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Chrysene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Dibenz(a,h)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Fluoranthene	ug/kg	730000	730000	5500	730000	1000000000 D	740000000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Fluorene	ug/kg	390000	890000	5300	890000	1000000000 D	130000000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Indeno(1,2,3-cd)pyrene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Naphthalene	ug/kg	35000	100000	870	2100000	250000	300000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Phenanthrene	ug/kg	56000	160000	5300	1100000	2800000	160000	300 U	280 U	290 UJ	280 U	7.3 J	310 U	300 U	300 U	290 U	290 U
Pyrene	ug/kg	480000	480000	ID	480000	1000000000 D	650000000	300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U
Volatiles																	
1,1,1-Trichloroethane	ug/kg	4000	4000	4000	460000 C	250000	3800000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	2.2 J	17000 J[bca]
1,1,2,2-Tetrachloroethane	ug/kg	170	700	1600 X	94000	23000	10000	46 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	150 UJ
1,1,2-Trichloroethane	ug/kg	100	100	6600 X	420000	24000	17000	46 U	4.8 UJ	5.5 U	5.1 UJ	5.2 UJ	5.8 UJ	5.2 UJ	5.6 U	5.4 U	150 U
1,1-Dichloroethane	ug/kg	18000	50000	15000	890000 C	230000	2100000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	0.47 J	5.4 U	470
1,1-Dichloroethene	ug/kg	140	140	1300 X	220000	330	1100	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	2900[bcag]
1,2,4-Trichlorobenzene	ug/kg	4200	4200	1800	1100000	1100000 C	28000000	230 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	770 UJ
1,2,4-Trimethylbenzene	ug/kg	2100	2100	570	110000 C	110000 C	21000000	36 J	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U

TABLE 1

SOIL ANALYTICAL RESULTS
2007 & 2008 INVESTIGATIONS
DUCO STORES UST AREA
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Location Name		***Criteria*** [1]						***MW34-04***	***SB-1-08***	***SB-2-08***	***SB-3-08***	***SB-3-08***	***SB-4-08***	***SB-4-08***	***SB-5-08***	***SB-6-08***	***SB-7-08***
Sample Name		RDW_PC	IND_PC	GSI_PC	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	***SO-7097-112007-CB-001***	***S-7097-072808-EV-001***	***S-7097-072808-EV-002***	***S-7097-072808-EV-003***	***S-7097-072808-EV-004***	***S-7097-072808-EV-005***	***S-7097-072808-EV-006***	***S-7097-072808-EV-007***	***S-7097-072808-EV-008***	***S-7097-072808-EV-009***
Sample Date								***11/20/2007***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***	***7/28/2008***
Sample Depth:								***(0-2) ft bgs***	***(5-7) ft bgs***	***(7.5-9) ft bgs***	***(8-10) ft bgs***	***(10-12) ft bgs***	***(8-10) ft bgs***	***(10-12) ft bgs***	***(15-16) ft bgs***	***(7-8) ft bgs***	***(10.5-12) ft bgs***
	Units	b	c	d	e	f	g										
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	10 M	10 M		1200 C	1200 C	13000	230 UJ	9.6 U	11 U	10 U	10 UJ	12 U	10 UJ	11 U	11 U	770 UJ
1,2-Dibromoethane (Ethylene Dibromide)	ug/kg	20 M	20 M	20 M	500	3600	1700	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	770 U
1,2-Dichlorobenzene	ug/kg	14000	14000	360	210000 C	210000 C	39000000	91 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
1,2-Dichloroethane	ug/kg	100	100	7200 X	380000	11000	6200	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 U
1,2-Dichloropropane	ug/kg	100	100	5800 X	320000	4000	25000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 U
1,3,5-Trimethylbenzene	ug/kg	1800	1800	1100	94000 C	94000 C	16000000	91 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
1,3-Dichlorobenzene	ug/kg	170	480	1100	51000	ID	ID	91 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
1,4-Dichlorobenzene	ug/kg	1700	1700	290	140000	100000	77000	91 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
2-Butanone (Methyl Ethyl Ketone)	ug/kg	260000	760000	44000	27000000 C	27000000 C	29000000	680 U	19 U	22 U	20 U	21 U	23 U	21 U	22 U	22 U	2300 U
2-Hexanone	ug/kg	20000	58000		2500000 C	1800000	1100000	2300 UJ	19 U	22 U	20 U	21 U	23 U	21 UJ	22 U	22 U	7700 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/kg	36000	100000	ID	2700000 C	2700000 C	45000000	2300 UJ	19 U	22 U	20 U	21 U	23 U	21 U	22 U	22 U	7700 U
Acetone	ug/kg	15000	42000	34000	110000000 C	110000000 C	130000000	680 U	19 U	22 U	20 U	21 U	23 U	21 U	7.4 J	22 U	2300 U
Benzene	ug/kg	100	100	4000 X	220000	1600	13000	46 U	4.8 U	5.5 U	5.1 U	0.29 J	5.8 U	5.2 U	5.6 U	5.4 U	150 U
Bromodichloromethane	ug/kg	1600 W	1600 W	ID	280000	1200	9100	91 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	310 U
Bromoform	ug/kg	1600 W	1600 W	ID	870000 C	150000	900000	91 UJ	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
Bromomethane (Methyl Bromide)	ug/kg	200	580	700	1400000	1600	11000	180 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
Carbon disulfide	ug/kg	16000	46000	ID	280000 C	140000	1300000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	0.62 J	5.4 U	770 U
Carbon tetrachloride	ug/kg	100	100	900 X	92000	190	3500	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 UJ
Chlorobenzene	ug/kg	2000	2000	940	260000 C	120000	770000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U
Chloroethane	ug/kg	8600	34000	ID	950000 C	950000 C	30000000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
Chloroform (Trichloromethane)	ug/kg	1600 W	1600 W	3400 X	1500000 C	38000	45000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 U
Chloromethane (Methyl Chloride)	ug/kg	5200	22000	ID	1100000 C	10000	40000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
cis-1,2-Dichloroethene	ug/kg	1400	1400	12000	640000 C	22000	180000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	79 J
cis-1,3-Dichloropropene	ug/kg							46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 UJ
Cyclohexane	ug/kg							1100 UJ	9.6 U	11 U	10 U	10 U	12 U	10 U	11 U	11 U	3700 U
Dibromochloromethane	ug/kg	1600 W	1600 W	ID	360000	21000	24000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U
Dichlorodifluoromethane (CFC-12)	ug/kg	95000	270000	ID	1000000 C	1700000	53000000	91 UJ	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	310 U
Ethylbenzene	ug/kg	1500	1500	360	140000 C	140000 C	720000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U
Isopropylbenzene	ug/kg	91000	260000	ID	390000 C	390000 C	1700000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
Methyl acetate	ug/kg							100 J	9.6 U	11 U	10 U	10 U	12 U	10 U	11 U	11 U	3700 U
Methyl cyclohexane	ug/kg							1100 UJ	9.6 U	11 U	10 U	10 U	12 U	10 U	11 U	11 U	3700 U
Methyl Tert Butyl Ether	ug/kg	800	800	15000 X	5900000 C	5900000 C	25000000	230 U	19 U	22 U	20 U	21 U	23 U	21 U	22 U	22 U	770 U
Methylene chloride	ug/kg	100	100	19000 X	2300000 C	240000	210000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
Styrene	ug/kg	2700	2700	2200	270000	250000	970000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U
Tetrachloroethene	ug/kg	100	100	900 X	88000 C	11000	180000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U
Toluene	ug/kg	16000	16000	2800	250000 C	250000 C	2800000	91 U	0.50 J	0.61 J	5.1 U	0.36 J	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U
trans-1,2-Dichloroethene	ug/kg	2000	2000	30000	1400000 C	23000	280000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 U
trans-1,3-Dichloropropene	ug/kg							46 UJ	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 UJ
Trichloroethene	ug/kg	100	100	4000 X	440000	37000	78000	46 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	3300 [K]
Trichlorofluoromethane (CFC-11)	ug/kg	52000	150000		560000 C	560000 C	92000000	91 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	310 U
Trifluorotrichloroethane (Freon 113)	ug/kg	550000 C	550000 C	1700	550000 C	550000 C	180000000	230 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	770 U
Vinyl chloride	ug/kg	40	40	300	20000	270	4200	36 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	1.8 J	5.4 U	120 U
Xylene (total)	ug/kg	5600	5600	700	150000 C	150000 C	46000000	140 U	9.6 U	11 U	10 U	10 U	12 U	10 UJ	11 U	11 U	460 U
General Chemistry																	
Total Solids	%							87.7	93.5	89.9	95.0	96.7	85.3	87.3	89.1	89.6	91.1

Notes:

(1) Cleanup criteria is from Michigan Department of Environmental Quality, Act 451, Part 201 Industrial and Commercial II, III, and IV.
RDW_PC - Residential and Commercial I Drinking Water Protection Criteria
IDW_PC - Industrial and Commercial II, III, and IV Drinking Water Protection Criteria
GSI_PC - Groundwater Surface water interface Protection Criteria
b - Constituents exceeding the RDW_PC
c - Constituents exceeding the IDW_PC
d - Constituents exceeding the GSI_PC
e - Constituents exceeding the groundwater protection Criteria
f - Constituents exceeding the Soil Volatilization to Indoor Air Inhalation Criteria
g - Constituents exceeding the Infinite Source Volatile Soil Inhalation Criteria
U- Not present at or above the associated value.
UJ-Estimated reporting limit.
J-Estimated concentration.
ID - Insufficent data to develop criterion
G - The GSI Criterion depends on the pH or water hardness, or both, of the receiving water.
X - The GSI Criterion shown in the generic clean up criteria tables is not protective for surface water that is used as a drinking water source.
NLL - means hazardous substance is not likely to leach under most soil conditions.
NLV - hazardous substance is not likely to volatilize under most conditions.

TABLE 2

GROUNDWATER AND BOREHOLE WATER ANALYTICAL RESULTS
2007 & 2008 INVESTIGATIONS
DUCO STORES UST AREA
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Location Name					*MW34-01*	*MW34-02*	*MW34-03*	*MW34-04*	*MW34-04*	*SB-3-08*	*SB-3-08*	*SB-4-08*
Sample Name	*Criteria* [1]				*GW-7097-110907-NRS-010*	*GW-7097-110807-NRS-009*	*GW-7097-110807-NRS-008*	*GW-7097-121307-CB-002*	*GW-7097-121307-CB-003*	*GW-7097-072908-NRS-002*	*GW-7097-072908-NRS-003*	*GW-7097-072908-NRS-001*
Sample Date	*RDW*	*IDW*	*GSI*		*11/9/2007*	*11/8/2007*	*11/8/2007*	*12/13/2007*	*12/13/2007*	*7/29/2008*	*7/29/2008*	*7/29/2008*
					Original	*Original*	*Original*	*Original*	*Duplicate*	*Original*	*Duplicate*	*Original*
	Units	a	b	c								
Metals												
Lead	ug/L	4	4	G,X	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	-	-	-
Petroleum Products												
Ethylene glycol	ug/L	15000	42000	190000	-	-	-	-	-	10000 U	10000 U	10000 U
Propylene glycol	ug/L	150000	420000	290000	-	-	-	-	-	10000 U	10000 U	10000 U
Semi Volatiles												
2-Methylnaphthalene	ug/L	260	750	ID	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	27
Acenaphthene	ug/L	1300	3800	19	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	1.0 J
Acenaphthylene	ug/L	52	150	ID	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	10 U
Anthracene	ug/L	43	43	ID	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	10 U
Benzo(a)anthracene	ug/L	2.1	8.5	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Benzo(a)pyrene	ug/L	5	5	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Benzo(g,h,i)perylene	ug/L	1	1		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Benzo(k)fluoranthene	ug/L	1	1		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Chrysene	ug/L	1.6	1.6	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Dibenz(a,h)anthracene	ug/L	2	2	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	8.0 U	5.0 U	4.0 U
Fluoranthene	ug/L	210	210	1.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.5 U	2.0 U
Fluorene	ug/L	880	2000	12	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	8.0 U	5.0 U	4.0 U
Naphthalene	ug/L	520	1500	13	5.0 U	5.0 U	5.0 U	5.0 U	0.24 J	1.0 J	0.84 J	44[x]
Phenanthrene	ug/L	52	150	2.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	8.0 U	5.0 U	1.8 J
Pyrene	ug/L	140	140	ID	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	12 U	10 U
Volatiles												
1,1,1-Trichloroethane	ug/L	200	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
1,1,2-Trichloroethane	ug/L	5	5	330	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 UJ
1,1-Dichloroethane	ug/L	880	2500	740	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	1.0 U	1.0 U	17 UJ
1,1-Dichloroethene	ug/L	7	7	65	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,2,4-Trichlorobenzene	ug/L	70	70	30	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	83 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	0.79 J	17 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 UJ
1,2-Dibromoethane (Ethylene Dibromide)	ug/L	0.05	0.05	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,2-Dichlorobenzene	ug/L	600	600	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,2-Dichloroethane	ug/L	5	5	360	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,2-Dichloropropane	ug/L	5	5	290	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	17 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
1,4-Dichlorobenzene	ug/L	75	75	13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
2-Butanone (Methyl Ethyl Ketone)	ug/L	13000	38000	2200	25 U	25 U	25 U	25 U	25 U	25 U	25 U	420 U
2-Hexanone	ug/L	1000	2900		50 U	50 U	50 U	50 U	50 U	50 U	50 U	830 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	1800	5200	ID	50 U	50 U	50 U	50 U	50 U	50 U	50 U	830 UJ
Acetone	ug/L	730	2100	1700	25 U	25 U	25 U	1.3 J	25 U	25 U	25 U	89 J
Benzene	ug/L	5	5	200	1.0 U	1.0 U	1.0 U	0.96 J	0.98 J	21[xb]	25[xb]	330 J[xbc]
Bromodichloromethane	ug/L	80	80	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Bromoform	ug/L	80	80	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Bromomethane (Methyl Bromide)	ug/L	10	29	35	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Carbon disulfide	ug/L	800	2300	ID	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	83 U
Carbon tetrachloride	ug/L	5	5	45	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Chlorobenzene	ug/L	100	100	47	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Chloroethane	ug/L	430	1700	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Chloroform (Trichloromethane)	ug/L	80	80	170	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Chloromethane (Methyl Chloride)	ug/L	260	1100	ID	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	17 U
cis-1,2-Dichloroethene	ug/L	70	70	620	1.0 U	1.0 U	1.0 U	0.33 J	0.30 J	1.0 UJ	1.0 UJ	17 UJ
cis-1,3-Dichloropropene	ug/L				1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Cyclohexane	ug/L				1.0 U	1.0 U	1.0 U	3.9	3.8	26	27	110
Dibromochloromethane	ug/L	80	80	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Ethylbenzene	ug/L	74	74	18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4 J	2.7 J	27 J[x]

TABLE 2

GROUNDWATER AND BOREHOLE WATER ANALYTICAL RESULTS
2007 & 2008 INVESTIGATIONS
DUCO STORES UST AREA
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Location Name					*MW34-01*	*MW34-02*	*MW34-03*	*MW34-04*	*MW34-04*	*SB-3-08*	*SB-3-08*	*SB-4-08*
Sample Name	*Criteria* [1]				*GW-7097-110907-NRS-010*	*GW-7097-110807-NRS-009*	*GW-7097-110807-NRS-008*	*GW-7097-121307-CB-002*	*GW-7097-121307-CB-003*	*GW-7097-072908-NRS-002*	*GW-7097-072908-NRS-003*	*GW-7097-072908-NRS-001*
Sample Date	*RDW*	*IDW*	*GSI*		*11/9/2007*	*11/8/2007*	*11/8/2007*	*12/13/2007*	*12/13/2007*	*7/29/2008*	*7/29/2008*	*7/29/2008*
					Original	*Original*	*Original*	*Original*	*Duplicate*	*Original*	*Duplicate*	*Original*
	Units	a	b	c								
Isopropylbenzene	ug/L	800	2300	ID	5.0 U	5.0 U	5.0 U	4.6 J	4.6 J	38	39	17 J
Methyl acetate	ug/L				10 U	10 U	10 U	10 U	10 U	10 U	10 U	170 U
Methyl cyclohexane	ug/L				1.0 U	1.0 U	1.0 U	2.6	2.6	7.6	6.0	67
Methyl Tert Butyl Ether	ug/L	40	40	730	5.0 U	5.0 U	0.21 J	5.0 U	5.0 U	5.0 U	5.0 U	83 UJ
Methylene chloride	ug/L	5	5	940	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	83 UJ
Styrene	ug/L	100	100	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Tetrachloroethene	ug/L	5	5	45	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Toluene	ug/L	790	790	140	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.88 J	1.1	7.4 J
trans-1,2-Dichloroethene	ug/L	100	100	1500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
trans-1,3-Dichloropropene	ug/L				1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Trichloroethene	ug/L	5	5	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	17 UJ
Trifluorotrichloroethane (Freon 113)	ug/L	170000	170000	32	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 U
Vinyl chloride	ug/L	2	2	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17 UJ
Xylene (total)	ug/L	280	280	35	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0	2.0	11 J

Notes:

(1) Cleanup criteria is from Michigan Department of Environmental Quality, Act 451, Part 201.
RDW - Residential and Commercial I Drinking Water Criteria
IDW - Industrial and Commercial II, III, and IV Drinking Water Criteria
GSI - Groundwater Surface water interface Criteria
a - constituents exceeding the RDW
b - constituents exceeding the IDW
c - constituents exceeding the GSI
U- Not present at or above the associated value.
UJ-Estimated reporting limit.
J-Estimated concentration.
ID - Insufficent data to develop criterion
G - The GSI Criterion depends on the pH or water hardness, or both, of the receiving water.
X - The GSI Criterion shown in the generic clean up criteria tables is not protective for surface water that is used as a drinking water source.

TABLE 3

GROUNDWATER SAMPLING ANALYSIS LIST
2009 GROUNDWATER INVESTIGATION
DUCO STORES UST AREA
CENTERPOINT BUSINESS CAMPUS
PONTIAC, MICHIGAN

Well Location	Analysis [1]
MW34-01 MW34-03 MW34-04 MW34-05 MW34-06 MW34-07 MW34-08	**Select VOCs**: Benzene, EDB, 1,2-dichloroethane, ethylbenzene, MTBE, Toluene, Xylenes (total), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene **Select SVOCs**: Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, 2-Methylnaphthalene, Naphthalene, and Pyrene and **Select Metals:** Lead (total)

Notes
EDB - 1,2-dibromoethane
MTBE - Methyl-tert-butyl-ether
VOC - Volatile Organic Compounds
SVOC - Semi-Volatile Organic Compounds
[1] The analysis is based on the Table 1 of Recommended Parameters for Common Petroleum Products list for the leaking underground storage tank (LUST) releases presented in Op Memo 14.