AECOM
257 West Genesee St.
Suite 400
Buffalo, NY 14202-2657
www.aecom.com

716 856 5636 tel
716 856 2545 fax

November 10, 2017

Mr. Glenn M. May, CPG
Environmental Geologist II
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2915

RE: **VAPOR INTRUSION EVALUATION**
FORMER CHEMICAL LEAMAN TANK LINES FACILITY, SITE NO. 9-15-014
TONAWANDA (C), ERIE COUNTY, NY

Dear Mr. May:

In a letter dated February 10, 2017, the New York State Department of Environmental Conservation (NYSDEC) provided comments on the draft Site Management Plan (SMP) that AECOM submitted for the former Chemical Leaman Tank Lines facility. One of the NYSDEC comments was related to the possibility of vapor intrusion (VI):

- Evaluate the potential for vapor intrusion for all current site buildings and any developed in the future, including provision for mitigation of any impacts identified.

In subsequent discussions between AECOM and the NYSDEC regarding their comments to the draft SMP, the NYSDEC suggested that a written evaluation be prepared to assess the potential for VI to occur in the Site buildings.

AECOM has prepared this letter, on behalf of Quality Distribution, Inc. (QDI), to address this issue.

Site Features/Background

There are currently four buildings located on site; 1) the former waste water treatment building, 2) the former drum storage area, 3) the truck wash/service bays, and 4) the office building (Figure 1). All buildings are concrete slab-on-grade construction. The former waste water treatment and drum storage area buildings are no longer used and are unoccupied. The truck wash/service bays building and office building are the only occupied buildings.

If VI were to occur at the Site, it would involve specifically the “Office” and the “Truck Wash Bays” located in the northeast corner of the property. The Office is one story and only occupied during business hours. The Truck Wash Bays is a two-story structure, but is not occupied full-time, even during business hours. And when vehicles are being washed the bay doors are usually open.

Historically, groundwater has been encountered at the Site between 3-8 feet below grade. Flow is predominantly to the south toward Ellicott Creek, with some mounding observed at times in the former lagoon vicinity (Figures 2 and 3).

Soil Contamination

During previous investigations, three areas of the Site, identified as Operable Units 1, 2, and 3 (Figure 4) exhibited evidence of soil contamination (Figures 5, 6, and 7). Volatile organic compounds (VOCs) were the primary constituents of concern. When the laboratory analytical results of the soil

samples were compared to the NYSDEC's 6NYCRR Part 375 commercial soil cleanup objectives (SCOs), exceedances were noted as follows:

- two sample locations within Operable Unit 1 (14-24 feet below ground surface),
- three sample locations within Operable Unit 2 (3-8 feet below ground surface),
- two sample locations within Operable Unit 3 (2-4 feet below ground surface).

Because of the depth of the contamination in Operable Unit 1 it was decided to treat it in March 2015 with nutrient injections to promote enhanced bioremediation. The contamination in Operable Units 2 and 3 was excavated in May 2015 and disposed of off-Site. Confirmation soil samples indicated no exceedances of Part 375 commercial SCOs in Operable Units 2 or 3 following excavation. Additional groundwater sampling has been proposed for Operable Unit 1 to check on the effectiveness of the remedy.

Groundwater Contamination

As indicated in previous investigations, groundwater in the vicinities of the Operable Units was impacted by VOCs at concentrations that exceeded Class GA groundwater standards (Figure 8). However, the last time site-wide groundwater was sampled at the Site was June 2004 and potential source areas have since been excavated or treated by remedial injection. As discussed below, the groundwater contamination was basically downgradient of the Site buildings.

VI Evaluation

The soil contamination encountered in Operable Units 2 and 3 was effectively remediated to less than Part 375 commercial SCOs through excavation/removal/disposal. The soil contamination encountered in Operable Unit 1 was addressed in March 2015 and the progress will be checked during the proposed follow-up groundwater sampling. Regardless, the soil contamination in all three Operable Units was basically downgradient from the Site buildings, especially the Office, which is the only Site building to be consistently occupied during business hours.

According to ASTM International Guide E2600–15: *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, Section 9.2, the critical distance between the contamination and the "target property" (i.e., Site buildings) is 100 feet for soil contaminants and 30 feet for dissolved-phase groundwater contaminants. If the critical distance is greater than that, which it appears to be in this case, then it could be argued that vapor migration to the Site buildings is unlikely. As an example, GP-04WA (6'-8'), which was the "hottest" sample location within Operable Unit 2 before it was excavated, was a minimum of 150 feet from the Truck Wash Bays and approximately 200 feet from the Office.

For groundwater, monitoring well B-01 provides the best comparison. In June 2004, benzene was detected at a concentration of 16.4 micrograms per liter (µg/L). The well lies approximately 125 feet from the Truck Wash Bays and more than 150 feet from the Office, basically downgradient (particularly for the Office), and well outside the 30 feet recommended by ASTM E2600-15. In addition, hydrocarbons typically will decay in the vadose zone and, therefore, do not pose a significant risk of VI.

Taking into account all these factors:

- the severity and extent of past (known) contaminants,
- the remedial efforts to date,
- groundwater flow direction at the Site, and

- the location of the Site buildings in relation to the past (known) contaminant areas, both with respect to distance and orientation (i.e., upgradient/downgradient),

AECOM and QDI feel it unlikely that VI would be an issue in the Site buildings under the present conditions.

If you have any questions regarding this evaluation, please do not hesitate to contact me at (716) 923-1157 or Colin Wasteneys at (716) 923-1164.

Sincerely,

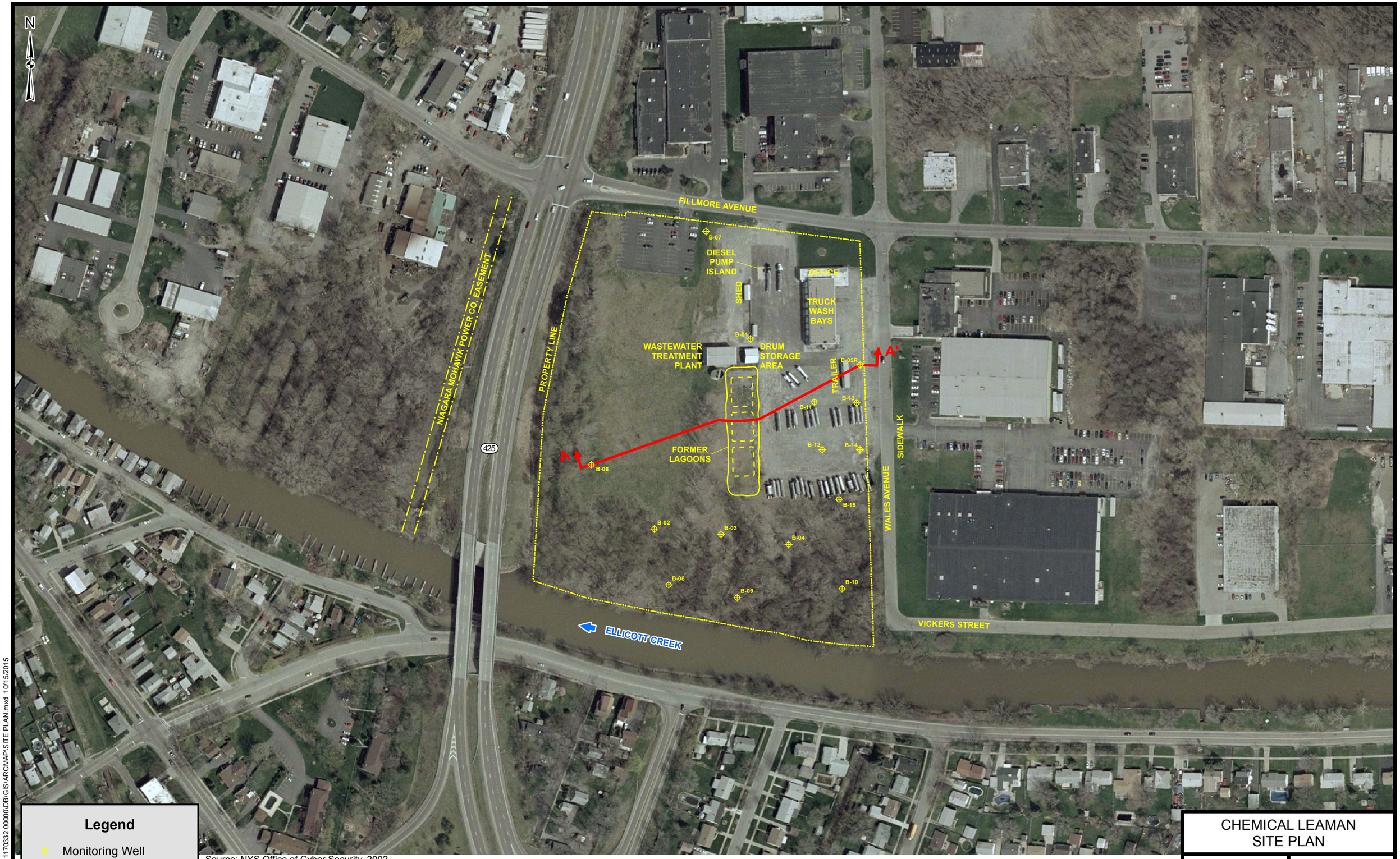
AECOM Technologies, Inc.

David Coulter, PG
Task Manager

Colin Wasteneys, PG
Sr. Project Manager

Enclosures

FIGURES



J:\Projects\11170332.00000\DB\GIS\ARCMAP\SITE PLAN.mxd 10/15/2015

N

FILLMORE AVENUE

NIAGARA MOHAWK POWER CO. EASEMENT

PROPERTY LINE

B-07, 570.27

570.2

570.0

569.8

SHED

OFFICE

TRUCK WASH BAYS

B-01, 570.23

WASTEWATER TREATMENT PLANT

DRUM STORAGE AREA

B-05R, 570.47

569.6

569.4

569.2

TRAILER

TP-01, 569.08

B-11, 569.37

B-13, 569.14

569.0

569.2

STANDPIPE, 569.12

568.8

568.6

568.4

568.2

568.0

567.8

567.6

567.4

567.2

567.0

566.8

566.6

566.4

566.2

566.0

565.8

565.6

TP-02, 568.93

B-12, 569.19

B-14, 570.62

SIDEWALK

B-06, 567.57

B-15, 569.03

WALES AVENUE

B-02, 567.56

B-03, 567.62

B-04, 567.25

B-08, 567.42

565.4

565.2

B-09, 564.98

B-10, 566.58

ELLICOTT CREEK

SG-02, 565.54

Legend

- Monitoring Well
- Piezometer
- Staff Gauge
- 570.00 Groundwater Elevation Contour
- Groundwater Flow Direction
- Location ID — B-02, 567.56 — Groundwater Elevation (ft)

150 0 150 Feet

CHEMICAL LEAMAN
GROUNDWATER ELEVATION CONTOUR MAP
(JULY 22, 2004)

AECOM

FIGURE 2

J:\35665.01\db\GIS\wwlev apr 07/22/04 GROUND WATER ELEVATION MAP 8/6/2004

N

FILLMORE AVENUE

B-07, 571.09

NIAGARA MOHAWK POWER CO. EASEMENT

PROPERTY LINE

SHED

OFFICE

TRUCK WASH BAYS

B-01, 571.25

WASTEWATER TREATMENT PLANT

DRUM STORAGE AREA

B-05R, 570.47

TRAILER

TP-01, 571.26

B-11, 570.61

B-13, 570.79

STANDPIPE, 571.98

SIDEWALK

572.0

TP-02, 572.10

B-12, 570.81

B-14, 570.62

B-06, 570.51

571.8

571.6

571.4

571.2

571.0

570.8

570.8

571.0

571.2

571.4

571.6

571.8

B-15, 571.06

WALES AVENUE

B-02, 570.03

B-03, 571.09

B-04, 572.07

B-08, 569.80

B-09, 567.43

B-10, 569.49

ELLICOTT CREEK

SG-02, 564.88

Legend

- Monitoring Well
- Piezometer
- Staff Gauge
- 570.0 Groundwater Elevation Contour
- Groundwater Flow Direction
- Location ID — B-02, 570.03 — Groundwater Elevation (ft)

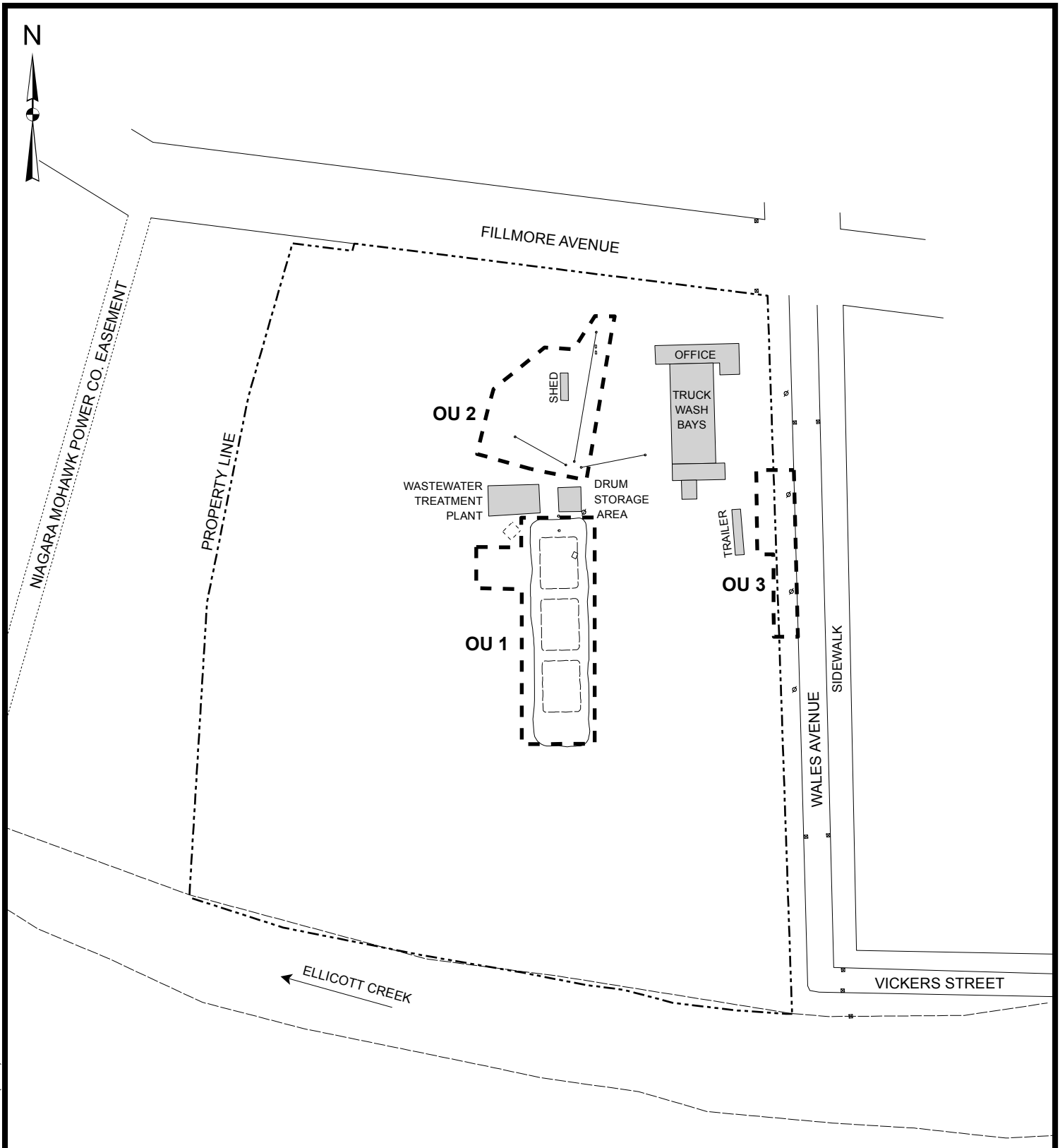
150 0 150 Feet

CHEMICAL LEAMAN
GROUNDWATER ELEVATION CONTOUR MAP
(MAY 3, 2004)

AECOM

FIGURE 3

J:\35665.01\tbl\GIS\wellev.apr (0.2 FT C.I.) 05/03/04 GROUNDWATER ELEVATION MAP
8/6/2004



Legend

Operable Unit

180 0 180 Feet

AECOM

CHEMICAL LEAMAN
OPERABLE UNITS

FIGURE 4

J:\Projects\11170332.00000\DB\GIS\ARCMAP\OPERABLE UNITS (REV).mxd 10/15/2015

N

GP-24W (SOIL)
Benzo(a)pyrene, 460
Dibenz(a,h)anthracene, 300

GP-19W (SOIL)
cis-1,2-Dichloroethene, 15,000
Phenol, 110

GP-04 (SOIL) 2'-4'
Vinyl chloride, 230
Benzene, 1,100
Toluene, 35,000
Chlorobenzene, 30,000
Ethylbenzene, 9,200
Xylene (total), 38,000
1,2,4-Trichlorobenzene, 6,100,000
1,4-Dichlorobenzene, 300,000
Benzo(a)anthracene, 490
Chrysene, 590
Benzo(b)fluoranthene, 1,200
Benzo(a)pyrene, 500
Dibenz(a,h)anthracene, 83

FILLMORE AVENUE

GP-06D (SOIL) 4' - 8'
Benzo(a)pyrene, 89.1

GP-04WA (SOIL) 6'-8'
Vinyl chloride, 4,000
Benzene, 270
Trichloroethene, 2,000,000
Toluene, 14,000
Chlorobenzene, 7,500

GP-04W (SOIL) 2'-4'
Benzene, 4,800
Trichloroethene, 92,000
Toluene, 2,600
Chlorobenzene, 55,000
Xylene (total), 5,800
1,2,4-Trichlorobenzene, 81,000
2,4,5-Trichlorophenol, 470
Hexachlorobenzene, 1,700
Benzo(a)anthracene, 420
Chrysene, 500
Benzo(a)pyrene, 380
Dibenz(a,h)anthracene, 68

GP-08W (SOIL) 15'-16'
Trichloroethene, 6,900

GP-27W (SOIL) 4' - 8'
Phenol, 51

GP-28W
GP-05N
GP-06B
SHED
OFFICE
TRUCK WASH BAYS
GP-48

NIAGARA MOHAWK POWER CO. EASEMENT

SB-L1-S (SOIL) 14' - 16'
Chlorobenzene, 31,000
Ethylbenzene, 17,000
o-Xylene, 25,000
p-Xylene/m-Xylene, 68,000
Tetrachloroethene, 14,000
Toluene, 110,000
Trichloroethene, 590,000

SS-L1-S (SOIL)
Benzo(a)pyrene, 170

SS-L1-N (SOIL)
Benzo(a)pyrene, 150

WASTEWATER TREATMENT PLANT
DRUM STORAGE AREA
TANK

SB-L1-N (SOIL) 14' - 16'
Chlorobenzene, 5400
o-Xylene, 1700
p-Xylene/m-Xylene, 4800
Tetrachloroethene, 3300
Toluene, 2400
Trichloroethene, 30,000

B-L1-M
B-L1

SB-L1-S (SOIL) 14' - 18'
1,2,4-Trichlorobenzene, 2,200,000
1,2-Dichlorobenzene, 20,000
1,4-Dichlorobenzene, 23,000

SS-L2-N (SOIL)
Benzo(a)pyrene, 79

SB-L1-N (SOIL) 10' - 18'
1,2,4-Trichlorobenzene, 170,000
1,3-Dichlorobenzene, 2000
Benzo(a)anthracene, 360
Benzo(a)pyrene, 320

B-L2

GP-08 (SOIL) 2'-4'
Acetone, 330
Chlorobenzene, 1,800

GP-08 (SOIL) 10'-12'
Chlorobenzene, 1,800
1,2,4-Trichlorobenzene, 3,600

B-L1-L (SOIL) 16' - 20'
1,2,4-Trichlorobenzene, 20,000
Benzene, 220
Phenol, 130

SS-L3-N
SB-L3-N
B-L3

SB-L2-N (SOIL) 16' - 18'
Benzene, 280
Chlorobenzene, 4400
Tetrachloroethene, 19,000
Trichloroethene, 4400

GP-01 (SOIL) 2'-4'
Acetone, 410
Phenol, 3,000

GP-28 (SOIL) 4'-6'
1,2,4-Trichlorobenzene, 5,200

B-L2+4W (SOIL) 16'-18'
Acetone, 2,800
Chloroform, 1,600
1,1,1-Trichloroethane, 11,000
Benzene, 1,600
Trichloroethene, 160,000
Toluene, 14,000
Tetrachloroethene, 320,000
Chlorobenzene, 90,000
Xylene (total), 26,000
1,2,4-Trichlorobenzene, 810,000

SS-L2-S (SOIL)
Benzo(a)anthracene, 300
Benzo(a)pyrene, 360
Dibenz(a,h)anthracene, 62

SB-L2-N (SOIL) 14' - 18'
Benzo(a)pyrene, 150

SS-L3-S (SOIL)
Benzo(a)anthracene, 710
Benzo(a)pyrene, 480
Chrysene, 720
Dibenz(a,h)anthracene, 53

SB-L2-S (SOIL) 18' - 20'
2-Butanone, 4600
Benzene, 580
Chlorobenzene, 7400
Tetrachloroethene, 43,000
Toluene, 1600
Trichloroethene, 8800

SB-L3-S (SOIL) 14' - 16'
Benzene, 76

SB-L2-S (SOIL) 12' - 20'
1,2,4-Trichlorobenzene, 15,000
Nitrobenzene, 4800

SB-L3-S (SOIL) 10' - 16'
Benzo(a)anthracene, 280
Benzo(a)pyrene, 220

SIDEWALK
PROPERTY LINE
WALES STREET
VICKERS STREET
ELLICOTT CREEK

Legend

- Soil Sample Location (At Least One Organic Compound Exceeds TAGM 4046 Criteria)
- Lagoon Sample Location (At Least One Organic Compound Exceeds TAGM 4046 Criteria)
- Soil Sample or Lagoon Sample With No Organic Compounds Exceeding Criteria

Location ID — GP-04 (SOIL) 2'-4' — Depth
1,4-Dichlorobenzene, 300,000
Compound Exceeding Criteria — Concentration

Exceedances of Part 375 Restricted Commercial SCOs are Highlighted in Yellow

NOTES:
1. ALL SOIL ANALYTICAL RESULTS ARE REPORTED IN UG/KG.
2. PROPERTY LINE LOCATIONS ARE APPROXIMATE.

150 0 150 Feet

CHEMICAL LEAMAN
ORGANIC COMPOUND EXCEEDENCES
IN RI SOIL SAMPLES

AECOM

FIGURE 5

N:\11\170332.00000\DB\GIS\chem_leaman.apr ORGANIC COMPOUND EXCEEDENCES 11X17_3 5/25/2010

J:\Projects\11170332.00000\DB\GIS\ARCMAP\OU 2 - PROPOSED EXCAVATION LIMITS (REV2).mxd 10/19/2015

N

B-07

OU2-07: Volatile Organic Compound (3.0' - 3.5')	
1,1,1-Trichlorothane	47000
1,2-Dichlorobenzene	430000
1,3-Dichlorobenzene	33000
1,4-Dichlorobenzene	470000
Chlorobenzene	210000
cis-1,2-Dichloroethene	110000
Ethylbenzene	57000
Isopropylbenzene	18000
Styrene	1700000
Tetrachloroethene	370000
Toluene	140000
Trichloroethene	1900000
Xylenes, Total	200000
1,2,4-Trichlorobenzene	6400000
PID (3.0' - 4.0')	8321 ppm

OU2-06: Volatile Organic Compound (4.5' - 5.0')	
1,1-Dichloroethene	2.9
1,2,4-Trichlorobenzene	110
1,2-Dichlorobenzene	84
1,3-Dichlorobenzene	13
1,4-Dichlorobenzene	170
Acetone	65
Benzene	28
Chlorobenzene	75
Cyclohexane	2.3
Ethylbenzene	2.2
Methylene Chloride	3.2
Tetrachloroethene	5.2
trans-1,2-Dichloroethene	14
Trichloroethene	14
Xylenes, Total	10
cis-1,2-Dichloroethene	480
Toluene	6000
Vinyl Chloride	760

OU2-04: Volatile Organic Compound (4.5' - 5.0')	
1,1-Dichloroethene	9.4
1,2-Dichlorobenzene	2.7
1,4-Dichlorobenzene	4.4
Acetone	49
Benzene	1.9
Carbon disulfide	4.5
Chlorobenzene	180
Cyclohexane	1.9
Ethylbenzene	30
Methylene Chloride	3.0
Tetrachloroethene	3.1
trans-1,2-Dichloroethene	19
Trichloroethene	5.7
Vinyl Chloride	250
Xylenes, Total	160
cis-1,2-Dichloroethene	2900
Toluene	1400

OU2-11: Volatile Organic Compound (6.0' - 6.5')	
1,1-Dichloroethene	25
1,2,4-Trichlorobenzene	28
1,2-Dichlorobenzene	1.9
1,3-Dichlorobenzene	4.3
1,4-Dichlorobenzene	23
Acetone	59
Benzene	12
Carbon disulfide	56
Chlorobenzene	14000
cis-1,2-Dichloroethene	42000
Toluene	13000
Trichloroethene	3500
Vinyl Chloride	1000
Cyclohexane	3.4
Ethylbenzene	6.8
Methylene Chloride	6.6
Styrene	2.7
Tetrachloroethene	45
trans-1,2-Dichloroethene	160
Xylenes, Total	19
PID (6.0')	710 ppm

OU2-09: Volatile Organic Compound (8.0' - 8.5')	
1,1-Dichloroethane	15
1,2-Dichloroethene, Total	14
2-Butanone (MEK)	75
4-Methyl-2-pentanone (MIBK)	650
Acetone	250
Benzene	170
Chloroethane	3.8
cis-1,2-Dichloroethene	11
Cyclohexane	1.6
Isopropylbenzene	4
Methylene Chloride	10
Styrene	13
Toluene	580
trans-1,2-Dichloroethene	2.8
Trichloroethene	6.3
Vinyl Chloride	13
Xylenes, Total	180
1,2-Dichlorobenzene	2900
1,3-Dichlorobenzene	26000
1,4-Dichlorobenzene	120000
Chlorobenzene	5600
Ethylbenzene	5500
1,2,4-Trichlorobenzene	310000

OU2-01: Volatile Organic Compound (4.5' - 5.0')	
2-Butanone (MEK)	6.9
Acetone	49
Chlorobenzene	3.1
cis-1,2-Dichloroethene	2.4
Methylene Chloride	3.4
Toluene	1.2
Trichloroethene	4.0
Xylenes, Total	1.2

GP-04WA: Volatile Organic Compound (6.0' - 8.0')	
Benzene	270
Chlorobenzene	7500
Toluene	14000
Trichloroethene	2000000
Vinyl Chloride	4000

OU2-02: Volatile Organic Compound (4.5' - 5.0')	
2-Butanone (MEK)	14
Acetone	62
Benzene	40
Chlorobenzene	4.4
cis-1,2-Dichloroethene	2.0
Methylene Chloride	2.6
Toluene	1.8

OU2-08: Volatile Organic Compound (3.0' - 3.5')	
1,1-Dichloroethane	1.4
1,2,4-Trichlorobenzene	3.3
1,2-Dichlorobenzene	62
1,2-Dichloroethene, Total	9.4
1,3-Dichlorobenzene	81
Acetone	31
cis-1,2-Dichloroethene	9.4
Ethylbenzene	8.5
Methylene Chloride	2.7
Toluene	92
Trichloroethene	6.6
Vinyl Chloride	2
Xylenes, total	15
1,4-Dichlorobenzene	7800
Benzene	230
Chlorobenzene	24000

OU2-05: Volatile Organic Compound (3.0' - 5.0')	
1,2,4-Trichlorobenzene	430000
1,4-Dichlorobenzene	3800
Chlorobenzene	85000
cis-1,2-Dichloroethene	9800
Styrene	4300
Tetrachloroethene	35000
Toluene	30000
Trichloroethene	550000
Xylenes, Total	3100
PID	8713 ppm

OU2-10: Volatile Organic Compound (3.5' - 4.0')	
1,2,4-Trichlorobenzene	86000
1,3-Dichlorobenzene	17000
1,4-Dichlorobenzene	16000
Chlorobenzene	34000
cis-1,2-Dichloroethene	9900
Ethylbenzene	26000
Styrene	4000
Tetrachloroethene	13000
Toluene	42000
Trichloroethene	36000
Xylenes, Total	41000
1,1-Dichloroethane	17
1,2-Dichlorobenzene	150
Acetone	81
Benzene	320
Carbon disulfide	24
Cyclohexane	120
Isopropylbenzene	25
Methylcyclohexane	160
Methylene Chloride	8.6
trans-1,2-Dichloroethene	94
Vinyl Chloride	570
PID (2.0' - 3.5')	141 ppm
PID (2.0')	2700 ppm

OU2-03: Volatile Organic Compound (4.5' - 5.0')	
1,2,4-Trichlorobenzene	2.1
1,4-Dichlorobenzene	10
2-Butanone (MEK)	18
Acetone	130
Cyclohexane	1.2
Ethylbenzene	22
Methylene Chloride	3.1
Trichloroethene	3.3
Benzene	200
Chlorobenzene	19000
Toluene	580

GP-28W GP-06N GP-06B GP-06A GP-06C GP-05N GP-17W GP-16W GP-11W GP-04N GP-24W GP-06D GP-23W GP-18W GP-12W GP-03N GP-22W GP-20W GP-19W GP-13W GP-21W GP-02N GP-25W GP-04WB GP-26W GP-14W GP-01N GP-10W GP-15W GP-09W GP-07W GP-08W GP-01E GP-27W GP-02E GP-06W GP-05W GP-03W GP-04W GP-06E GP-02W GP-01W B-01 GP-05E GPNE25E B-L1-B B-L1-G B-L1-K

Legend

- Test Pit Location
- Monitoring Well
- Hollow Stem Auger Borings
- Geoprobe Boring
- Staff Gauge
- Surface Soil Sample Location
- B-L3 Soil Sample Location

RED = PHASE I BLUE = PHASE II
GREEN = PHASE III ORANGE = PHASE IV

Proposed Excavation Limits:

- Primary Excavation Area
- Optional OU2-09 Area
- Optional OU2-10 Area

Location ID — OU2-10 (3.5' - 4.0') — Depth Interval
1,2-Dichlorobenzene 150
Compound Exceeding Criteria — Concentration (UG/KG)

TEST PIT INFORMATION:

OU2-01 - 20 feet NE of GP-04WA
OU2-02 - 10 feet E of GP-04WA
OU2-03 - 20 feet SE of GP-04WA
OU2-04 - 10 feet N of GP-04WA
OU2-05 - 10 feet S of GP-04WA
OU2-06 - 20 feet NW of GP-04WA
OU2-07 - 10 feet W of GP-04WA
OU2-08 - 20 feet SW of GP-04WA
OU2-09 - 20 feet W of GP-04WA
OU2-10 - 20 feet S of GP-04WA
OU2-11 - At GP-04WA

NOTES:
1. All results represented in UG/KG
2. Exceedences of Part 375 Restricted Commercial SCO's are highlighted in yellow

30 0 30 Feet

AECOM

CHEMICAL LEAMAN
OPERABLE UNIT 2
SOIL ANALYTICAL RESULTS - OCTOBER 2009

FIGURE 6

J:\Projects\11170332.00000\DB\GIS\ARCMAP\OU 3 - PROPOSED EXCAVATION LIMITS (REV2).mxd 10/15/2015 MDL

N

OU3-02: Volatile Organic Compound ((2.0' - 2.5')	
1,2,4-Trichlorobenzene	7.2
1,3-Dichlorobenzene	3.6
1,4-Dichlorobenzene	36
2-Butanone (MEK)	7.7
Acetone	67
Carbon disulfide	1.3
Chlorobenzene	45
Methylene Chloride	7.9

GP-04: Volatile Organic Compound (2.0' - 4.0')	
1,2,4-Trichlorobenzene	6100000
1,4-Dichlorobenzene	300000
Benzene	1100
Benzo(a)anthracene	490
Benzo(a)pyrene	500
Benzo(b)fluoranthene	1200
Chlorobenzene	30000
Chrysene	590
Dibenz(a,h)anthracene	83
Ethylbenzene	9200
Toluene	35000
Vinyl Chloride	230
Xylenes, Total	38000

OU3-03: Volatile Organic Compound (2.0' - 2.5')	
2-Butanone (MEK)	11
Acetone	100
Carbon disulfide	2.7
Methylene Chloride	8.2
Xylenes, Total	2.0

OU3-01: Volatile Organic Compound (2.0' - 2.5')	
Methylene Chloride	4.8
Tetrachloroethene	21
Trichloroethene	3.4

OU3-06: Volatile Organic Compound (2.0' - 2.5')	
Methylene Chloride	3.5
Trichloroethene	2.0

OU3-05: Volatile Organic Compound (2.0' - 2.5')	
1,2,4-Trichlorobenzene	14
1,2-Dichlorobenzene	160
1,2-Dichloroethene, Total	3.5
1,3-Dichlorobenzene	45
2-Butanone (MEK)	54
Acetone	260
Benzene	18
Carbon disulfide	3.3
Chlorobenzene	45
cis-1,2-Dichloroethene	3.5
Cyclohexane	1.8
Ethylbenzene	9.9
Methylcyclohexane	2.1
Methylene Chloride	7.0
Tetrachloroethene	10
Toluene	180
Trichloroethene	12
Xylenes, Total	23
1,4-Dichlorobenzene	430

OU3-04: Volatile Organic Compound (2.0' - 4.0')	
1,1,2,2-Tetrachloroethane	2.9
1,2,4-Trichlorobenzene	68
1,2-Dichloroethene, Total	27
2-Butanone (MEK)	38
Acetone	240
Benzene	16
Carbon disulfide	4.8
Chlorobenzene	82
cis-1,2-Dichloroethene	27
Ethylbenzene	46
Isopropylbenzene	1.4
Methylene Chloride	6.9
Tetrachloroethene	52
Trichloroethene	72
Vinyl Chloride	5.2
Xylenes, Total	120
1,2-Dichlorobenzene	280000
1,3-Dichlorobenzene	53000
1,4-Dichlorobenzene	700000
Toluene	400000
PID (1.5')	288 ppm

GP-47 GP-48 GP-46 GP-49 GP-01E GP-45 GP-21 GP-13 GP-22 GP-14 GP-06 GP-05 GP-20 GP-12 GP-23 GP-15 GP-07 GP-11 GP-03 GP-19 GP-24 GP-16 B-05R GP-08 GP-18 GP-10 GP-02 GP-25 GP-17 GP-09 GP-01 GP-34 GP-39 GP-26 GP-27 GP-35 GP-40 GP-36 GP-28 GP-41 GP-29 B-13 GP-37 GP-42 GP-30 GP-38 GP-43 GP-31 GP-44 GP-32 GP-33 B-11

CLAY TILE PIPE

OU3-07

UTILITY POLE (TYP.)

Legend

- Proposed Excavation Limit
- Test Pit Location
- Monitoring Well
- Hollow Stem Auger Borings
- Geoprobe Boring
- Staff Gauge
- Surface Soil Sample Location
- B-L3 — Soil Sample Location

RED = PHASE I
BLUE = PHASE II
GREEN = PHASE III
ORANGE = PHASE IV

Location ID — OU3-05 (2.0' -2.5') — Depth Interval
1,2-Dichlorobenzene — 160 — Concentration (UG/KG)
Compound Exceeding Criteria

TEST PIT INFORMATION:

OU3-01 - 20 feet SW of GP-04
OU3-02 - 10 feet W of GP-04
OU3-03 - 20 feet NW of GP-04
OU3-04 - 10 feet S of GP-04
OU3-05 - 20 feet S of GP-04
OU3-06 - 10 feet SE of GP-04
OU3-07 - Center

NOTES:
1. All results represented in UG/KG
2. Exceedences of Part 375 Restricted Commercial SCO's are highlighted in yellow

30 0 30 Feet

AECOM

CHEMICAL LEAMAN
OPERABLE UNIT 3
SOIL ANALYTICAL RESULTS - OCTOBER 2009

FIGURE 7

N

FILLMORE AVENUE

NIAGARA MOHAWK POWER CO. EASEMENT

PROPERTY LINE

B-07
No Compounds Detected

B-05R
1,2-Dichlorobenzene, 54.0
1,3-Dichlorobenzene, 12.0
1,4-Dichlorobenzene, 30.0
Benzene, 2.21
Chlorobenzene, 8.45
cis-1,2-Dichloroethene, 12.2
Tetrachloroethene, 56.5
Trichloroethene, 35.6
Vinyl chloride, 6.90

CBNW
cis-1,2-Dichloroethene, 6.84

CBNE
No Compounds Exceed Criteria

B-01
Benzene, 16.4
Chlorobenzene, 280

SHED

TRUCK WASH BAYS

B-11
1,1-Dichloroethane, 19.4
Benzene, 4.39
cis-1,2-Dichloroethene, 1180
trans-1,2-Dichloroethene, 32.3
Trichloroethene, 10.4
Vinyl chloride, 444

WASTEWATER TREATMENT PLANT

DRUM STORAGE AREA

TRAILER

B-13
Benzene, 1.01
cis-1,2-Dichloroethene, 5.59
Trichloroethene, 6.84

FORMER LAGOONS

B-14
Benzene, 1420
cis-1,2-Dichloroethene, 1870
trans-1,2-Dichloroethene, 50.2
Trichloroethene, 17.8
Vinyl chloride, 758

B-06
No Compounds Detected

B-03
Benzene, 4.36
Chlorobenzene, 6.98
Vinyl chloride, 19.0

B-12
1,1-Dichloroethene, 8.98
Benzene, 454
cis-1,2-Dichloroethene, 6640
trans-1,2-Dichloroethene, 62.4
Vinyl chloride, 255

WALES AVENUE

B-02
1,1-Dichloroethane, 11.3
1,2-Dichloroethane, 3.66
Benzene, 3.70
cis-1,2-Dichloroethene, 5.73
Trichloroethene, 10.3
Vinyl chloride, 2.21

B-04
Vinyl chloride, 2.30

B-15
Benzene, 10.9
cis-1,2-Dichloroethene, 37.7
Vinyl chloride, 139

B-10
Vinyl chloride, 26.8

B-08
cis-1,2-Dichloroethene, 7.91

CBSE
No Compounds Exceed Criteria

CBSW
No Compounds Exceed Criteria

B-09
No Compounds Exceed Criteria

ELLICOTT CREEK

SG-02A

OUTFALL
cis-1,2-Dichloroethene, 5.32

Legend

- Monitoring Well Location
- Catch Basin

B-08
cis-1,2-Dichloroethene, 7.91

Location ID | Compound Exceeding Criteria | Concentration (ug/L)

150 0 150 Feet

CHEMICAL LEAMAN
GROUNDWATER ANALYTICAL RESULTS (JUNE 2004)

AECOM

FIGURE 8

J:\35665.01\db\GIS\chem.apr JUNE 2004 GROUNDWATER ANALYTICAL RESULTS
8/6/2004