ARCADIS Design & Consultancy for natural and built assets

RACER TRUST
2ND QUARTER 2017 PROGRESS REPORT
LANSING PLANTS 2, 3 & 6

July 17 2017

Agenda

- PFAS Investigation Results
- Plant 2 LNAPL Investigation Results
- Regional 1,4-Dioxane Summary
- Lower 1,4-Dioxane Biosparge Summary
- Reporting – RFI, CMS Updates
- Plant 6 Cover Recommendations

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Plant 3 PFAS Results

Initial PFAS Sampling

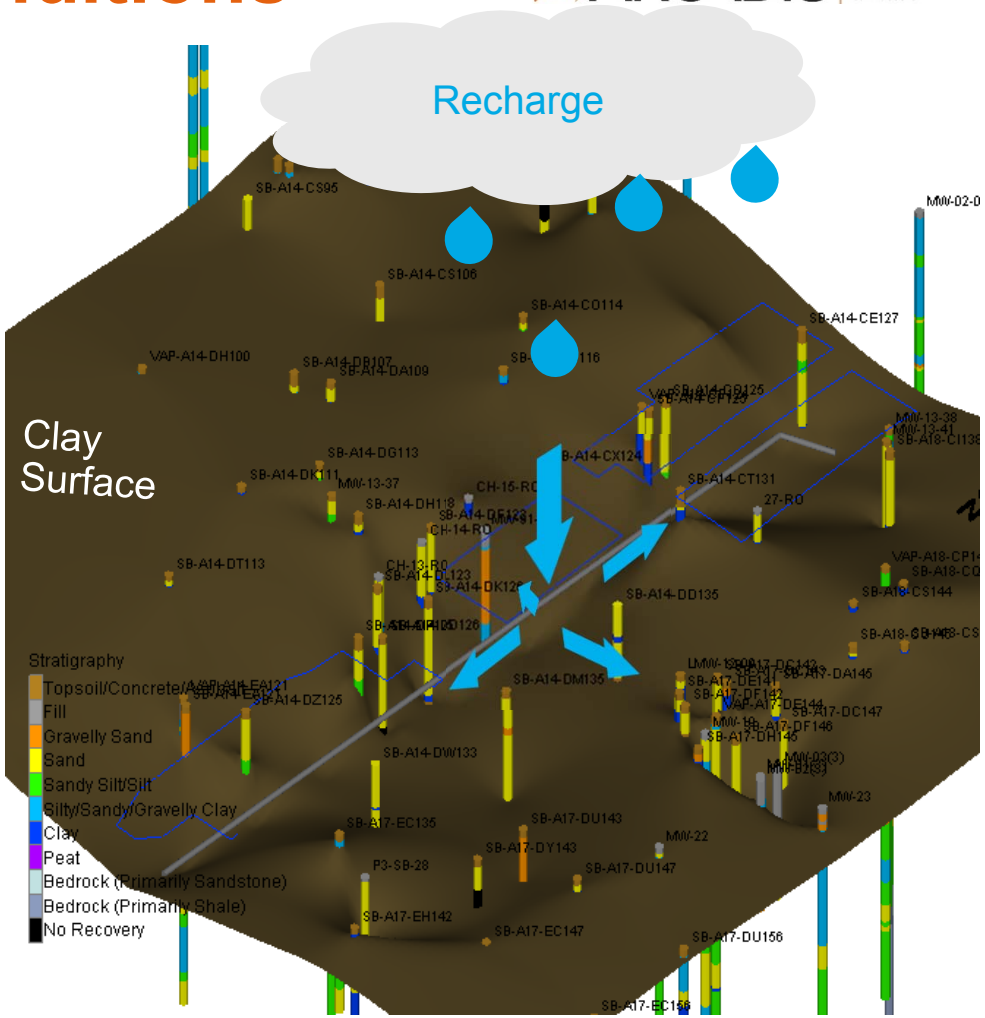
Groundwater samples analyzed (EPA method 537) from four monitoring locations near former plating line:

PFOS DW: 80 ppt
PFOS GSI: 12 ppt
PFOA DW: 89 ppt
PFOA GSI: 12,000 ppt

Perched Groundwater Conditions

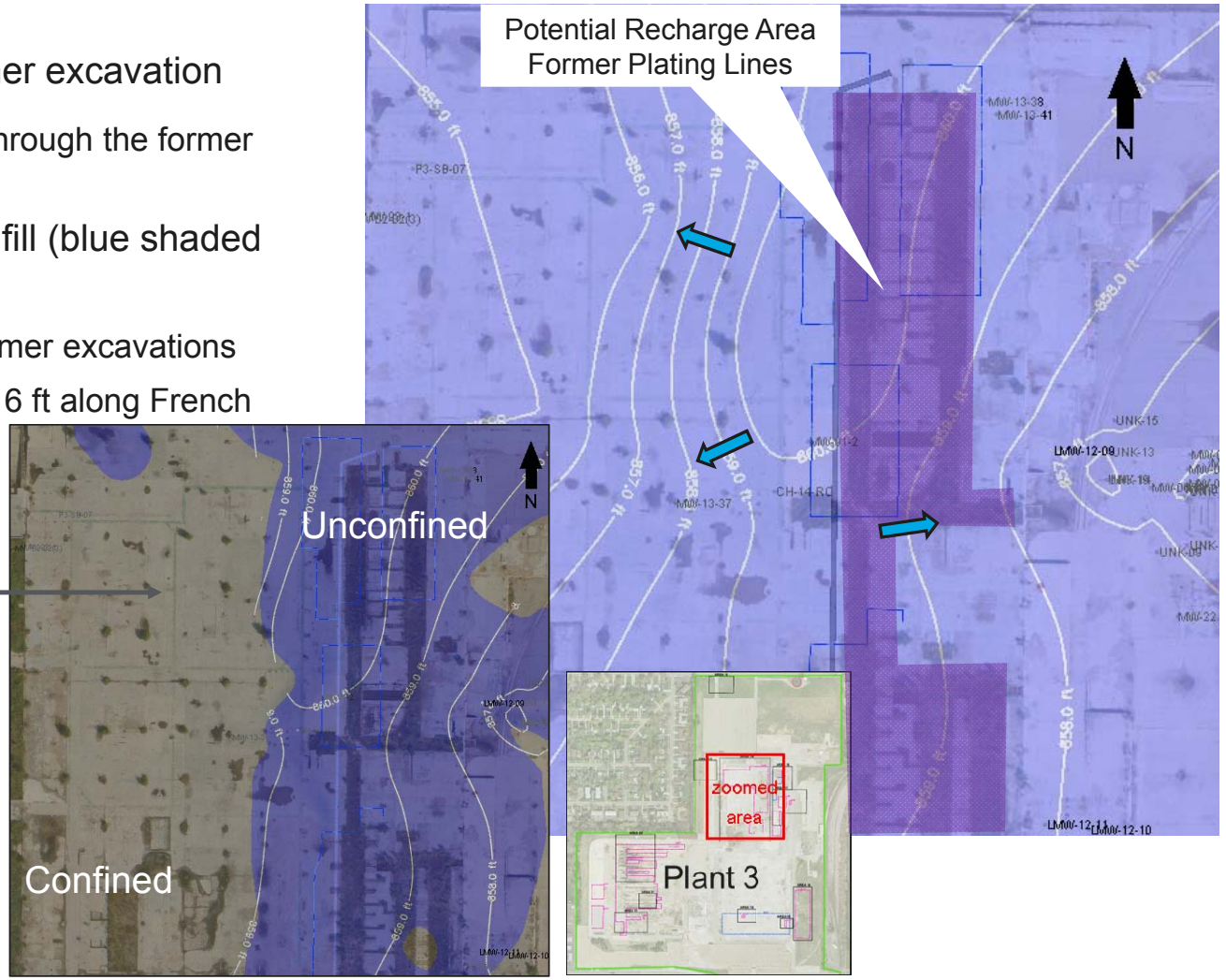
The clay surface underlying the shallow fill is shown on the right

- French drain may serve as a preferential pathway
- Perched water is connected to confined seams to the east and west
- Advection potentially follows depressions in the clay surface
  - Driven by recharge through the former plating lines
  - Primarily to the north and south along the former excavation/French drain, and east into the former UST area
  - Likely highly variable with fill thickness, material, seasonal recharge



Perched Groundwater Conditions

- Groundwater high along the former excavation
  - Potentially due to local recharge through the former plating lines
- Groundwater perched in shallow fill (blue shaded areas)
  - Discontinuous areas related to former excavations
  - Maximum saturated thickness of 16 ft along French drain
- Confined sand seams
  - ~9.5-14.5 feet bgs
  - Connected to unconfined zone



PFAS Delineation Phase I

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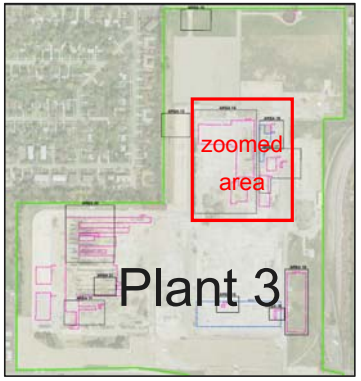
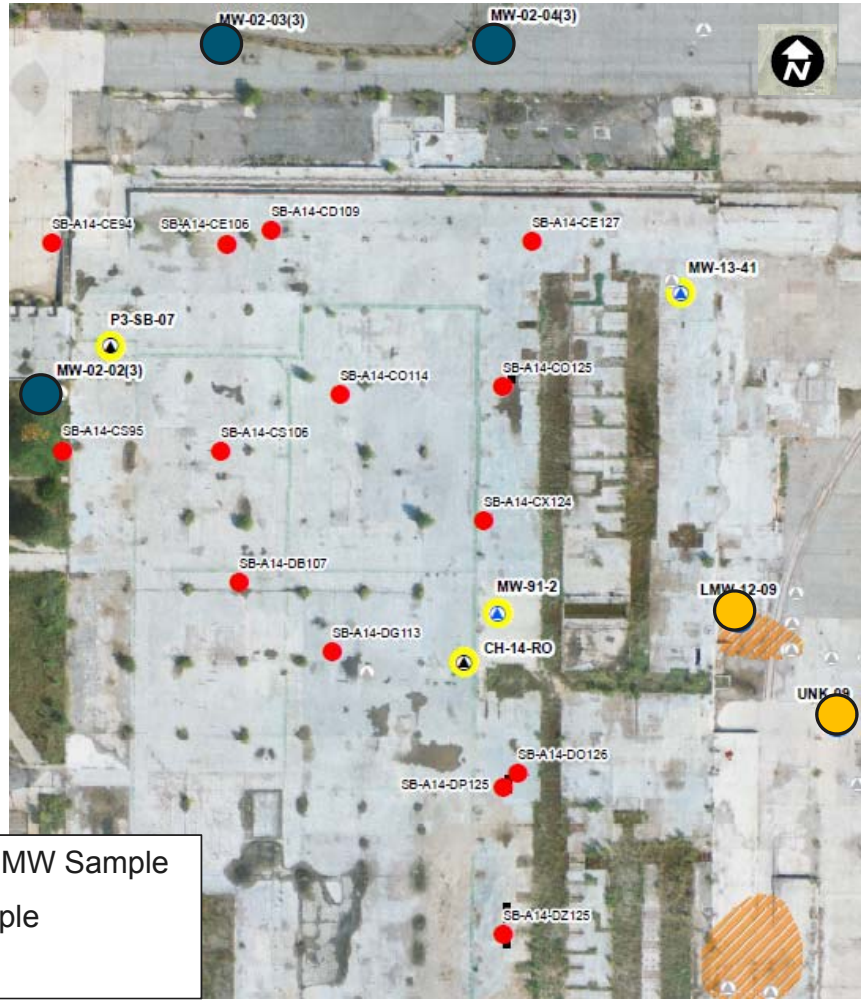
Objectives:

- Define extent of PFAS
- Evaluate potential migration pathways

Groundwater samples analyzed (EPA method 537) from:

- 11 soil borings
- 13 VAP intervals
- 3 deep overburden wells
- 2 perched monitoring wells
- storm sewer outfall at the north end of Plant 3
- 3 soil samples were collected from the vadose





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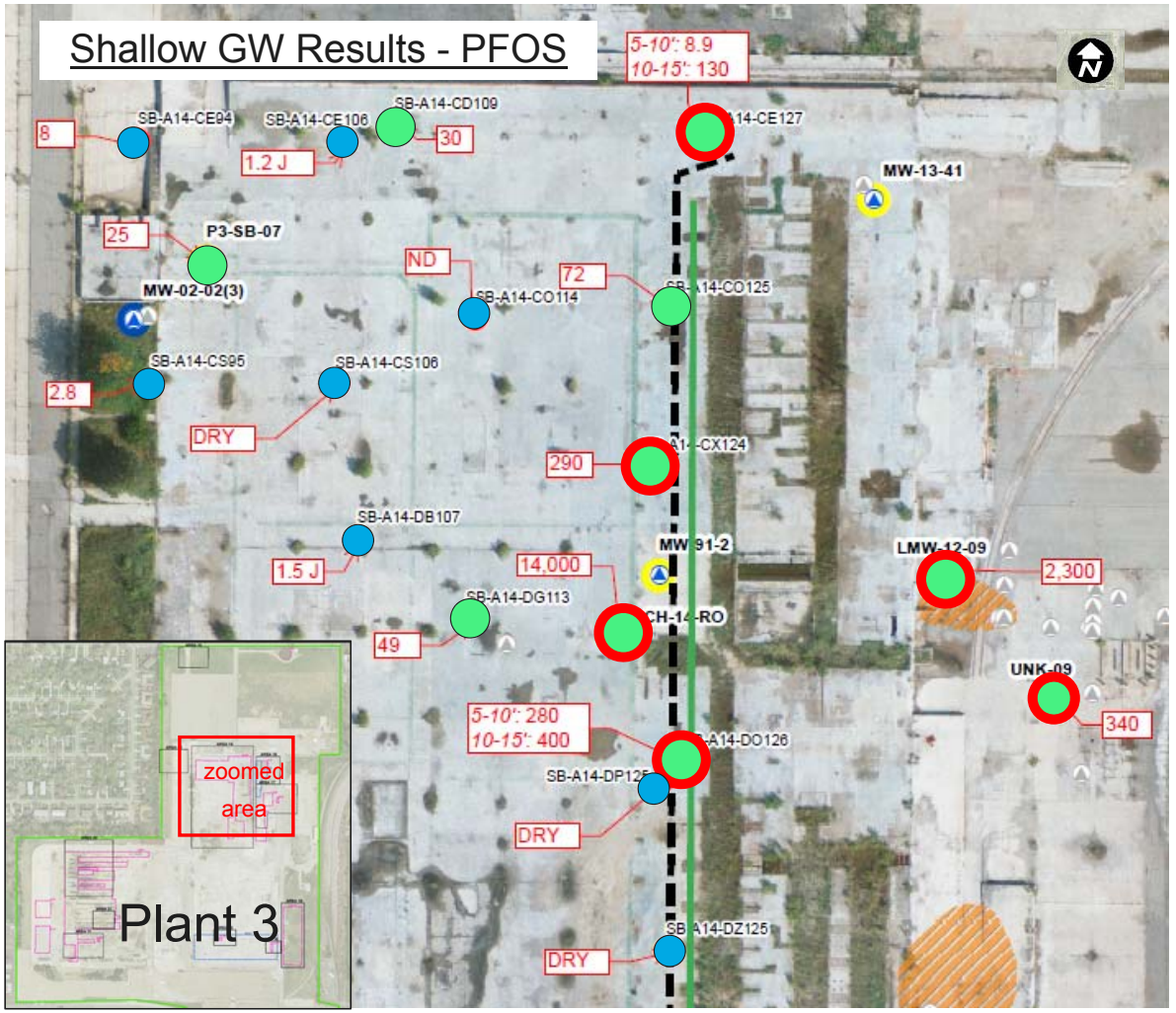
Shallow Groundwater Results

PFOA and PFOS primary detections and currently the only PFAS with proposed MDEQ criteria

- PFOA exceedances are limited to wells CH-14-RO and LMW-12-09
- PFOS is the primary PFAS of concern

PFOS Results

- - < Criteria or Dry
- - > Proposed GSI (12 ppt)
- - > Proposed DW (80 ppt)



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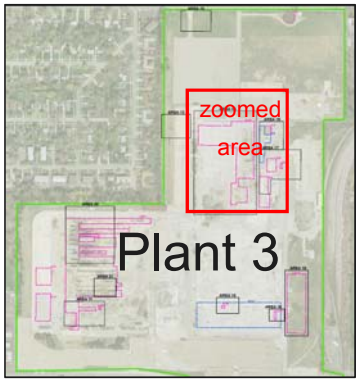
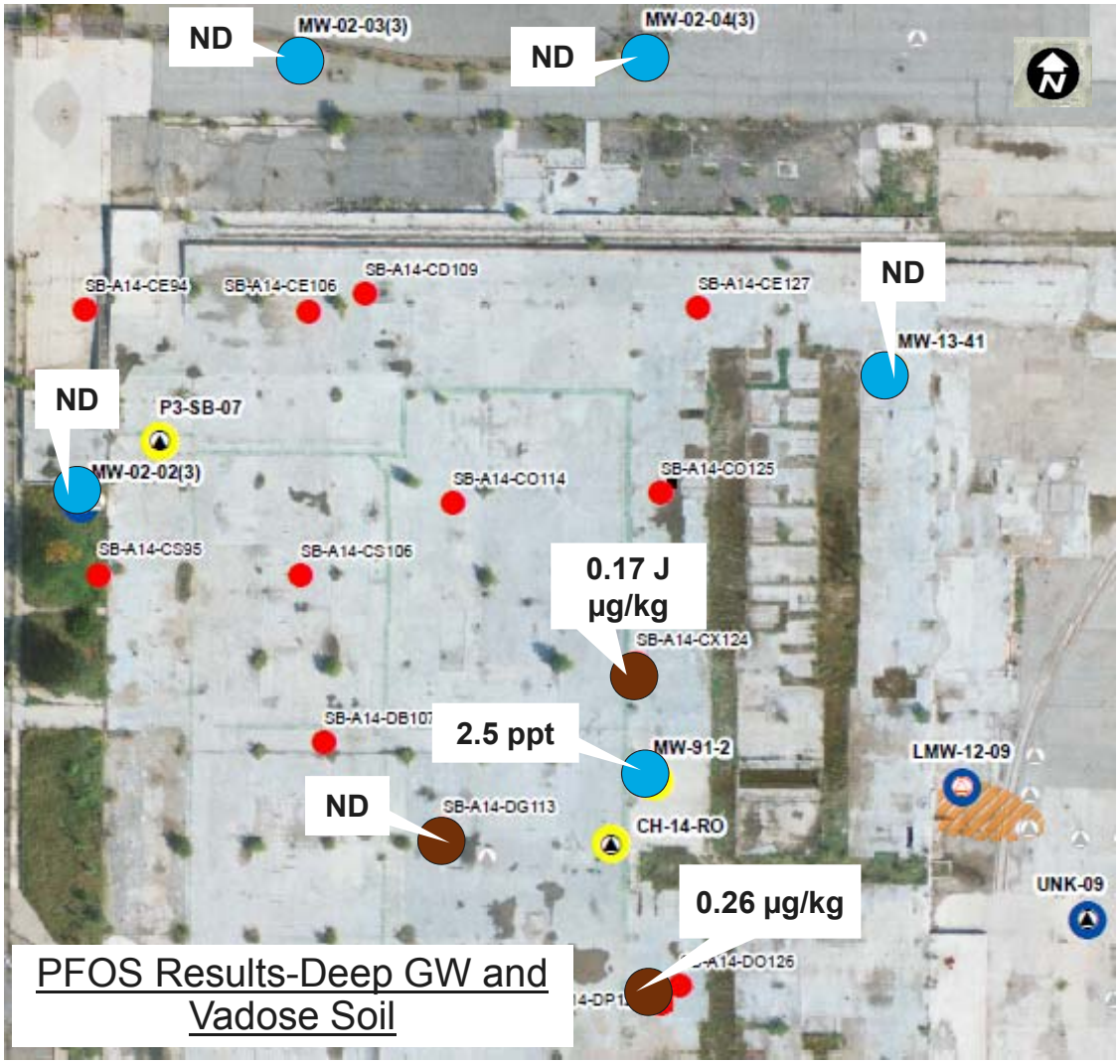
Soil and Deep GW Results

- PFOS at 2.5 ppt in MW-91-2 (below proposed criteria)
- No detections in the other deep overburden wells.
- Soils typically saturated below 4 feet along plating line
- Soil samples collected at depths of 2-4 feet bgs
- Low detections of PFOS in two soil samples collected near the plating line



Legend

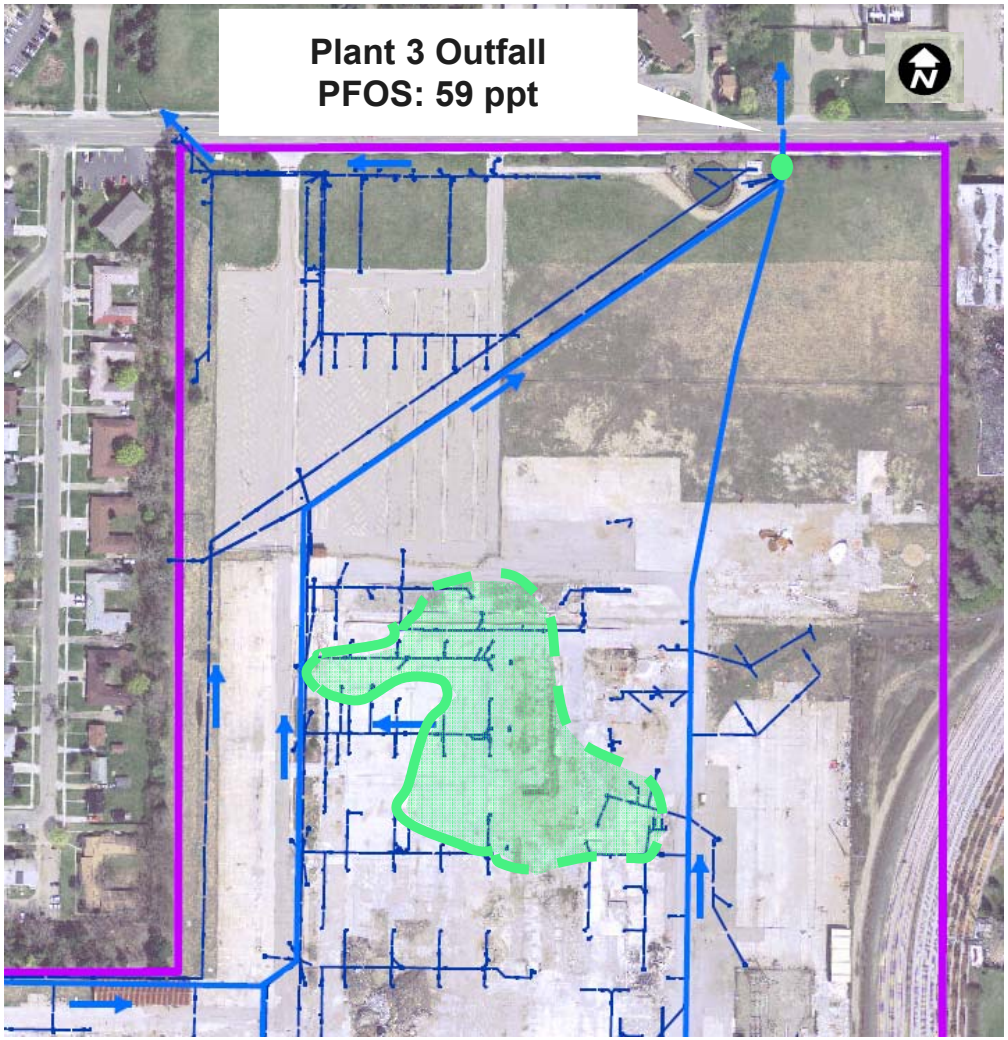
- Deep Overburden Sample
- Vadose Zone Soil Sample



PFOS Results-Deep GW and Vadose Soil

GSI Pathway

- PFOS detected in the northern Plant 3 storm sewer outfall at 59 ppt (proposed GSI: 12 ppt)
- PFOA did not exceed GSI
- Storm sewers require further evaluation to determine potential contributing lines.



- Storm Sewers

- Approximate extent of PFOS in GW > GSI criterion of 12 ppt

Note: dashed lines indicate estimated extent

Path Forward

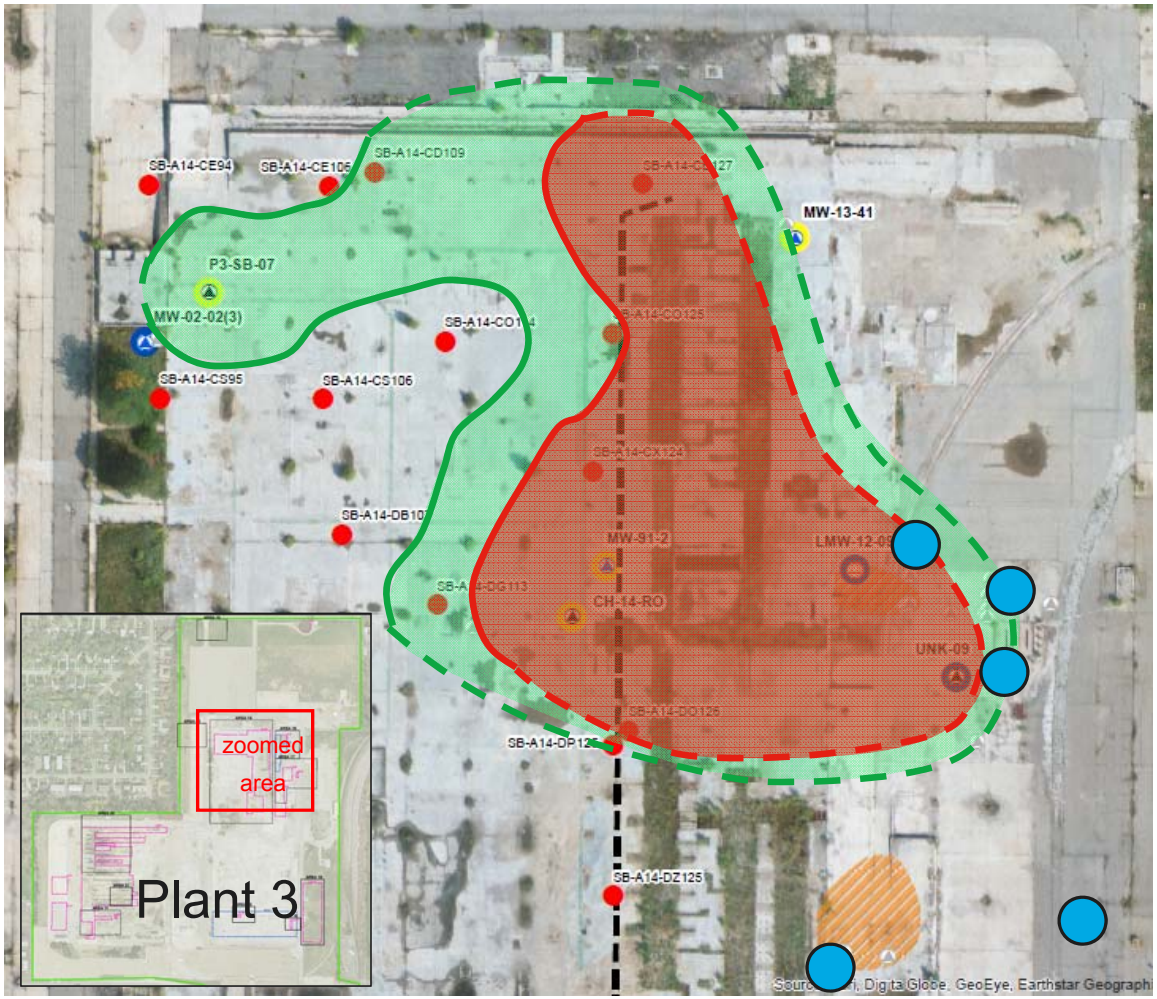
Additional sampling from existing wells to help inform the next steps of delineation (in progress).

- Resample Plant 3 storm sewer outfall during baseflow conditions
- Sample 5 perched monitoring wells: MW-05(3), MW-12-19, P3-SB-28, UNK-10, and UNK-15
- Collect additional information of storm system

Based on the results of the first phase of delineation, PFOA and PFOS are the only PFAS of concern

- The analyte list will be reduced to PFOA and PFOS and evaluated at Eurofins (reduces cost, reduces turnaround time)

Further VAP sampling locations will be selected based on the results of the monitoring well sampling.



Legend

- Proposed Sample Locations
- Approximate extent of PFOS in GW >GSI criterion of 12 ppt
- Approximate extent of PFOS in GW > DW criterion of 80 ppt
- **Note: dashed lines indicate estimated extent**

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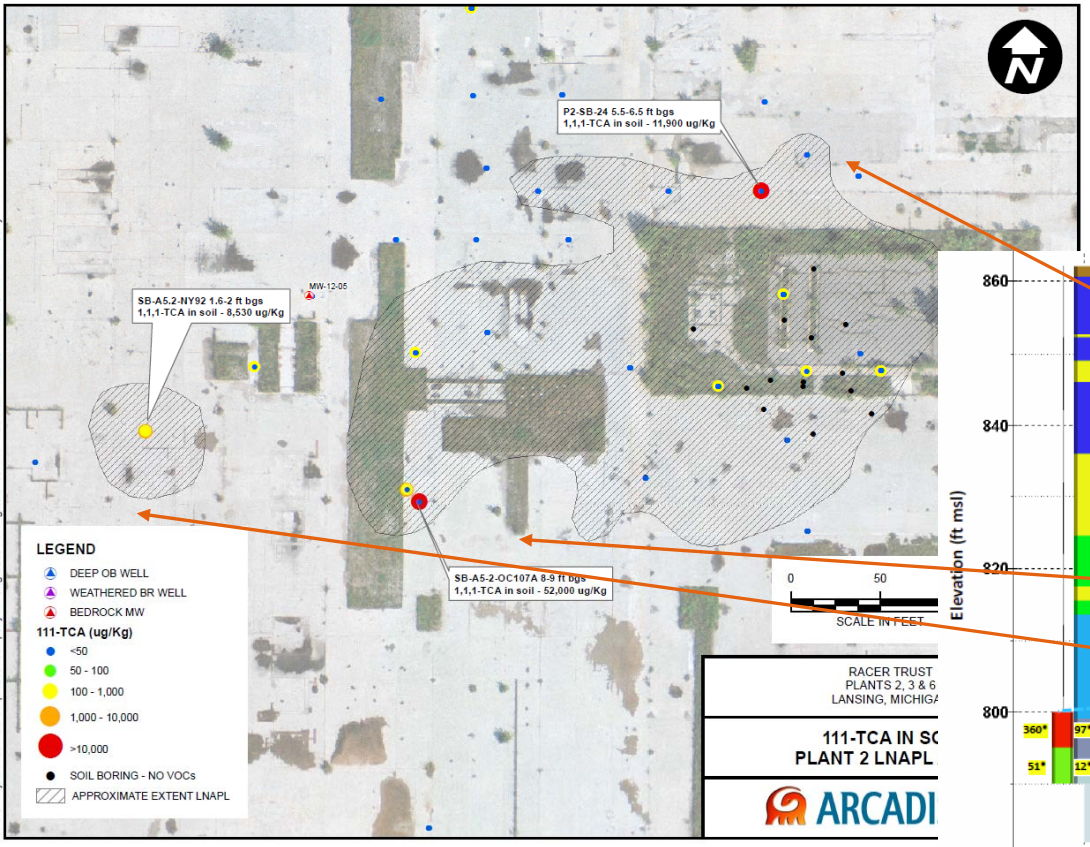
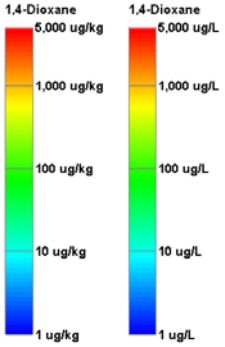
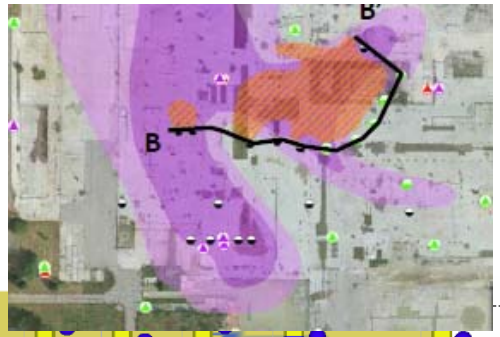
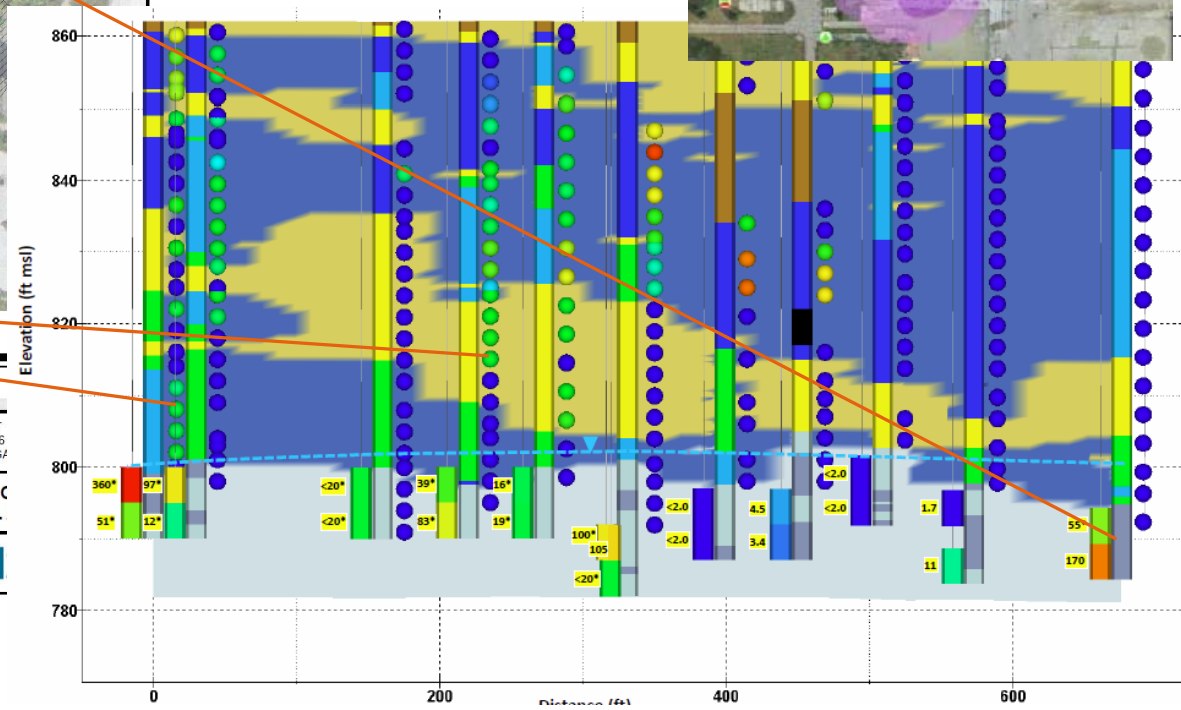
Plant 2 LNAPL Results

TCA, 1,4-D and LNAPL









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Evaluation of LNAPL Source Remedy

What is the value of Plant 2 LNAPL source mass removal?

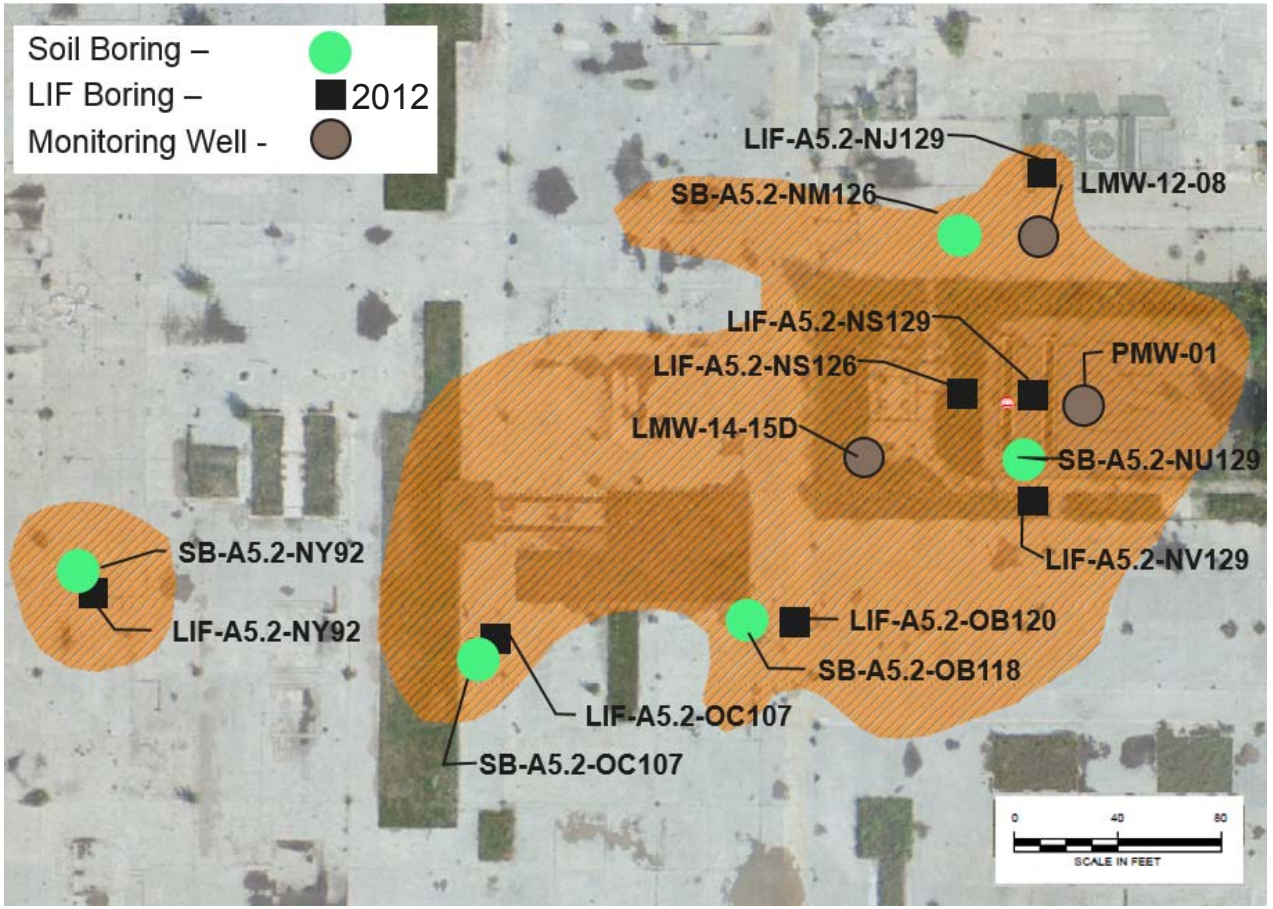
Questions that required answers:

- Is 1,4-dioxane still present in the LNAPL and otherwise co-located with 1,1,1-TCA?
  - Only low concentrations of 1,4-dioxane (i.e. <100 µg/kg) present in LNAPL zones
  - Higher concentrations of 1,4-dioxane below LNAPL in clay storage zones
  - Correlation to TCA is inconsistent.
  - Results suggest a depleted source mass
- Will removal of TCA hotspots make tangible difference in mass leaching?
  - Results do not suggest a correlation between 1,4-dioxane and the presence of TCA or other compounds
  - 1,4-Dioxane concentrations are low and generally consistent throughout LNAPL and underlying clay zones
- If 1,4-dioxane is still present in LNAPL at leachable concentrations, can we identify where 90% of the mass is located and complete an efficient removal?
  - No. Mass is distributed throughout the underlying storage zones and surrounding dissolved phase mass
  - Corrected SPLP concentrations below leachate criterion of 115 µg/L
  - Removal of source will not provide significant benefit to long term remedy strategy

1,4-Dioxane Leaching Evaluation

Evaluate 1,4-Dioxane mass in Plant 2 LNAPL zones, and the relationship to TCA occurrence

- Five borings to 30 ft bgs.
- Collected 3-4 soil samples for analysis:
  - VOCs (8260) & 1,4-dioxane (8270)
  - SPLP for VOCs & 1,4-dioxane
- Three LNAPL samples from MWs



Analytical Results

All soil results <110 µg/kg 1,4-dioxane

For soil samples:

- 1,4-dioxane concentrations low
  - 10-100 µg/kg, even through LNAPL impacted zones
  - Res DWP: 500 µg/kg (proposed 2016)
- SPLP data indicates lower concentrations than observed in weathered bedrock
- Concentrations higher in clay below LNAPL impacted zones
  - Significant portion of leaching already complete
- Although TCA observed, not always coincident with 1,4-dioxane

Location			Analysis					
			Soil 1,4-Dioxane	SPLP 1,4-Dioxane	Corrected Field Leachate SPLP 1,4-Dioxane	1,1,1-TCA	SPLP 1,1,1-TCA	Staining / Odor
Boring ID	Depth (feet bgs)	Zone	Method: SW-846 8270C SIM			Method: SW-846 8260B		
			CAS#: 123-91-1			CAS #: 71-55-6		
			ug/kg	ug/L	ug/L	ug/kg	ug/L	
SB-A5.2-OB118	10.5-11	Sand, some silt / Shallow LNAPL	13	0.18 J	0.25	24	--	Odor and Sheen
	11-11.5		--	--	--	--	<10 U	--
	14-14.5	Clay	29	--	--	--	--	--
	21-21.5	Sand and Silt / Deep LNAPL	35	1.4	6.8	93 J	--	Odor and Sheen
	24.5-25	Clay	65	--	--	--	--	--
SB-A5.2-OC107	13-13.5	Sand, some silt / Shallow LNAPL	17	1.1	111	4,000	--	Odor
	13.5-14		--	--	--	--	1,000	--
	14.5-15		33	--	--	--	--	--
	19.5-20	Clay	77	--	--	--	--	--
SB-A5.2-NY92	1.5-2	Sand, some silt / Shallow LNAPL	5.1	0.24	3.6	2,000	--	Odor
	2-2.5	Silt	--	--	--	--	<10 U	--
	4.5-5		4.5	--	--	--	--	--
	14.5-15	Clay	43	--	--	--	--	--
SB-A5.2-NM126	5-5.5	Sand, some silt / Shallow LNAPL	<20 U	0.27	--	<4 U	--	Black staining and odor
	5.5-6	Silt	--	--	--	--	<10 U	--
	6.5-7	Clay	110	--	--	--	--	--
	15-15.5	Sand, some silt / Deep LNAPL	90	4.3	83	<4 U	--	Odor and sheen
	15.5-16		--	--	--	--	<10 U	
	19.5-20	Clay	30	--	--	--	--	--
SB-A5.2-NU129	5-5.3	Granules / Shallow LNAPL	<100 U	0.55	--	150 J	--	NAPL observed
	5.3-5.5		--	--	--	--	<10 U	--
	6.5-7		22	--	--	--	--	--
	19.5-20	Clay	48	--	--	--	--	--

SPLP Results

- All corrected field leachate concentrations lower than leachate criterion
  - Leachate Criterion = 7.2 µg/L x 16 Dilution Attenuation Factor (DAF) = **115 µg/L**
- Heterogeneity in 1,4-dioxane mass distribution, LNAPL pore saturations, and clay content influence leaching to GW behavior
  - Produces variable measured soil-water partition coefficient (K_d)
- SPLP will under predict field leachate concentrations of 1,4-dioxane (weakly sorbing, 20:1 dilution)
- NJDEP spreadsheet is used to correct to expected leachate concentrations for 1,4-dioxane under more realistic field conditions

MDEQ default DAF =16

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:	Plant 2 LNAPL Area
Case number:	
Sampling date:	4/6/2017
Contaminant:	1,4-Dioxane
CAS No:	123-91-1 (enter NA if inorganic)
Water solubility (mg/L)	1.00E+06
Aqueous reporting limit (µg/L):	2.00E-04 (if unavailable, enter a value below lowest concentration measured)
Soil reporting limit (mg/kg):	2.00E-04
Health-based GWQC (µg/L)	7.20E+00
DAF (20, or site-specific if approved):	16
Leachate Criterion (µg/L):	1.20E+02 adjusted from 115.2
Henry's law constant (dimensionless):	1.96E-04 (enter 0 if inorganic)

NOTE:
USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples
Do not enter samples with soil concentrations at or below the reporting limit.
When leachate concentration is non-detect, enter the aqueous reporting limit
Enter site-specific dilution-attenuation factor (DAF) if desired
Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells
Indicates that Alternative Remediation Standard needs to be recalculatec

No results exceed leachate criterion = 115 µg/L

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate (except VOCs)	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
OB118_10.5-11	0.1	2	0.013	0.18						52.2	27.69	0.25	PASS
NY92_1.5-2	0.1	2	0.0051	0.24						1.3	94.12	3.63	PASS
OB118_21-21.5	0.1	2	0.035	1.4						5.0	80.00	6.79	PASS
NM126_15-15.5	0.1	2	0.09	4.3						0.9	95.56	83.06	PASS
OC107_13-13.5	0.1	2	0.017	1.1						0.0	129.41	110.78	PASS

SB-A5.2-OB118

Soil types

- Concrete
- Silty Sand
- Silt
- Clay/silty clay
- Interbedded sand/silt/clay
- Clay

Strat column

PID reading (ppm)

Soil Concentration (ug/kg)

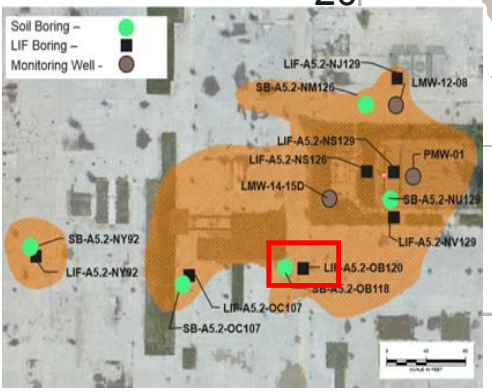
1,4-Dioxane

Total VOCs

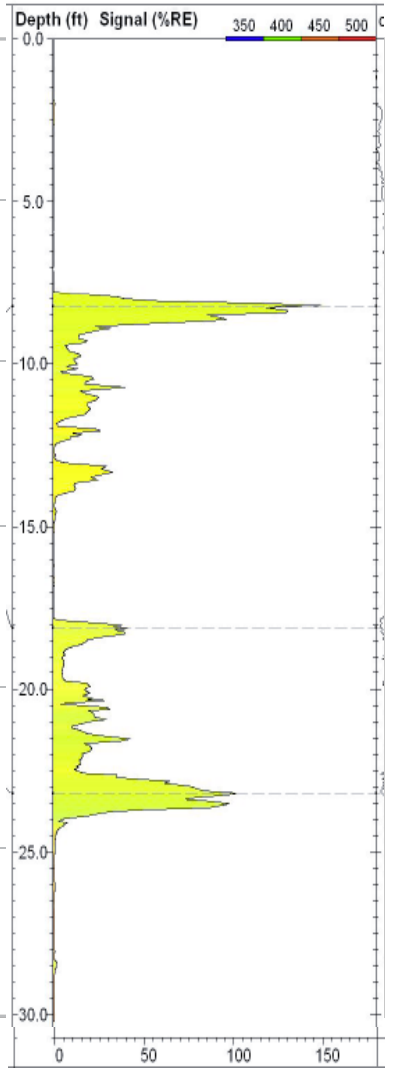
Odor and sheen from 10.3-11 ft

Odor and sheen

Depth, ft bgs



LIF-OB120



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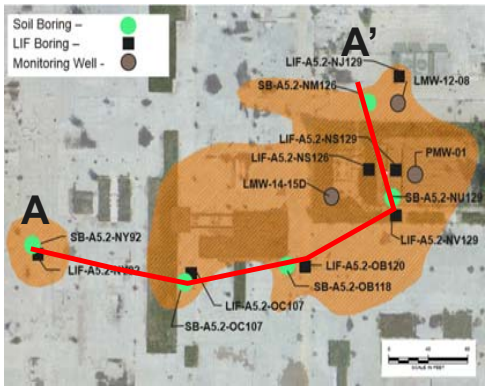
Plant 2 LNAPL Area Cross-Section



Boring Stratigraphy

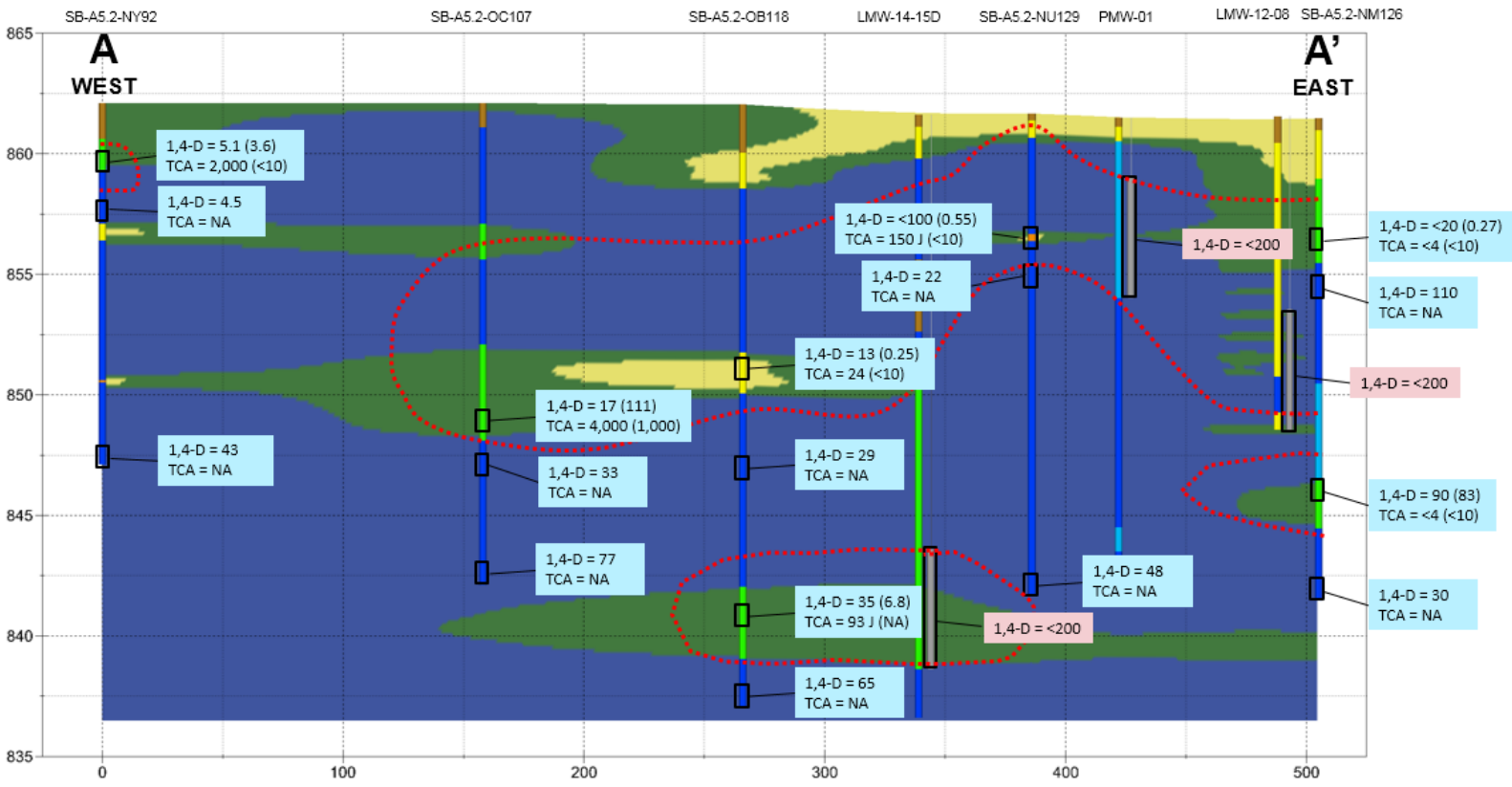
- Topsoil/Asphalt/Concrete
- Fill
- Gravelly Sand
- Sand
- Sandy Silt/Silt
- Silty/Sandy/Gravelly Clay
- Clay

Cross-Section Hydrofacies

- Transport zone
- Slow advection zone
- Storage zone

Soil Results (SPLP Results)

LNAPL Results



1. THE RED DOT LINE REPRESENTS THE APPROXIMATE EXTENT OF LNAPL
2. ALL SOIL AND LNAPL SAMPLE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).
3. ALL SPLP SAMPLE RESULTS IN MICROGRAMS PER LITER (µg/L). CORRECTED FIELD LEACHATE CONCENTRATIONS WERE CALCULATED WHERE POSSIBLE.

TCA – 1,1,1-Trichloroethane
1,4-D – 1,4-Dioxane
NA – Not Analyzed
J – Estimated Value
[] - Sample Interval

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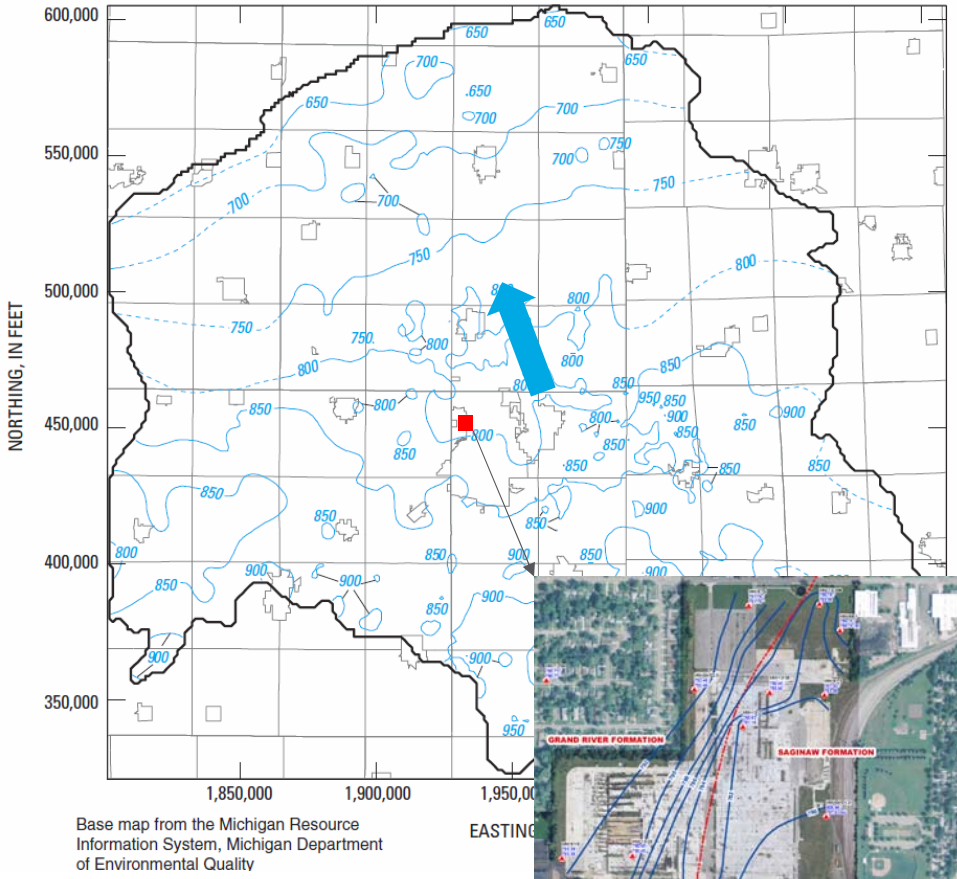
Regional 1,4-Dioxane

USGS CSM / Assumptions

Use USGS model as a basis for several analysis to evaluate flow balance and regional movement of 1,4-dioxane. In general the model assumes:

- Flow in Saginaw aquifer is from south to north. Small amount toward local pumping centers
  - Conflicts with several local studies suggesting southerly flow
- Flow between aquifers in the glacial deposits and the Saginaw Formation is limited where confining units (i.e. lower till unit, upper shale unit) present.
- Groundwater discharges locally from bedrock to the glacial deposits in the valleys of major streams.
  - Conflicts with two studies around Grand River
  - Recharge from River not mentioned
- Extensive confining shale units limit vertical movement between sandstone in some areas within the Saginaw Formation
- Groundwater is confined in the Saginaw aquifer except near Grand Ledge where the Saginaw Formation outcrops along Grand River.



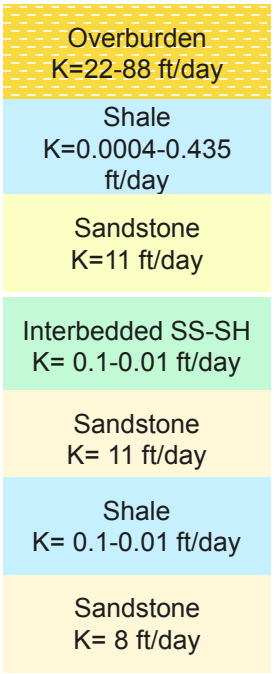
USGS Model Input Parameters

The 2009 model includes:

- Grid refinement
- 3 layer unconsolidated
- 6 layer bedrock
  - L4 - Uppermost shale - 0-117' thick
  - L5 - Sandstone unit – 0-130'
  - L6 - Interbedded SH-SS unit – 0-158'
  - L7 - Sandstone unit – 0-154'
  - L8 - Shale unit – 0-150'
  - L9 - Lower Sandstone – 0-200'
- Flow into and out of river cells governed by
  - stream stage
  - simulated head in river cell
  - conductance of streambed material

Model Extent:	3,500 mi^2
Grid Cell Size:	660 X 660' (center) 1330 X 1330' (edges)
Recharge Rates:	Steady State: 6.7 in/yr Transient: variable % of 30 in/yr
Conductivity (glacial):	22-88 ft/d
Streambed	2.3 ft/d
Conductivity (bedrock):	
Layer 4 (upper confining):	0.0004 to 0.435 ft/d
Layer 6 & 8 (middle confining):	0.1 to 0.01 ft/day
Layers 5, 7 (aquifer):	11 ft/d
Layer 9 (aquifer):	8 ft/d
Vertical Conductivity	0.1 X Hz
Pumping rates (2005)	46 MGD

Vertical conductivity contrast of 1 order of magnitude

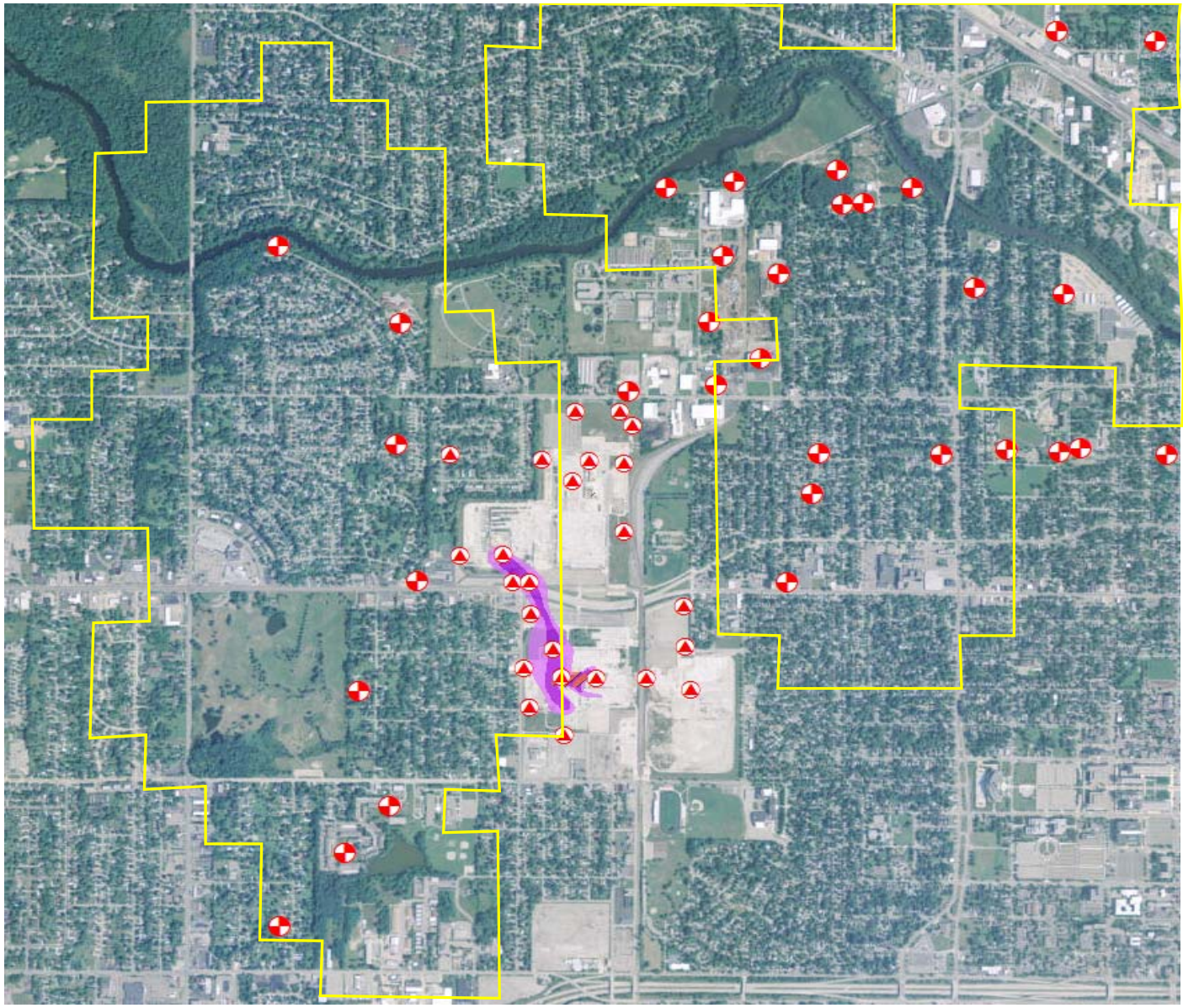


10-Year Travel Times

WHPAs are a simplified version of the 10-yr travel times

- based on particle tracking model

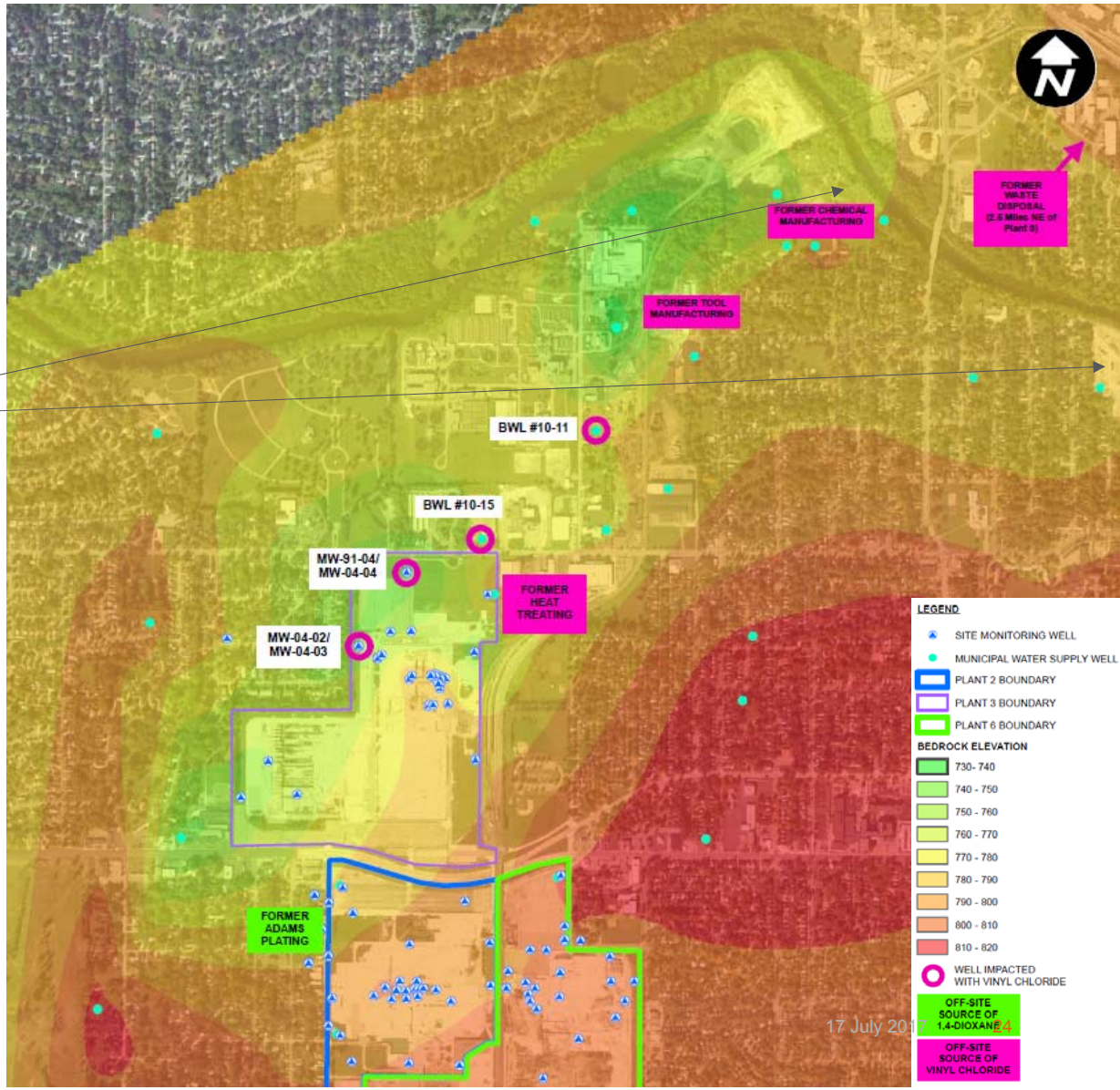
Includes large sections of the Grand River and are likely mining water



Regional Bedrock Conditions

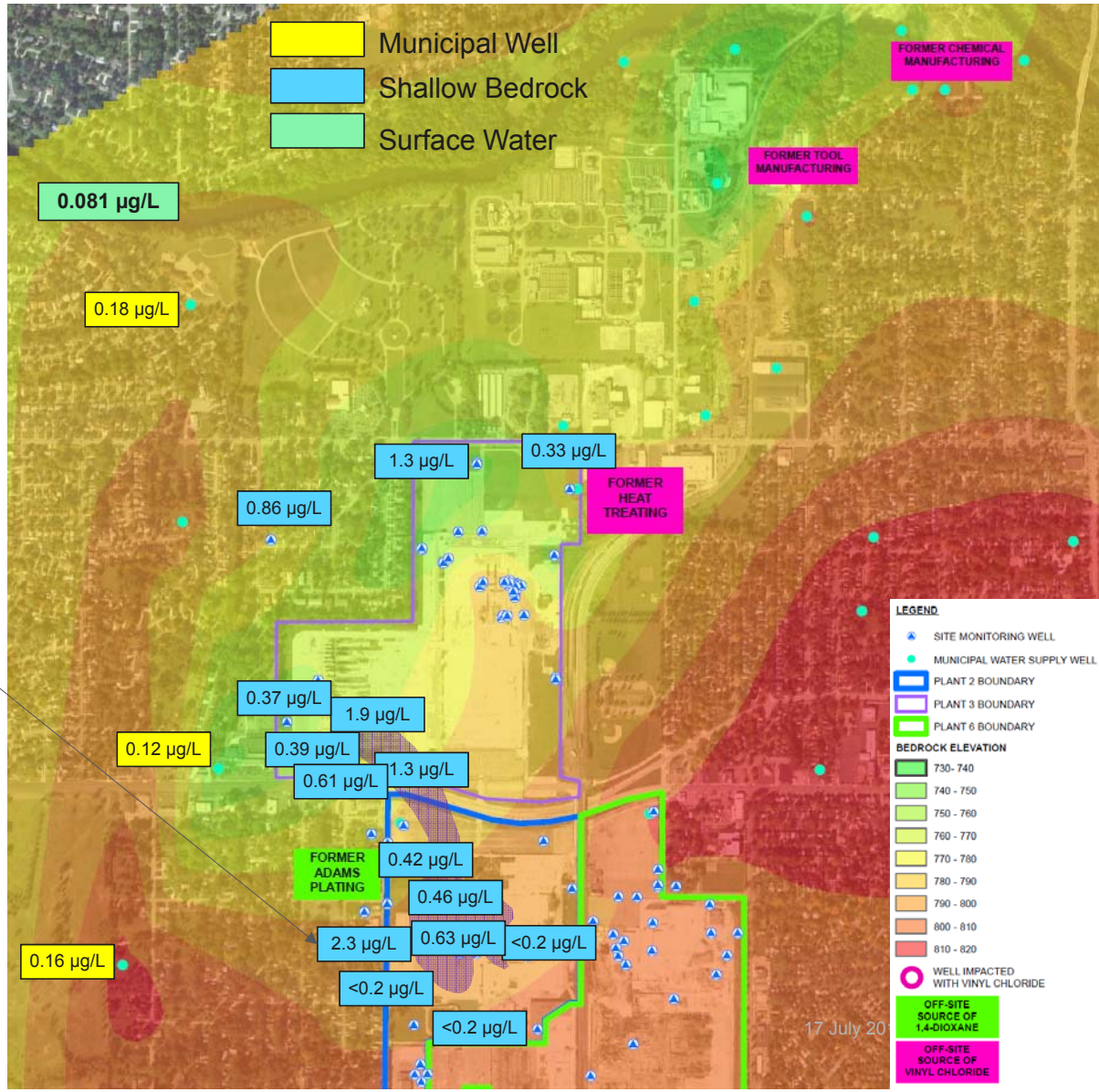
Bedrock valley present with higher permeability Grand River Formation

- Other sites to the north indicate direct recharge from river to unconsolidated and bedrock aquifers with SW flow in bedrock
- Valley ideal for surface water recharge and preferential migration in bedrock
- FOIA data and distribution of VC suggest support southwesterly in bedrock away from the river
  - VC impacts observed in valley associated with upgradient (NE) source areas
- Supported by distribution of 1,4-dioxane in bedrock



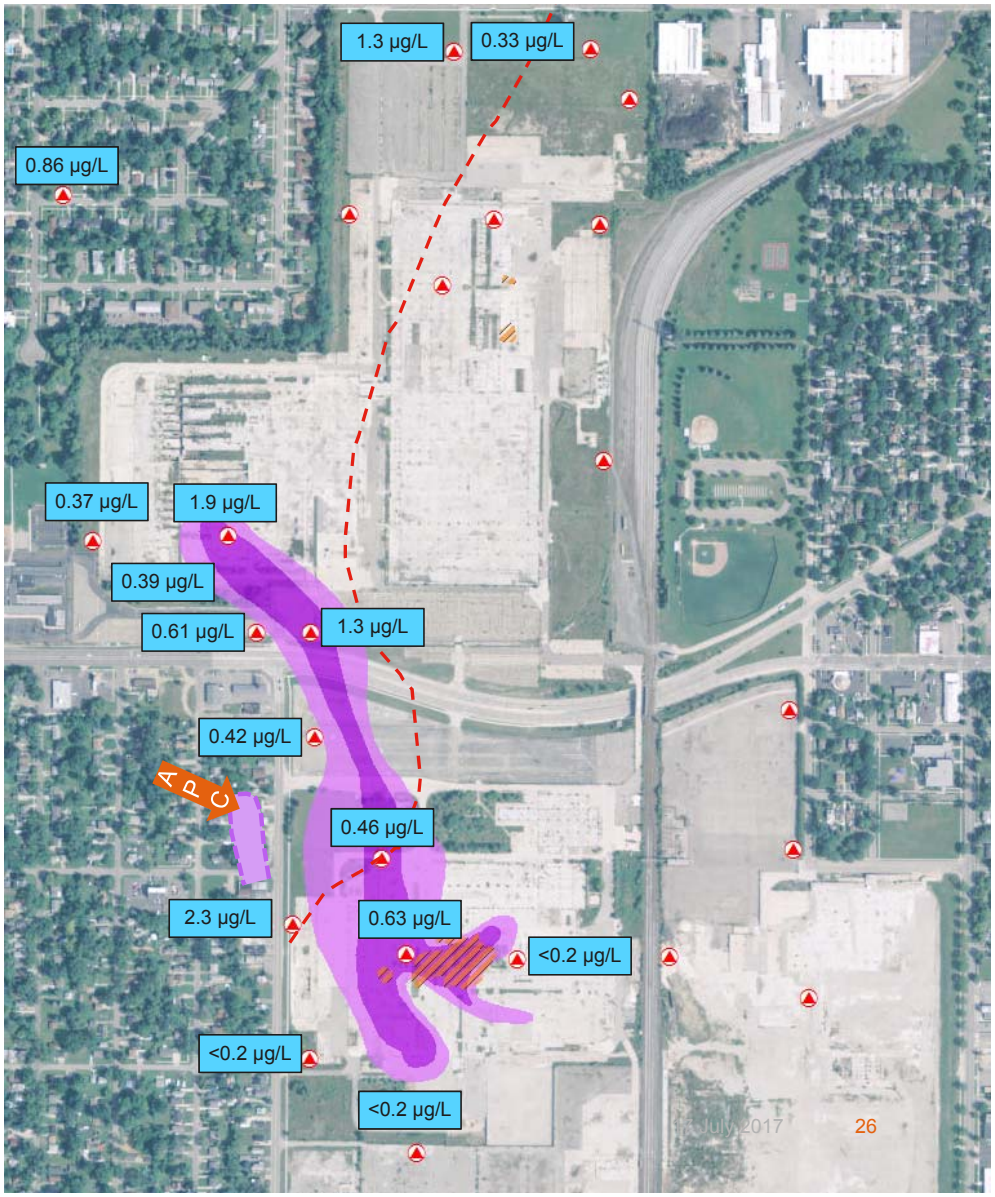
Regional 1,4-Dioxane

- Higher concentrations on northern Plant 3 downgradient of several sources of CVOCs
  - Other sources not characterized for 1,4-d
- Highest concentration in bedrock observed downgradient of APC
- Grand River (high flow) ND to south, low-level (0.081 µg/L) to north
  - Suggest surface water source to municipal wells



Low-level 1,4-D in Bedrock Monitoring Wells

- Generally higher in Grand River Formation / lower in Saginaw Formation
  - Less vertical anisotropy
  - Exception MW-17-87, downgradient of APC
- Confirms delineation to 7.2 µg/L, decreases by order of magnitude away from core



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Cross Section 1

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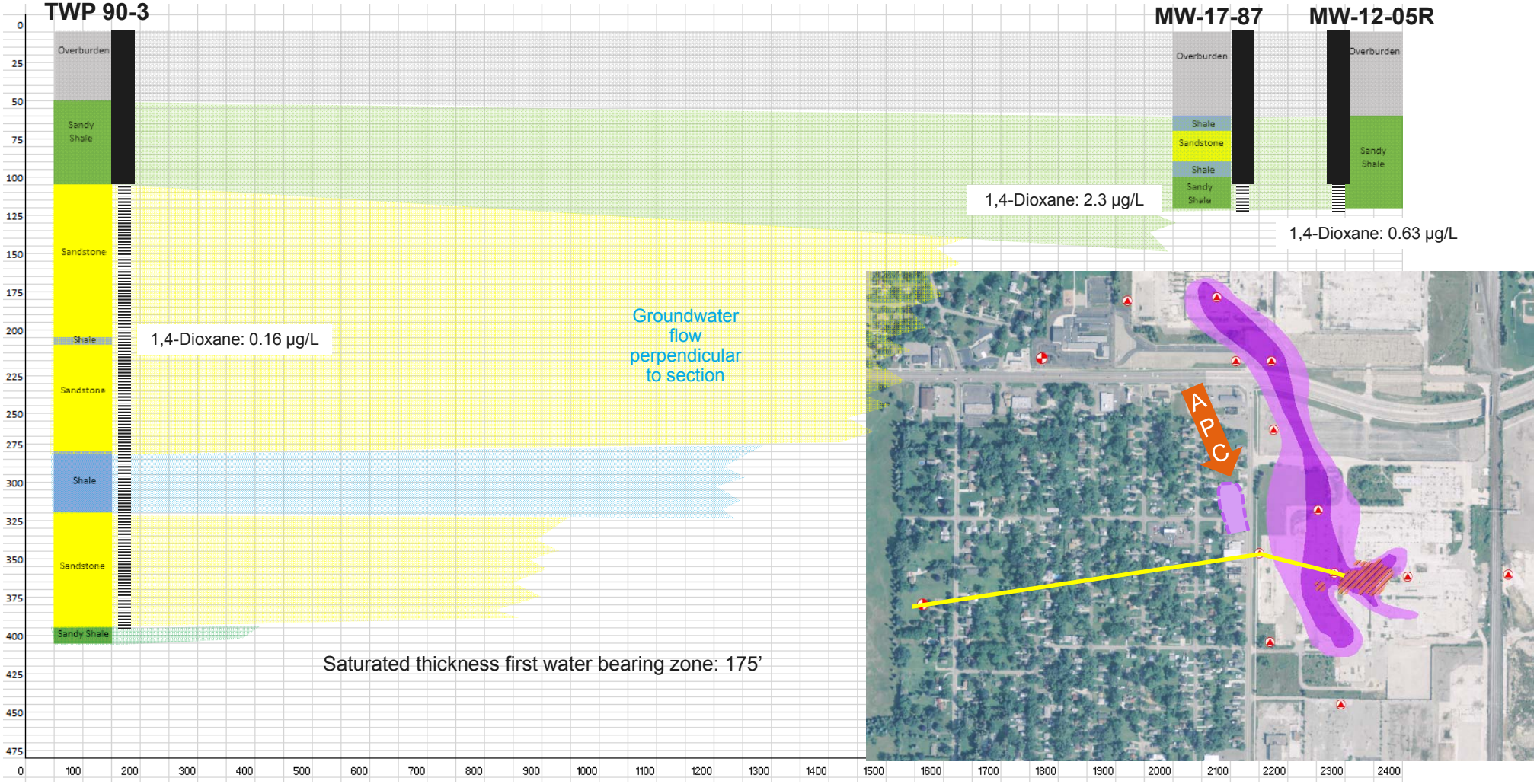
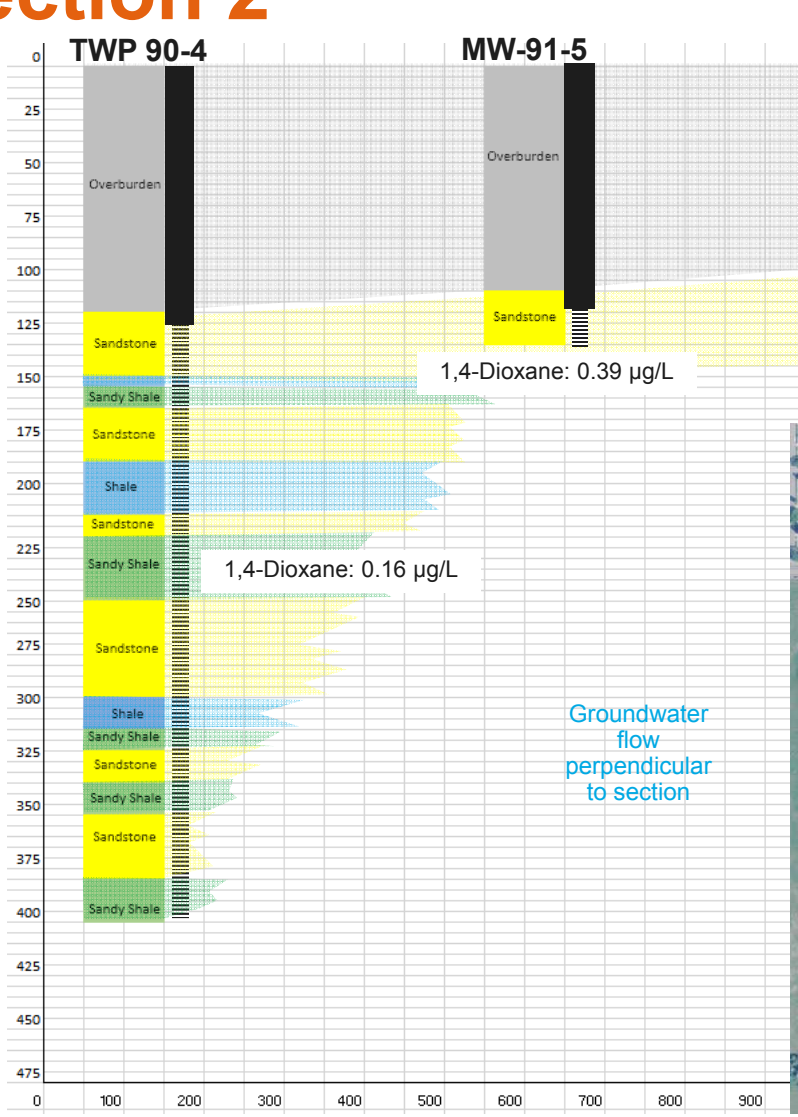
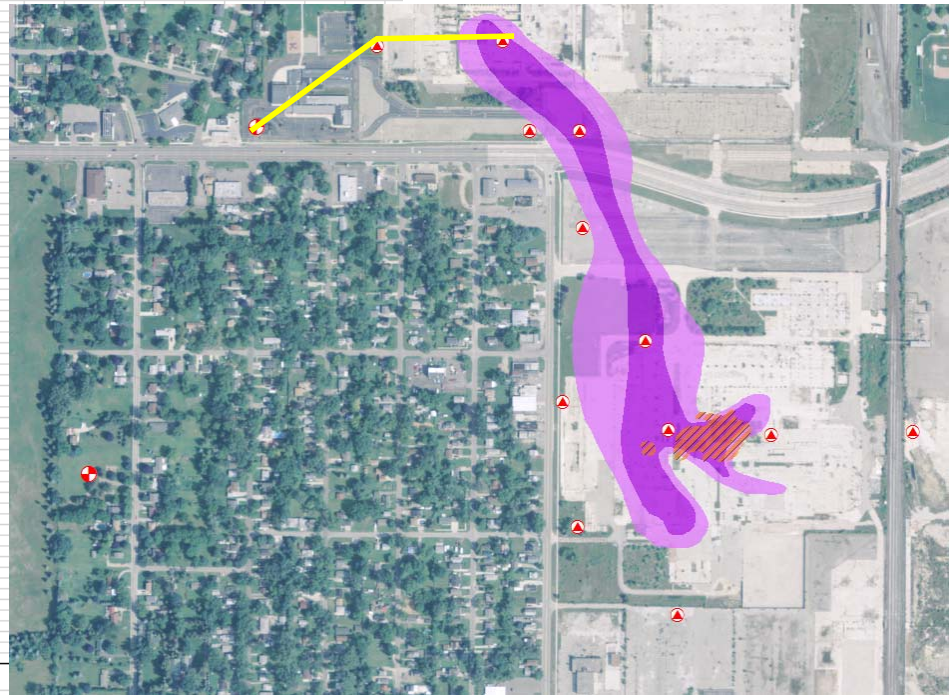


Cross Section 2





Draft – For Discussion Purposes Only

Theoretical Attenuation Factors

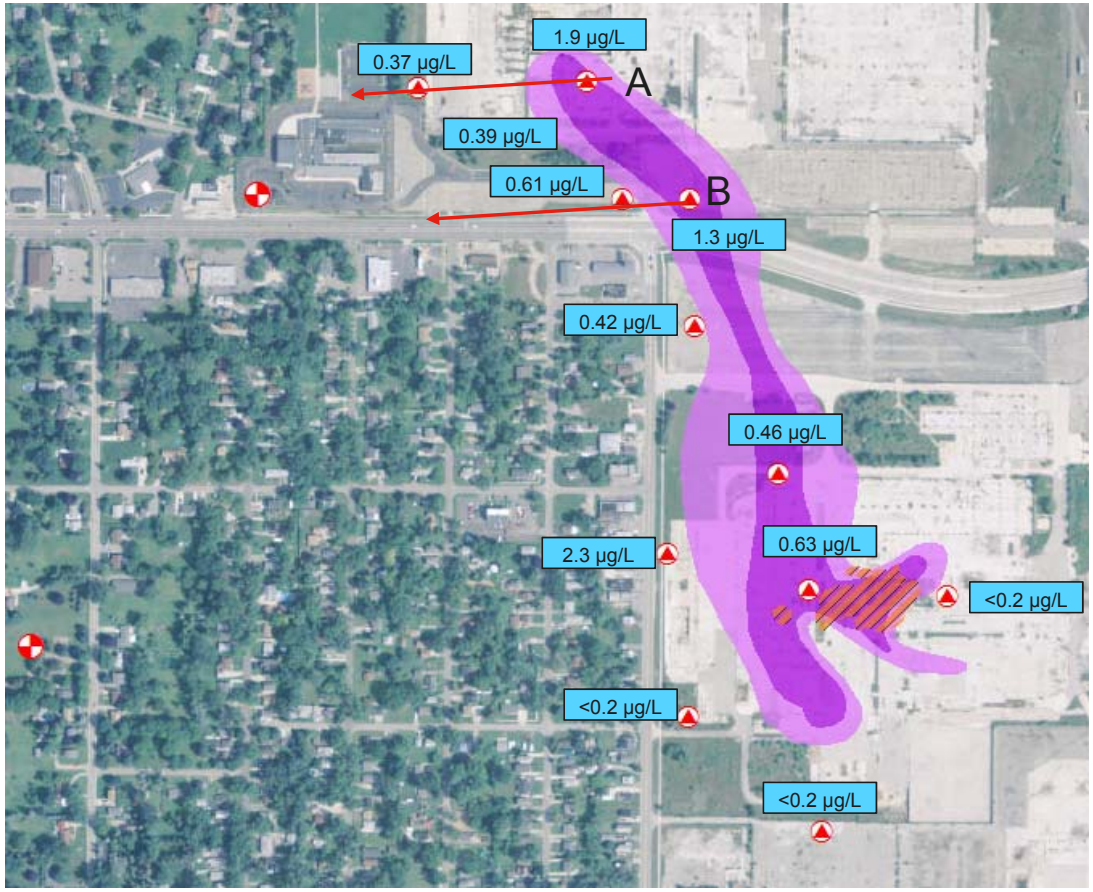
Theoretical attenuation away from the core of the lower 1,4-dioxane plume based on advection/diffusion.

Linear

- Transect A: d = 550', ΔC=1.5 µg/L
  - 1.5/550 = 0.003 µg/L per foot
  - C in WB near TWP-4: 0.37-(630*0.003) = **-1.5 µg/L**
- Transect B: d=220', ΔC=0.69 µg/L
  - 0.69 / 220 = 0.003 µg/L per foot
  - C in WB near TWP-4: 0.61-(1190*0.003) = **-3.0 µg/L**

Exponential

- Transect A:
  - $C_{pw} = C_0*\exp(-kt)=1.9*\exp(-0.00131*2954)$ = **0.04 µg/L**
- Transect B:
  - C_{pw} = 1.3*exp(-0.00111*3636) = **0.02 µg/L**



Based on CSM, concentrations would not be detectable at municipal well

29

Horizontal Bedrock Flux

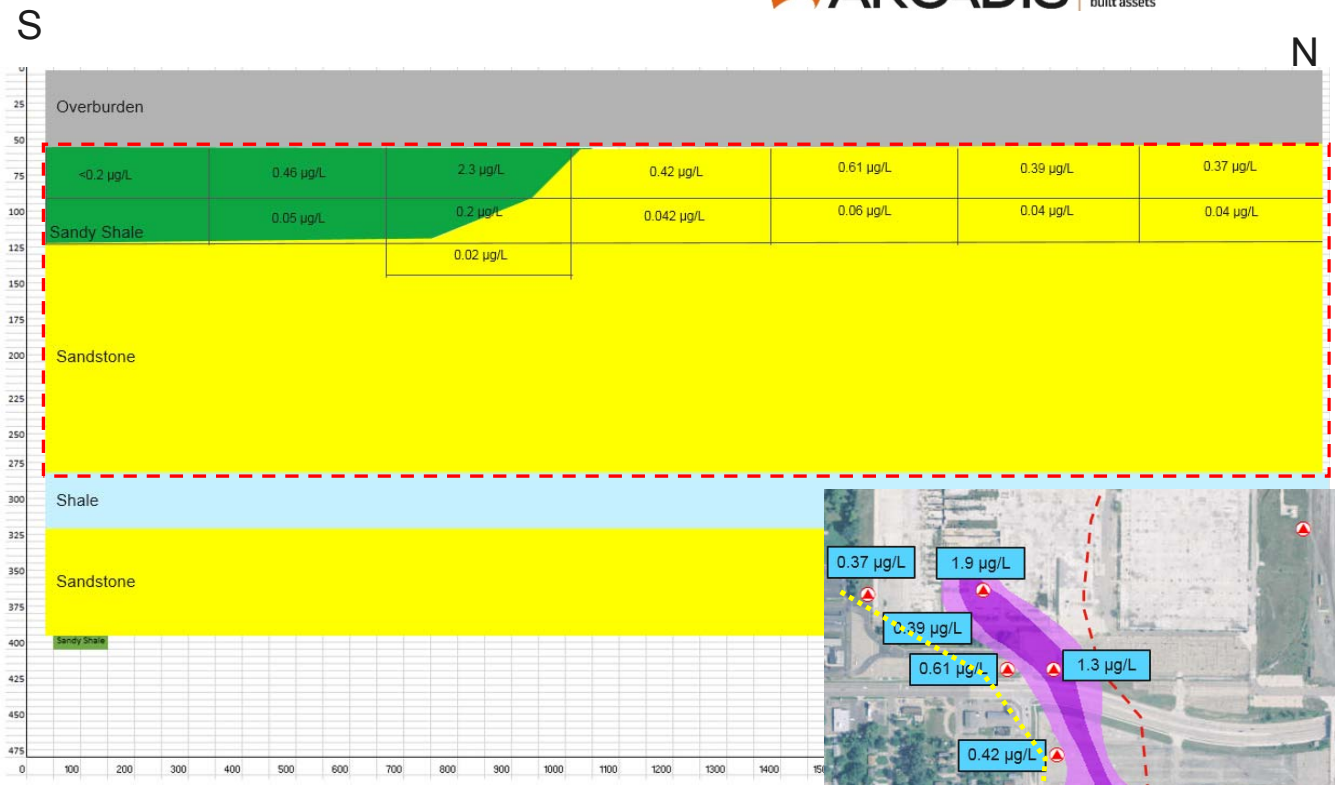
IF, and as worst case, horizontal flow in the shallow bedrock was due west:

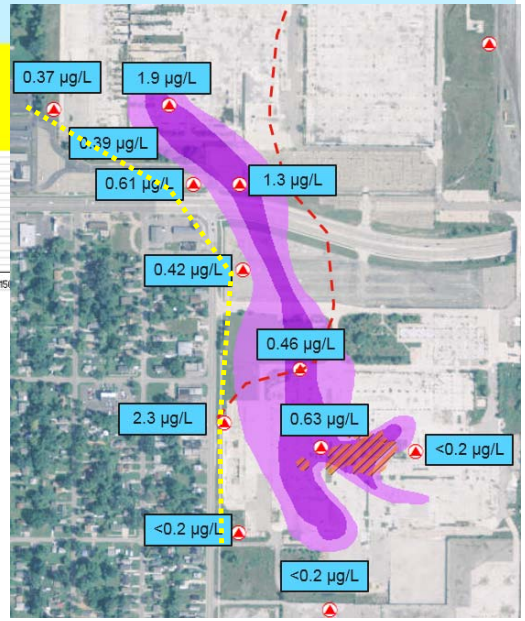
Assume

- One order of magnitude decrease in concentration every 25' depth
- i = 0.002
- K = 11 ft/day (constant)
- C=Concentration
- Evaluating first sandstone unit only (b=225')
- Cross-sectional area: 540,000 ft^2
- Mass Flux = J = K i C
- Mass Discharge = M_d = J A

Total Groundwater Flux through cross-section :

- Discharge (Q) = K i A = 11 * 0.002 *540,000 = 11,900 ft^3/day = 88,900 gal/d = 62 gpm (235 L/min)





Mass Discharge (g/day)				Assume 25 X 340' blocks		
0	8.6E-05	0.00043	1.1E-05	0.00011	7.3E-05	0.00006919
0	9.4E-06	3.7E-05	7.9E-06	1.1E-05	7.5E-06	0.00000748
0	0	3.7E-06	0	0	0	0

Mass Discharge: 0.0009 g/d

Horizontal Bedrock Flux

IF, and as worst case, horizontal flow in the shallow bedrock was due west:

Theoretical average concentration leaving Site:

0.0009 g/d = 0.625 µg/min

62 gpm = 235 L/min

0.625 µg/min / 235 L/min = **0.003 µg/L**

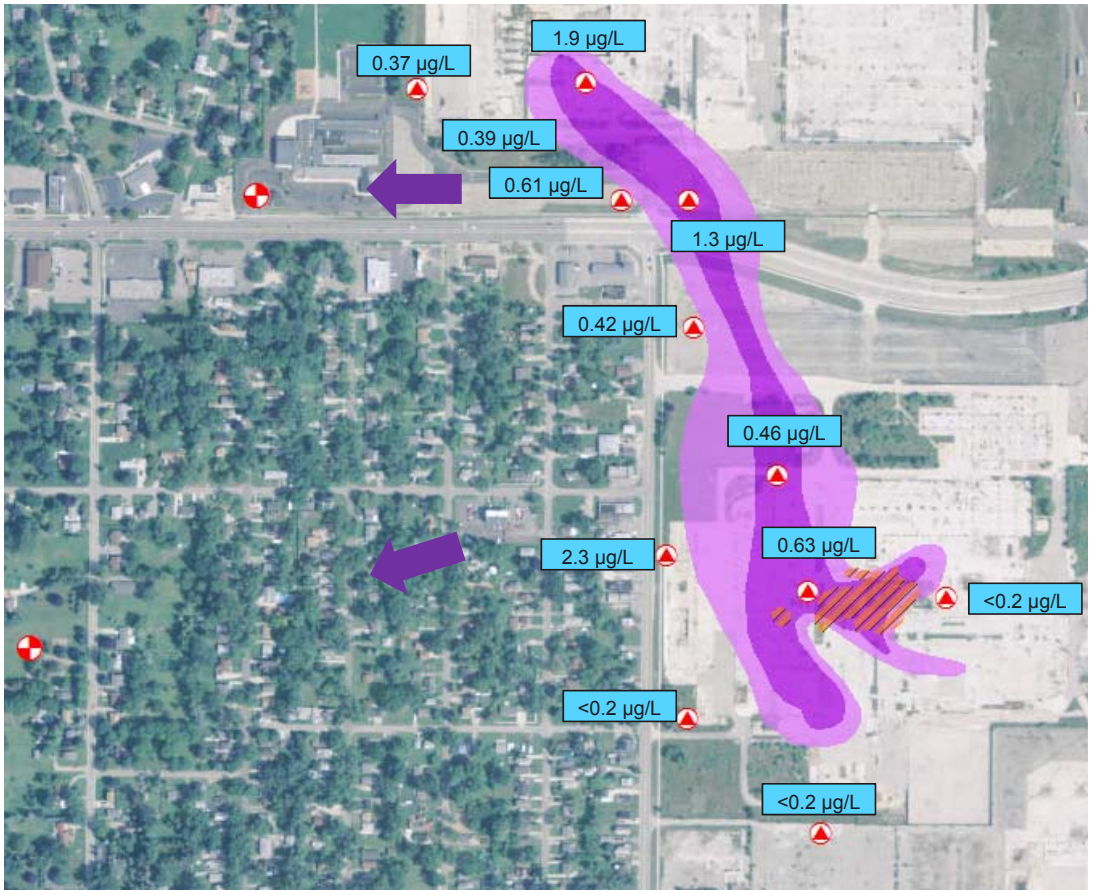
Theoretical concentration at pumping wells assuming:

- Full capture
- No attenuation
- Municipal wells operating at 350 gpm each (700 gpm total)

Ratio of groundwater discharge to municipal pumping rates at wells: 62 / 700 = 0.09

Theoretical concentration at pumping wells resulting from theoretical RACER mass discharge:

0.09 * 0.003 µg/L = **0.0003 µg/L**



Using conservative assumptions, 1,4-dioxane theoretically captured by municipal wells not detectable

Regional 1,4-D Summary

- Based on plume attenuation, as well as conservative estimates of contaminant flux that could theoretically originate from the RACER site, it is not possible for the RACER site to account for the concentrations observed at the municipal wells
  - Several potential sources of 1,4-dioxane contributing mass locally
  - Recharge from the Grand River may also be a source of 1,4-dioxane
  - May also be other regional sources
- Capture of 1,4-dioxane at the Site boundary is unlikely to affect the concentrations of 1,4-dioxane at the municipal wells
- Treatment of on-site 1,4-dioxane mass within weathered bedrock will reduce potential contributions to the bedrock aquifer associated with the RACER Site

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Lower 1,4-Dioxane Biosparge Overview

Full Scale Biosparge Evaluation

- Considered horizontal and vertical sparge wells for full scale biosparge
  - Horizontal wells are implementable, but do not reduce uncertainty in distribution and limit control over performance (one long well screen vs. individual vertical wells)
  - Pilot showed that vertical wells can be successful, but there is uncertainty related to distribution of gases
  - Formation enhancements can be used to create distinct pathways in a controlled manner to distribute gases, reduce uncertainty, and optimize performance.

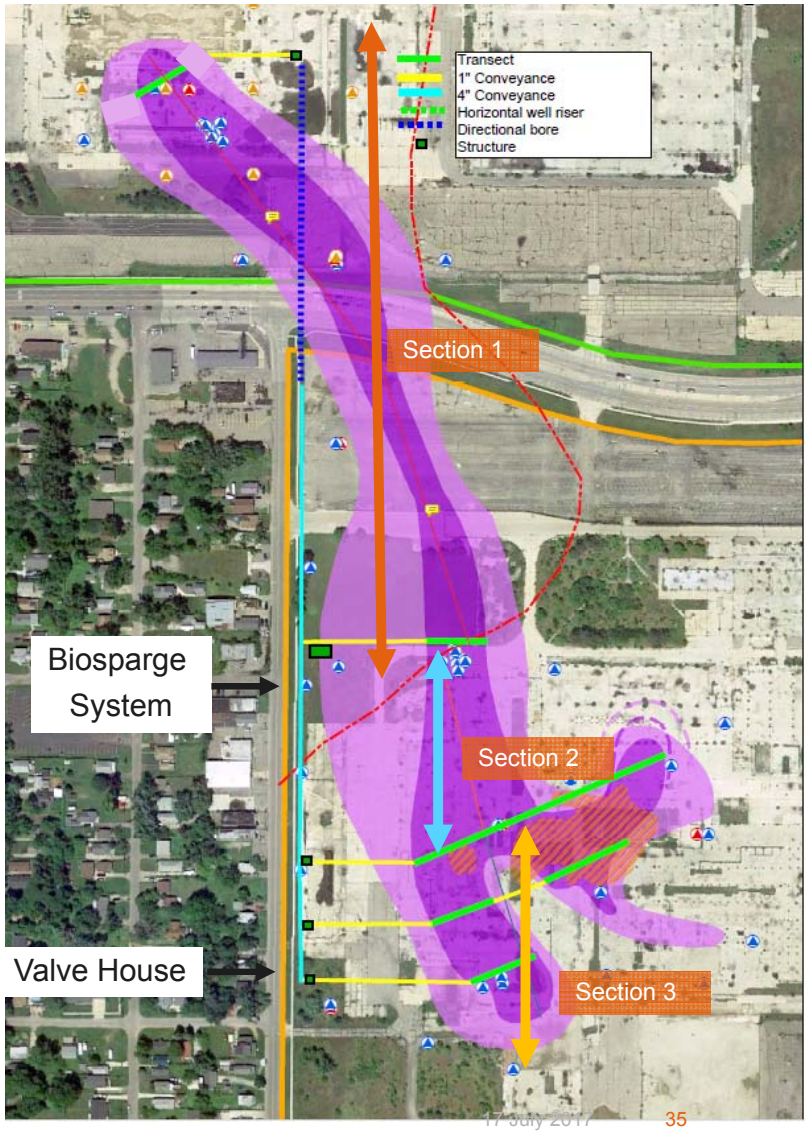
Biosparge utilizing vertical wells with distribution enhancement is expected to be recommended full scale approach based on control of individual wells across a transect that allows to adaptively operate transects. Design Study of enhancement is recommended to confirm design assumptions.

Full Scale Biosparge Remedy

- Installation of ~54 vertical sparge wells with distribution enhancement aligned in transects across plume
- Transect spacing based on a range of hydraulic conductivities and required pore flushes for 3 sections across the plume:

	Section 1	Section 2	Section 3
Groundwater Velocity range (ft./yr)	275 to 518	85 to 265	25 to 54
Required Pore Flushes	1.43	1.43	2.12
Initial Concentration (avg., ppb)	300	300	600
Estimated Timeframe (years)	4.4 to 8.3	2.3 to 7.2	5.6 to 12.2

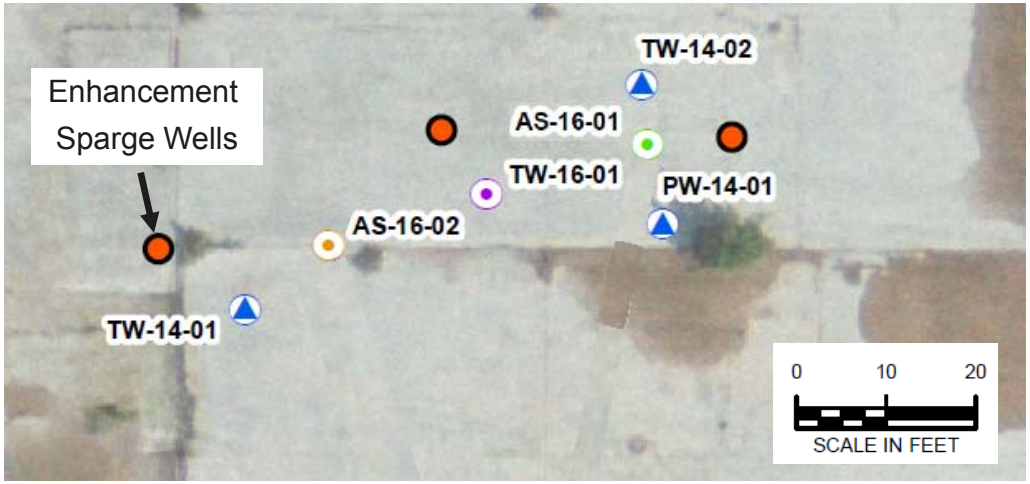
- 30 ft. well spacing within transects (15 ft. ROI)
- Performance monitoring wells every 100 ft. just downgradient of transect
- Injection at ~5 scfm, propane at 15-20% of the LEL and >52 psi
- Bioaugmentation to be completed at startup with allowance for subsequent bioaugmentation

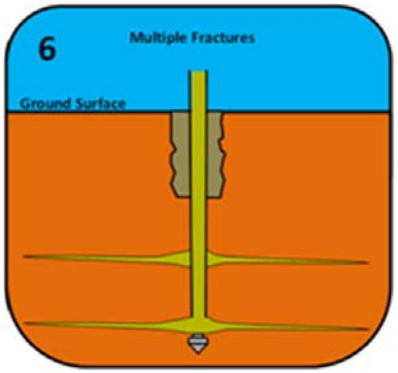


Distribution Enhancement Design Study

Overview

- Distribution enhancement Design Study recommended in 2017 prior to installing full-scale infrastructure to confirm design assumptions and optimize full scale biosparge remedy
- Design Study test sparge wells proposed as part of the southern most full-scale transect
- Up to 3 4-inch enhancement sparge wells
  - Two sand lenses per well, ~5 ft. apart vertically
  - 15 ft. minimum sand lens radius expected
  - Each pilot hole will be fitted with an air sparge screen
- Proposed to operate for 3-4 months to assess the affect of enhancements on gas distribution





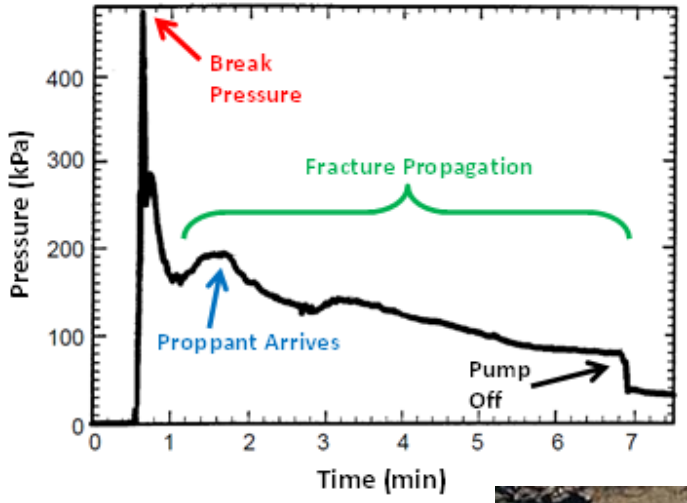
LEGEND

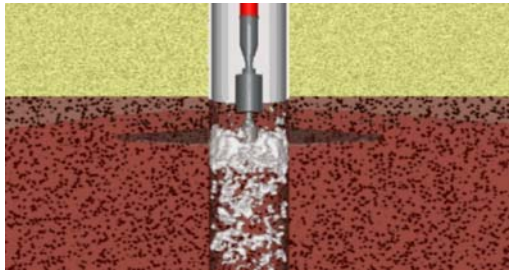
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- PHASE I BIOSPARGE PILOT TEST WELL
- PROPOSED PHASE II BIOSPARGE TEST WELL
- PROPOSED PHASE II MONITORING WELL

Distribution Enhancement Design Study

Drilling Method - FRx

- Borehole installed using sonic drilling, 4” blank casing installed to depth and 2” grouting around casing
- Notching of formation is completed first to reduce pressure required to create enhancement
- Controlled process using hydraulic pressure to inject propant comprised of guar gum and sand mixture
- Pressure is monitored to determine fracture start point
- Guar gum (polysaccharide consisting of galactose and mannose) degrades within 48 hours leaving a planar sand lens

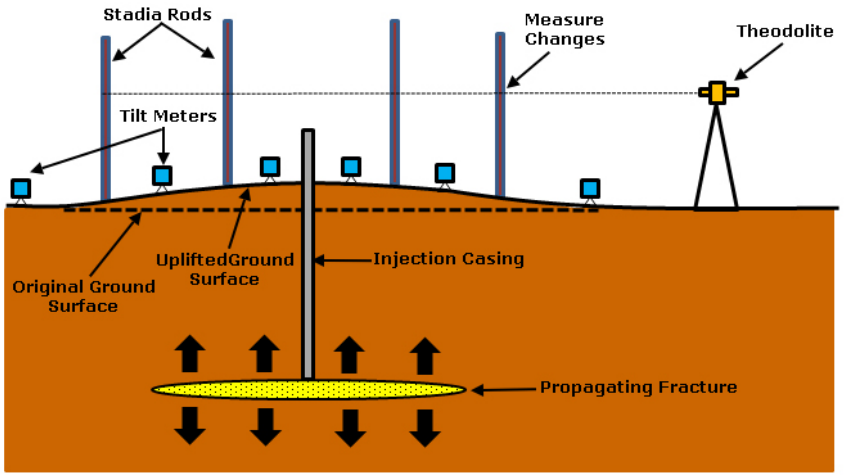


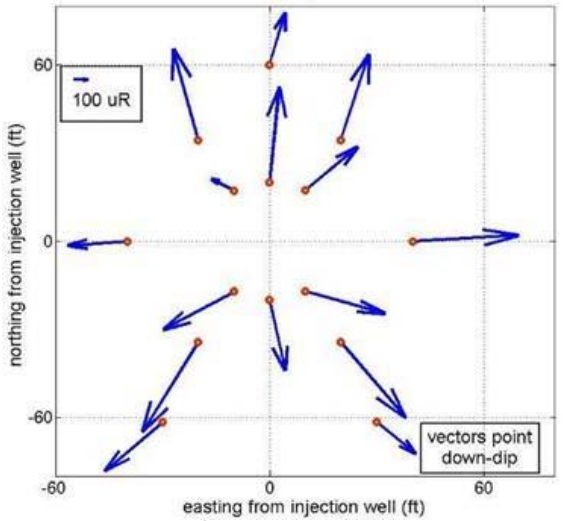


Distribution Enhancement Design Study

Drilling Method - FRx

- Theodolite and Tilt meters detect surface deformation as fracture propagates
- Can resolve mm of lift/km
- Algorithms can resolve shape and attitude of fractures
- Anticipated ROI of 15-30 feet, to be field verified based on volume of injection solution and tilt meters
- Existing nearby monitoring wells used to detect hydraulic response
- Reliable and effective



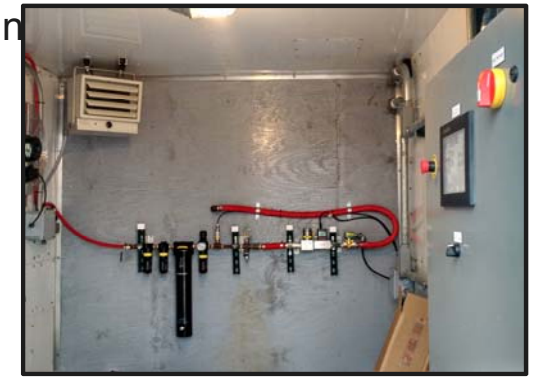


FRX http://frx-inc.com/hydraulic-fracturing/

Distribution Enhancement Design Study

Sparging Operations

- Use of existing biosparge system in current location
  - Upgraded air compressor to increase operational uptime
- 3-4 months of operations
- Bioaugmentation
- Performance monitoring to be completed in Design Study test area and perimeter wells
- Monthly monitoring of 1,4-dioxane and dissolved oxygen to evaluate gas distribution
- As needed monitoring of dissolved propane, nutrients and well head LEL
- Design Study to be completed in parallel with CMS updates



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Reporting

2017 Reporting

Updated RFI Summary Report – September

- Update RFI Report Summary to include summary or results and general conclusions of investigations completed since August 2014
- Maintain comparison to 2013 promulgated Part 201 Criteria
- Include as much PFAS discussion as possible, may require a placeholder

Draft Final CMS – September

- Primary update includes biosparge to address lower 1,4-dioxane impacts
- Include PFAS area and proposed remedy if adequate characterization is available.

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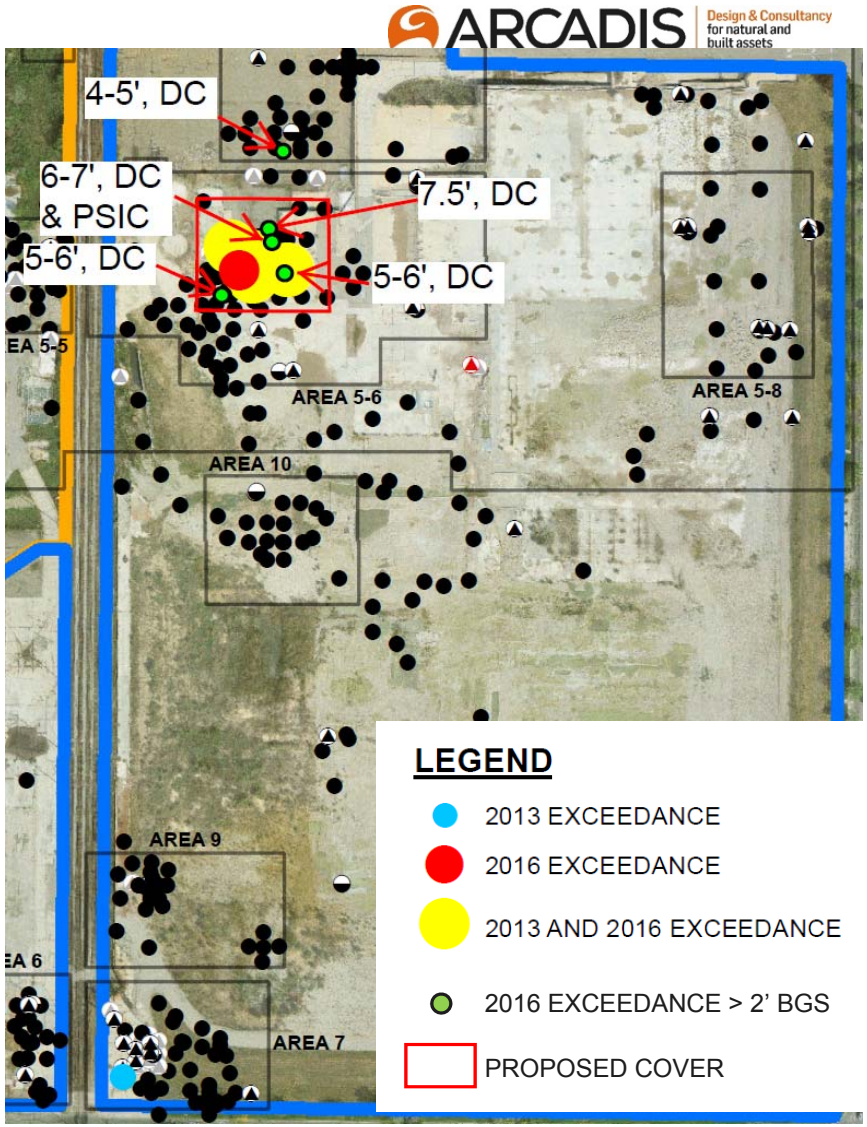
Plant 6 Cover

Plant 6 Exposure Barrier

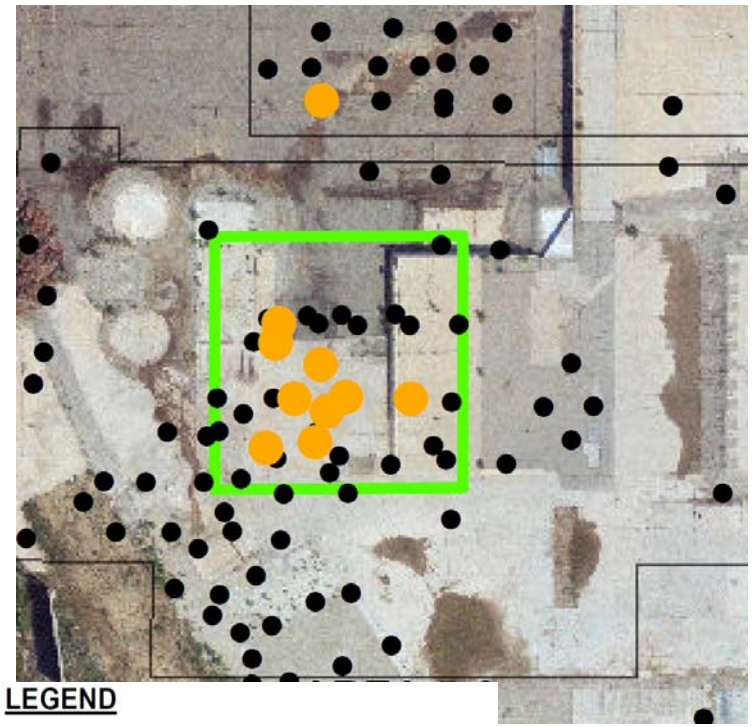
Revised exposure barrier to account for current 2013 and 2016 proposed Part 201 Non-Res DC and PSIC Criteria and deeper impacts

Includes vanadium and lead:

Compound	DC Criteria (µg/kg)	PSIC Criteria (µg/kg)
Lead	7.60E+05	1.10E+07
Vanadium	3.30E+04	7.30E+06



Proposed Exposure Barrier



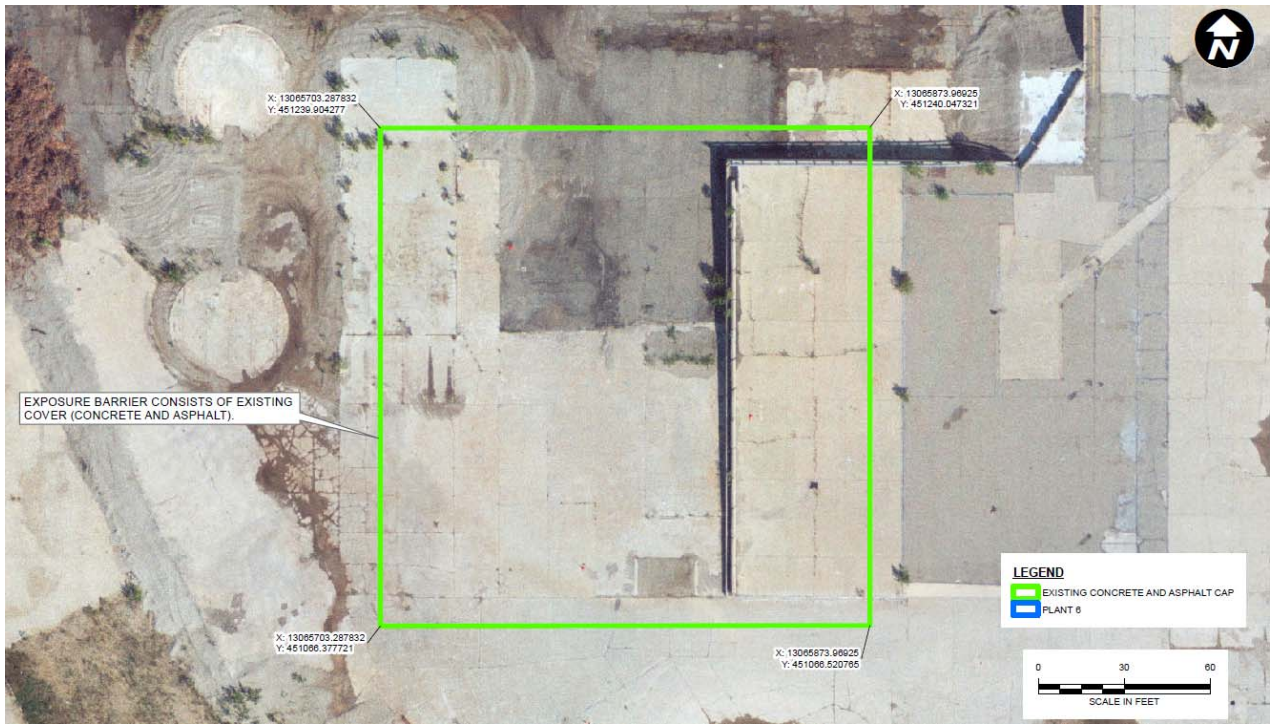
LEGEND

- SOIL DC OR PSIC EXCEEDANCE
- SOIL SAMPLE LOCATIONS BELOW DC AND PSIC CRITERIA

NOTES:

ALL SOIL SAMPLES SHOWN COLLECTED PRIOR TO JULY 2012.

ANALYTICAL COMPARED TO PROPOSED MDEQ 2016 CRITERIA.



- Exposure Barrier consisting of existing concrete and asphalt
- Provide notification in DRC of single exceedance to north
- Place cover over single exceedance in Area 7 for exposure barrier.

Plant 6 Reporting

- Revised DRC with new exhibit
- Revised Plant 6 Cover workplan
- Corrective Action Construction Complete Letter