RACER Lansing RFI-CMS Update

RACER Trust

Plants 2, 3 & 6

Lansing, Michigan

September 4, 2013

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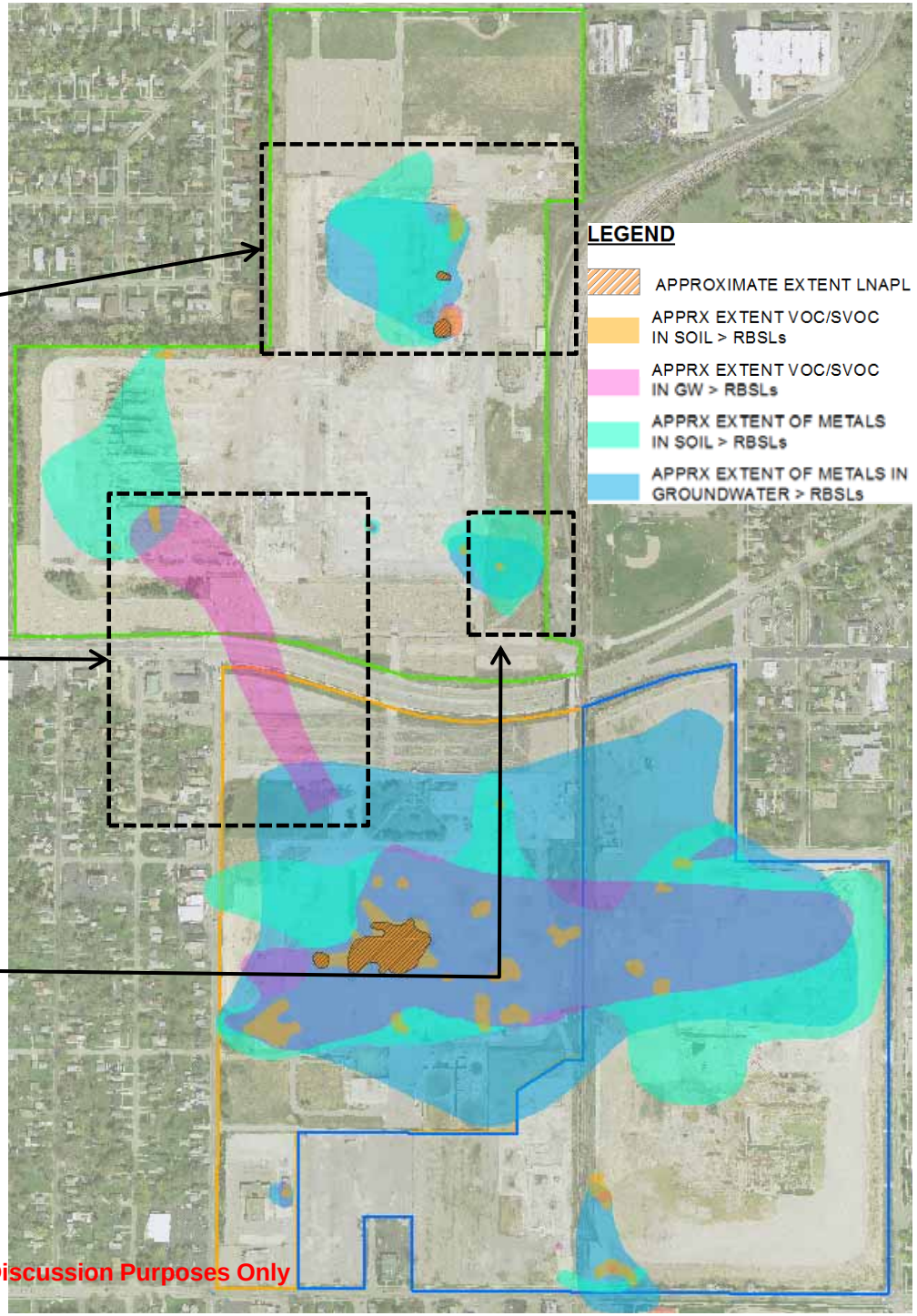
Meeting Agenda

- H&S Moment
- Update on RFI Activities
- Surface Cover / O&M
- BWL Comment Letter
- Updated CMS Costs
- Budget Amendment 3
- Other Items

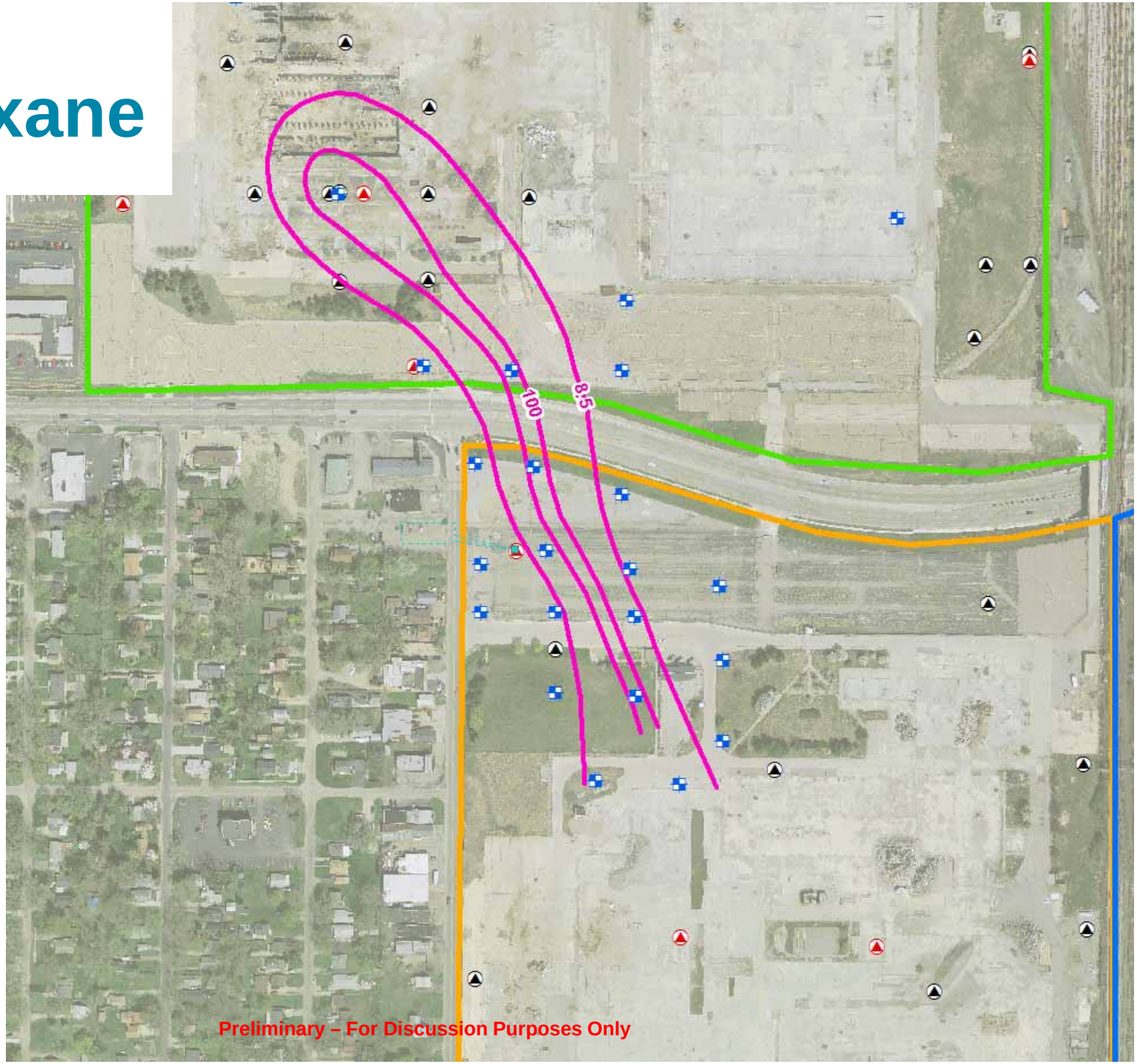
RFI Update

- Northern Plant 3 arsenic in soil
- Deep 1,4-dioxane impacts
- Area 16 metals



Preliminary – For Discussion Purposes Only

Deep 1,4-Dioxane



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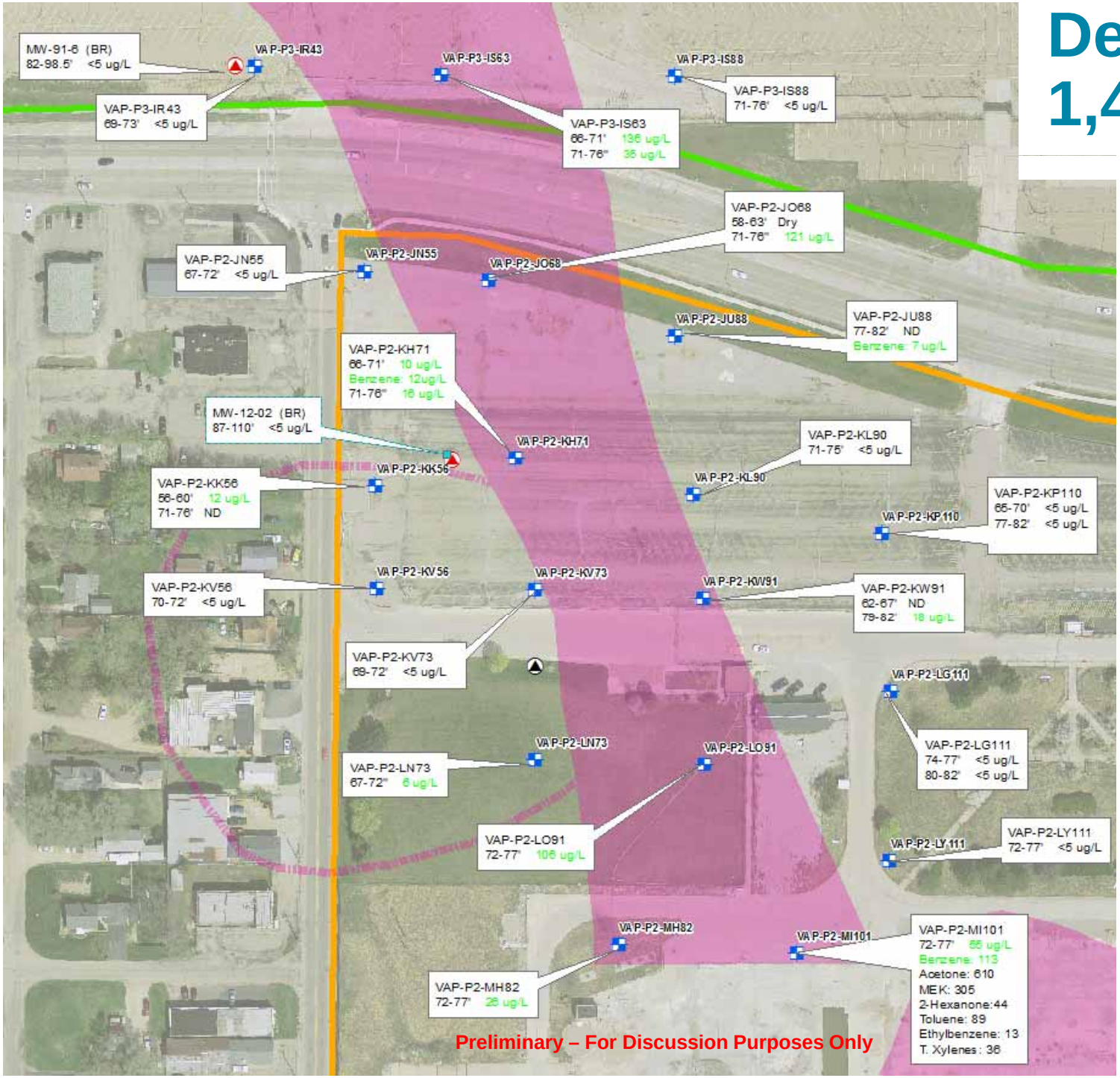

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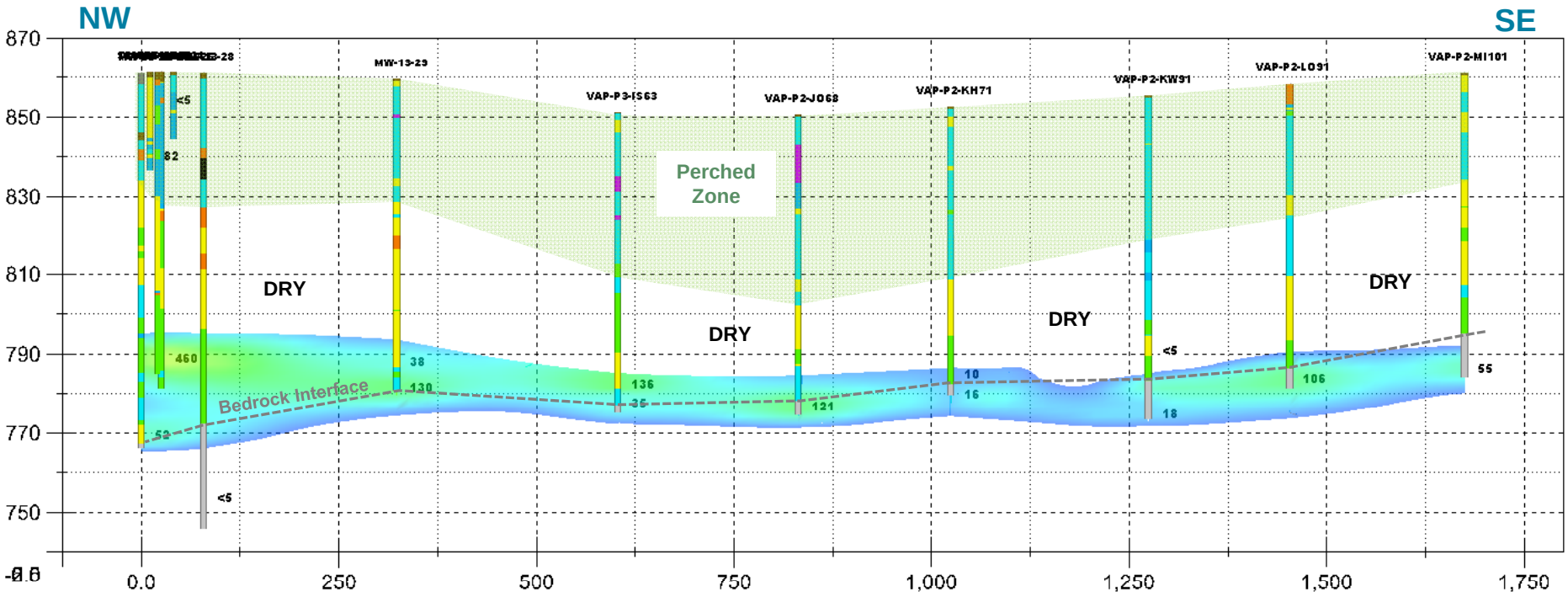
Deep1,4-Dioxane



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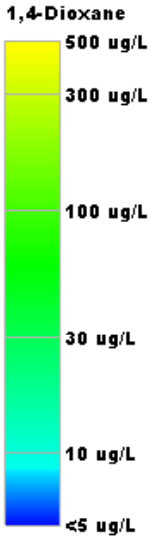

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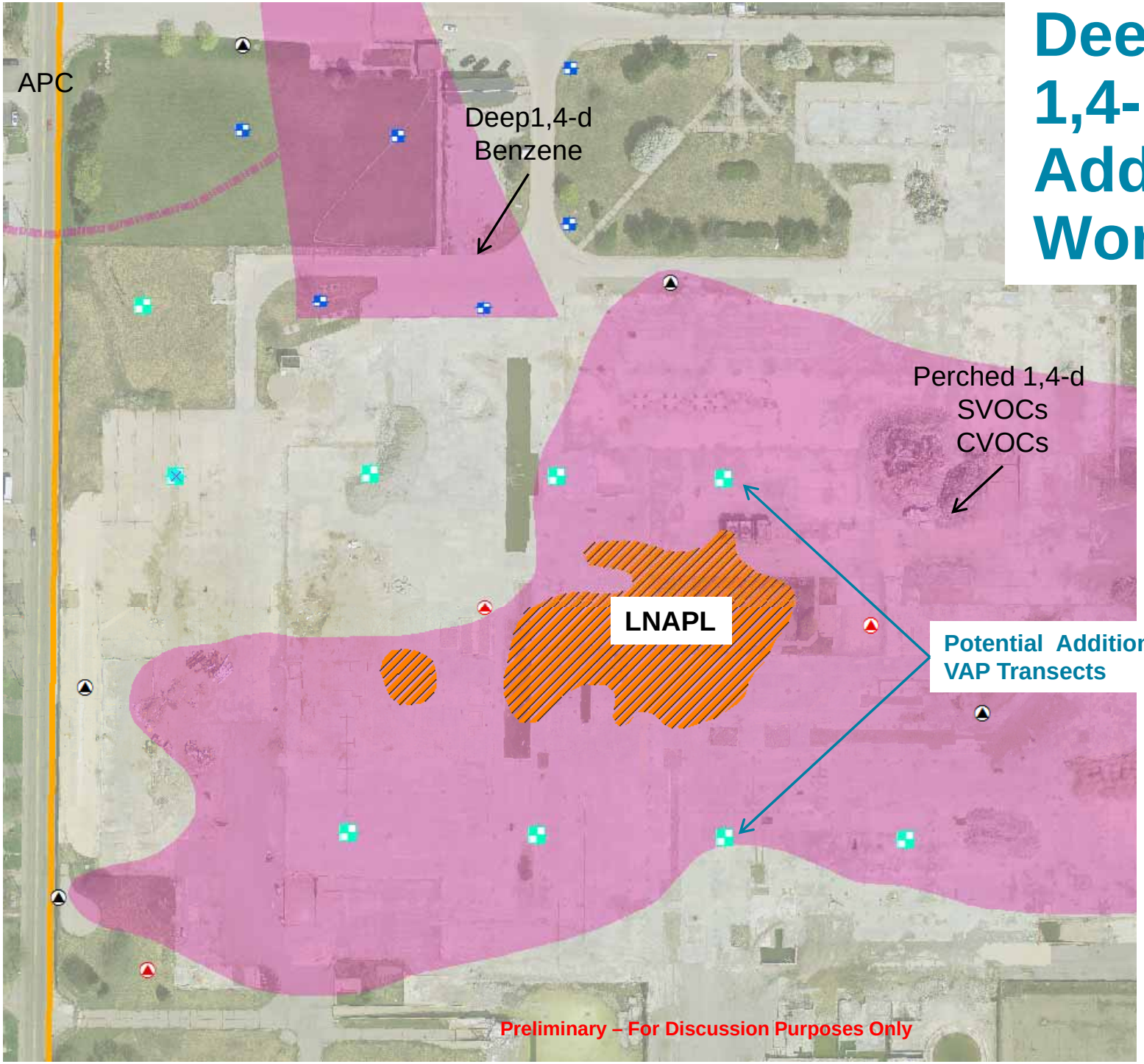
Deep 1,4-Dioxane Additional Work



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Northern Plant 3 Arsenic in Soil

No Arsenic exceedances at confirmation borings

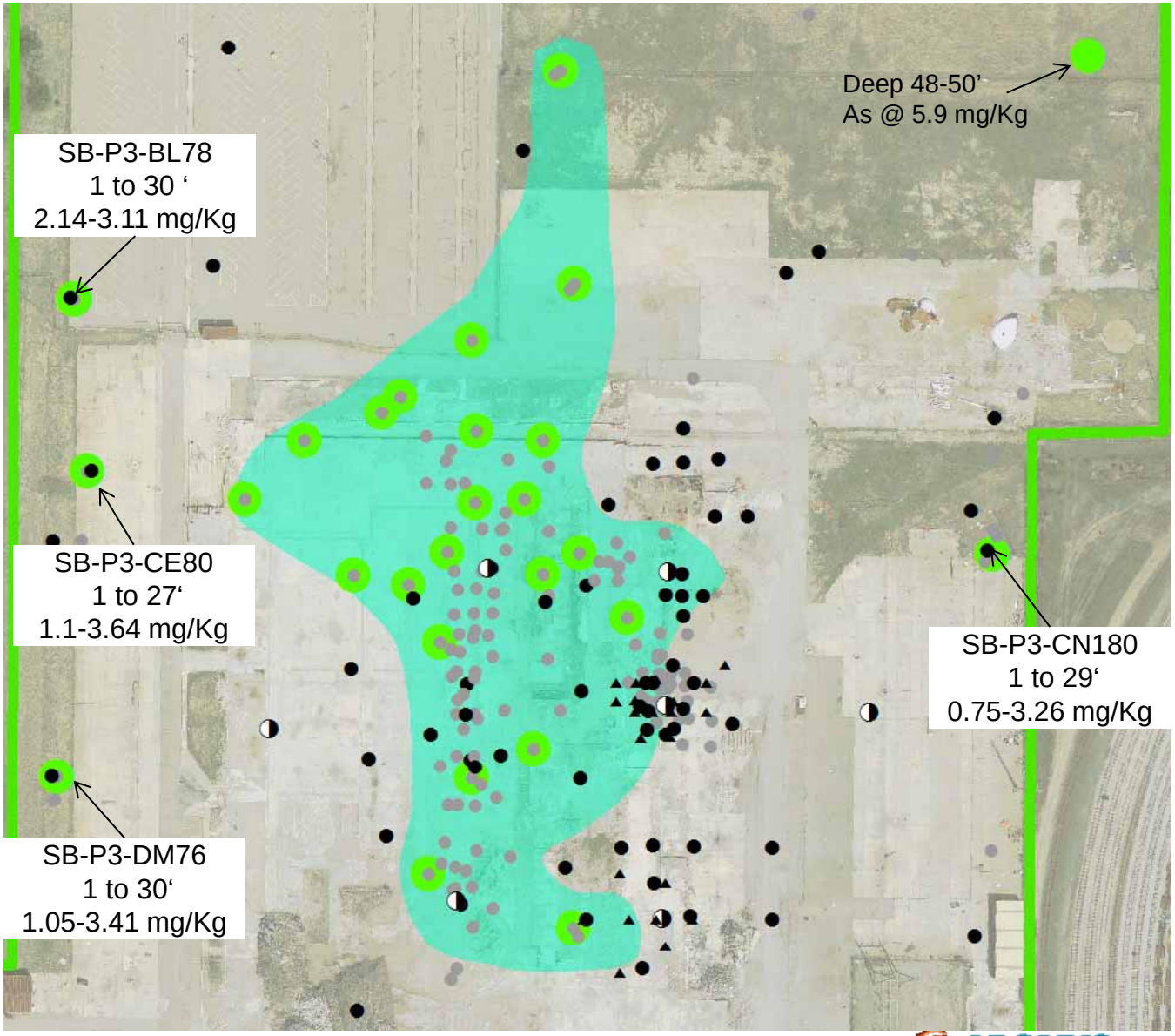
- Soil Boring 2011-2013
- Historical Boring
- Historical Boring with As exceedance

Arsenic Criteria

SB = 5.8 mg/kg

GSIP = 4.6 mg/kg

DWP = 4.6 mg/kg



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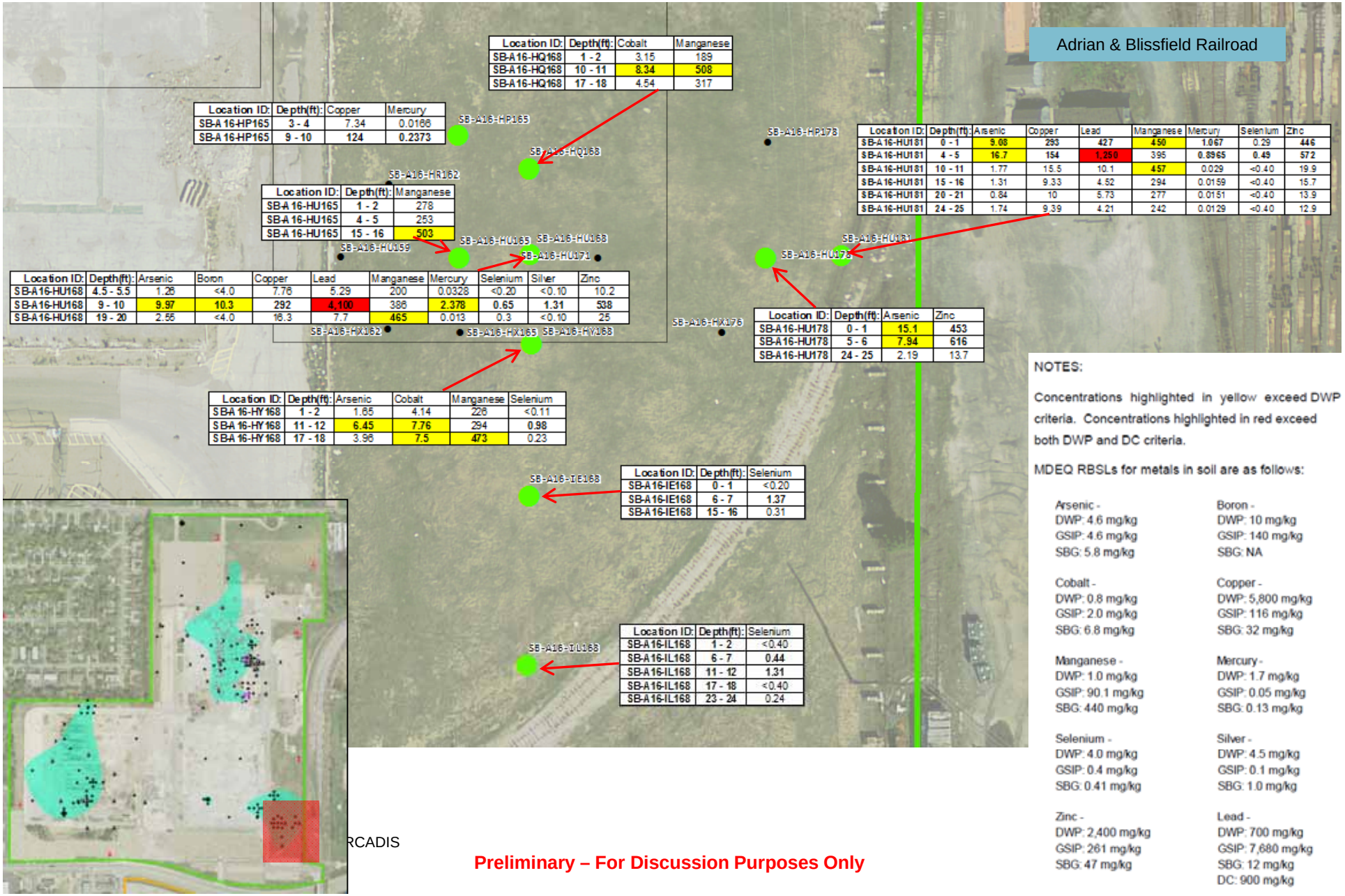
Area 16 Metals



Location ID:	Depth(ft):	Cobalt	Manganese
SB-A16-HQ168	1 - 2	3.15	189
SB-A16-HQ168	10 - 11	8.34	508
SB-A16-HQ168	17 - 18	4.54	317

Location ID:	Depth(ft):	Copper	Mercury
SB-A16-HP165	3 - 4	7.34	0.0166
SB-A16-HP165	9 - 10	124	0.2373

Location ID:	Depth(ft):	Manganese
SB-A16-HU165	1 - 2	278
SB-A16-HU165	4 - 5	253
SB-A16-HU165	15 - 16	503

Location ID:	Depth(ft):	Arsenic	Boron	Copper	Lead	Manganese	Mercury	Selenium	Silver	Zinc
SB-A16-HU168	4.5 - 5.5	1.26	<4.0	7.76	5.29	200	0.0328	<0.20	<0.10	10.2
SB-A16-HU168	9 - 10	9.97	10.3	292	4,100	386	2.378	0.65	1.31	538
SB-A16-HU168	19 - 20	2.55	<4.0	16.3	7.7	465	0.013	0.3	<0.10	25

Location ID:	Depth(ft):	Arsenic	Copper	Lead	Manganese	Mercury	Selenium	Zinc
SB-A16-HU181	0 - 1	9.68	293	427	450	1.067	0.29	446
SB-A16-HU181	4 - 5	16.7	154	1,250	395	0.8965	0.49	572
SB-A16-HU181	10 - 11	1.77	15.5	10.1	457	0.029	<0.40	19.9
SB-A16-HU181	15 - 16	1.31	9.33	4.52	294	0.0159	<0.40	15.7
SB-A16-HU181	20 - 21	0.84	10	5.73	277	0.0151	<0.40	13.9
SB-A16-HU181	24 - 25	1.74	9.39	4.21	242	0.0129	<0.40	12.9

Location ID:	Depth(ft):	Arsenic	Zinc
SB-A16-HU178	0 - 1	15.1	453
SB-A16-HU178	5 - 6	7.94	616
SB-A16-HU178	24 - 25	2.19	13.7

Location ID:	Depth(ft):	Arsenic	Cobalt	Manganese	Selenium
SB-A16-HY168	1 - 2	1.65	4.14	226	<0.11
SB-A16-HY168	11 - 12	6.45	7.76	294	0.98
SB-A16-HY168	17 - 18	3.96	7.5	473	0.23

Location ID:	Depth(ft):	Selenium
SB-A16-IE168	0 - 1	<0.20
SB-A16-IE168	6 - 7	1.37
SB-A16-IE168	15 - 16	0.31

Location ID:	Depth(ft):	Selenium
SB-A16-IL168	1 - 2	<0.40
SB-A16-IL168	6 - 7	0.44
SB-A16-IL168	11 - 12	1.31
SB-A16-IL168	17 - 18	<0.40
SB-A16-IL168	23 - 24	0.24

NOTES:

Concentrations highlighted in yellow exceed DWP criteria. Concentrations highlighted in red exceed both DWP and DC criteria.

MDEQ RBSLs for metals in soil are as follows:

Arsenic -
DWP: 4.6 mg/kg
GSIP: 4.6 mg/kg
SBG: 5.8 mg/kg

Boron -
DWP: 10 mg/kg
GSIP: 140 mg/kg
SBG: NA

Cobalt -
DWP: 0.8 mg/kg
GSIP: 2.0 mg/kg
SBG: 6.8 mg/kg

Copper -
DWP: 5,800 mg/kg
GSIP: 116 mg/kg
SBG: 32 mg/kg

Manganese -
DWP: 1.0 mg/kg
GSIP: 90.1 mg/kg
SBG: 440 mg/kg

Mercury -
DWP: 1.7 mg/kg
GSIP: 0.05 mg/kg
SBG: 0.13 mg/kg

Selenium -
DWP: 4.0 mg/kg
GSIP: 0.4 mg/kg
SBG: 0.41 mg/kg

Silver -
DWP: 4.5 mg/kg
GSIP: 0.1 mg/kg
SBG: 1.0 mg/kg

Zinc -
DWP: 2,400 mg/kg
GSIP: 261 mg/kg
SBG: 47 mg/kg

Lead -
DWP: 700 mg/kg
GSIP: 7,680 mg/kg
SBG: 12 mg/kg
DC: 900 mg/kg

Preliminary – For Discussion Purposes Only

Area 16 Metals

- Wells sampled, results pending

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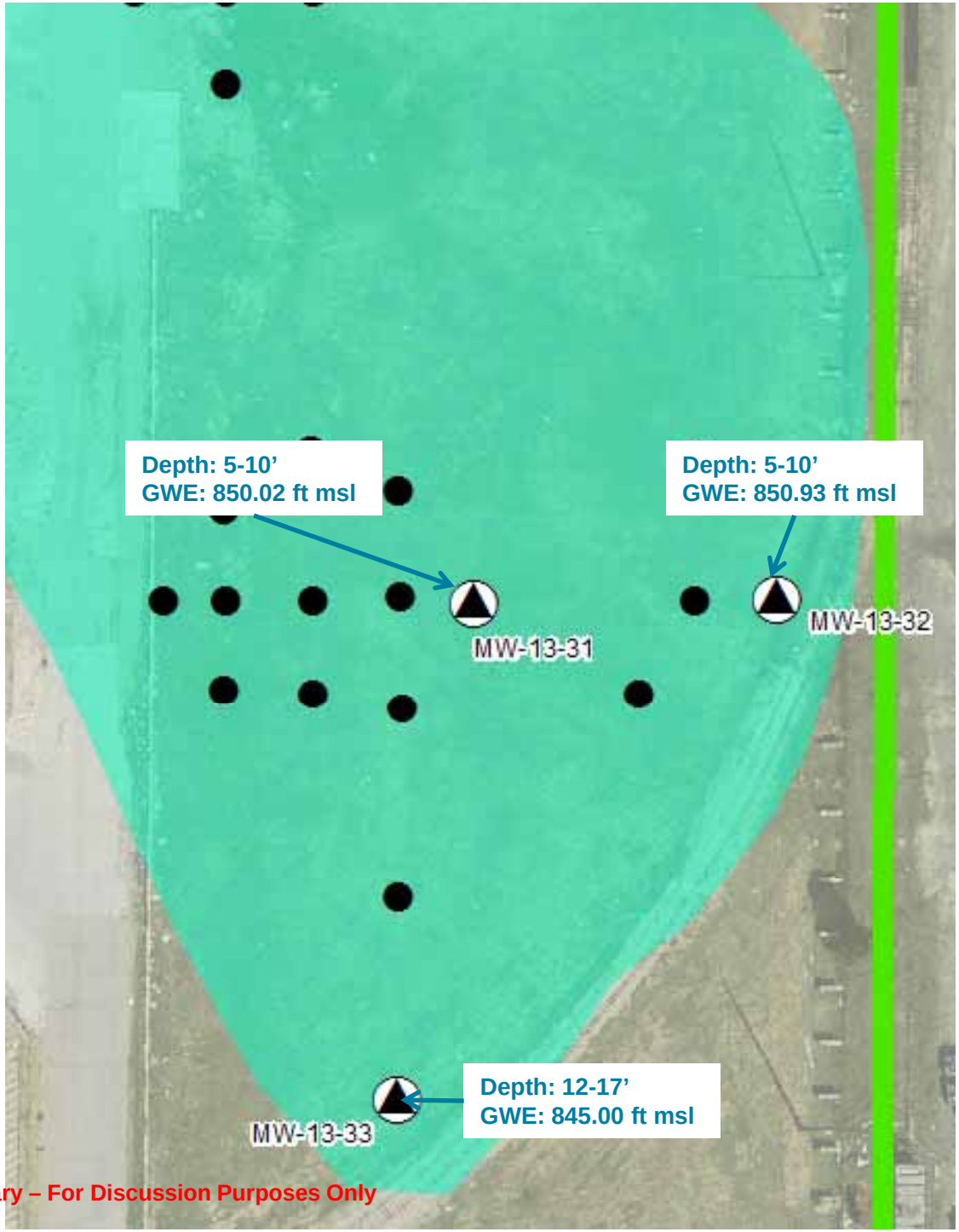

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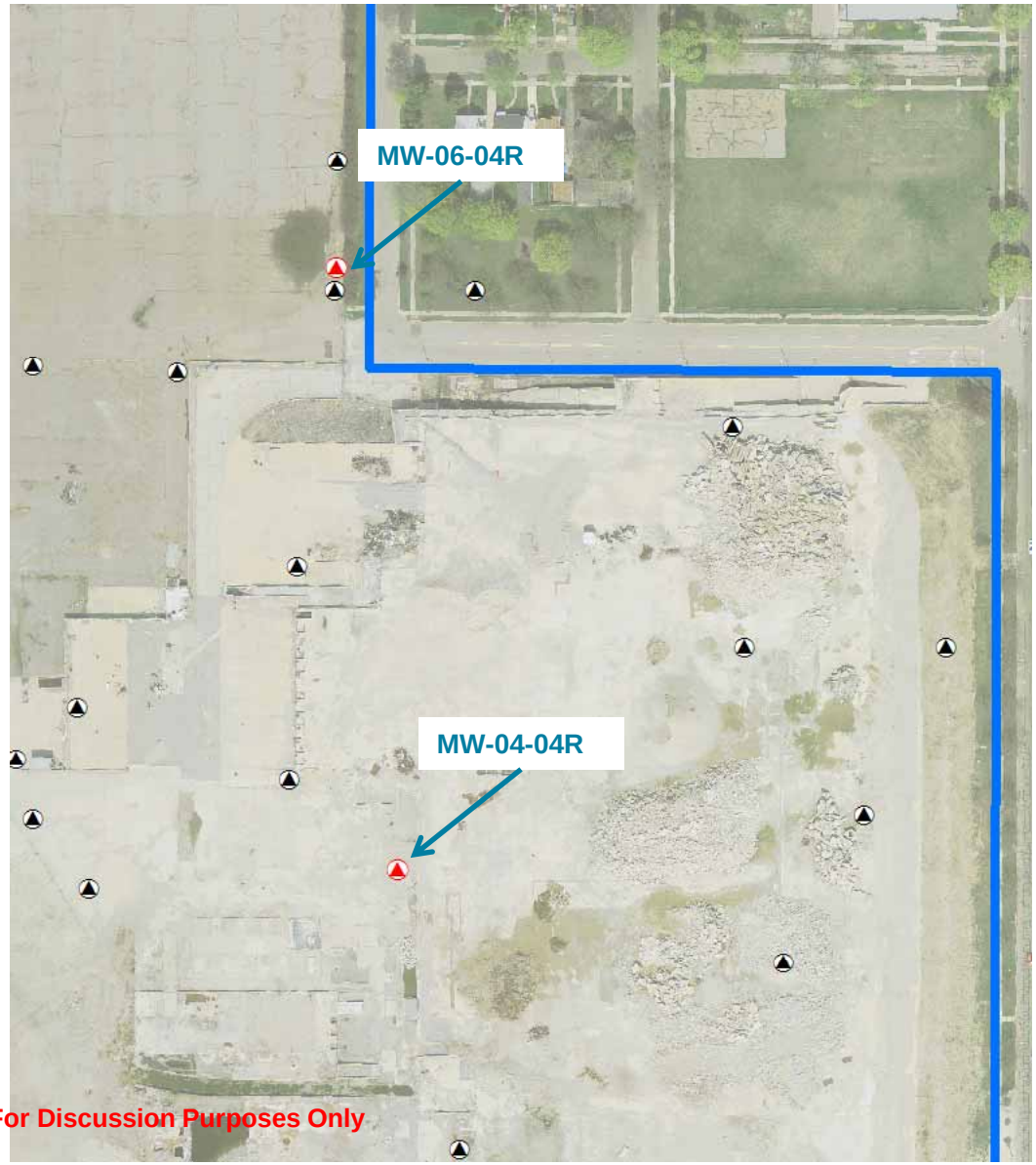
Bedrock Replacement Wells

- Wells Sampled, results pending
- Former/damaged wells abandoned



August 2013 Groundwater Sampling Event

August 12 – 23

- Collected samples from 117 monitoring wells
- Samples collected for COCs and geochemical parameters
- Results pending

Long Term Monitoring Plan

Design Basis:

- COC distribution
- Plume stability and trend analysis
- Geochemical conditions
- Attenuation pathways and mechanisms

Objectives:

- Verify COCs exceeding criteria are stable or in decline
- Verify stability of plume(s) and that exceedances are not migrating off-Site
- Monitor hydrogeologic and biogeochemical conditions for changes that may affect selected remedy

Monitoring Parameters:

- Well-specific focused COC lists identified during interim monitoring
- Geochemical data collected annually, or as required to assess changes in COC concentrations
- Incorporate new monitoring wells into plan, as necessary

Long Term Monitoring Plan cont.

Monitoring Frequency:

- Quarterly for first year (beyond interim monitoring)
- Semi-Annual / Annual thereafter based on statistical trends

Reporting

- Interim Monitoring Report (Spring 2014)
  - Initial statistical/plume stability/geochemical evaluation
  - Outline additional quarterly monitoring plan
- Annual Report following 8 quarterly events (Spring 2015)
  - Confirm attenuation/stability

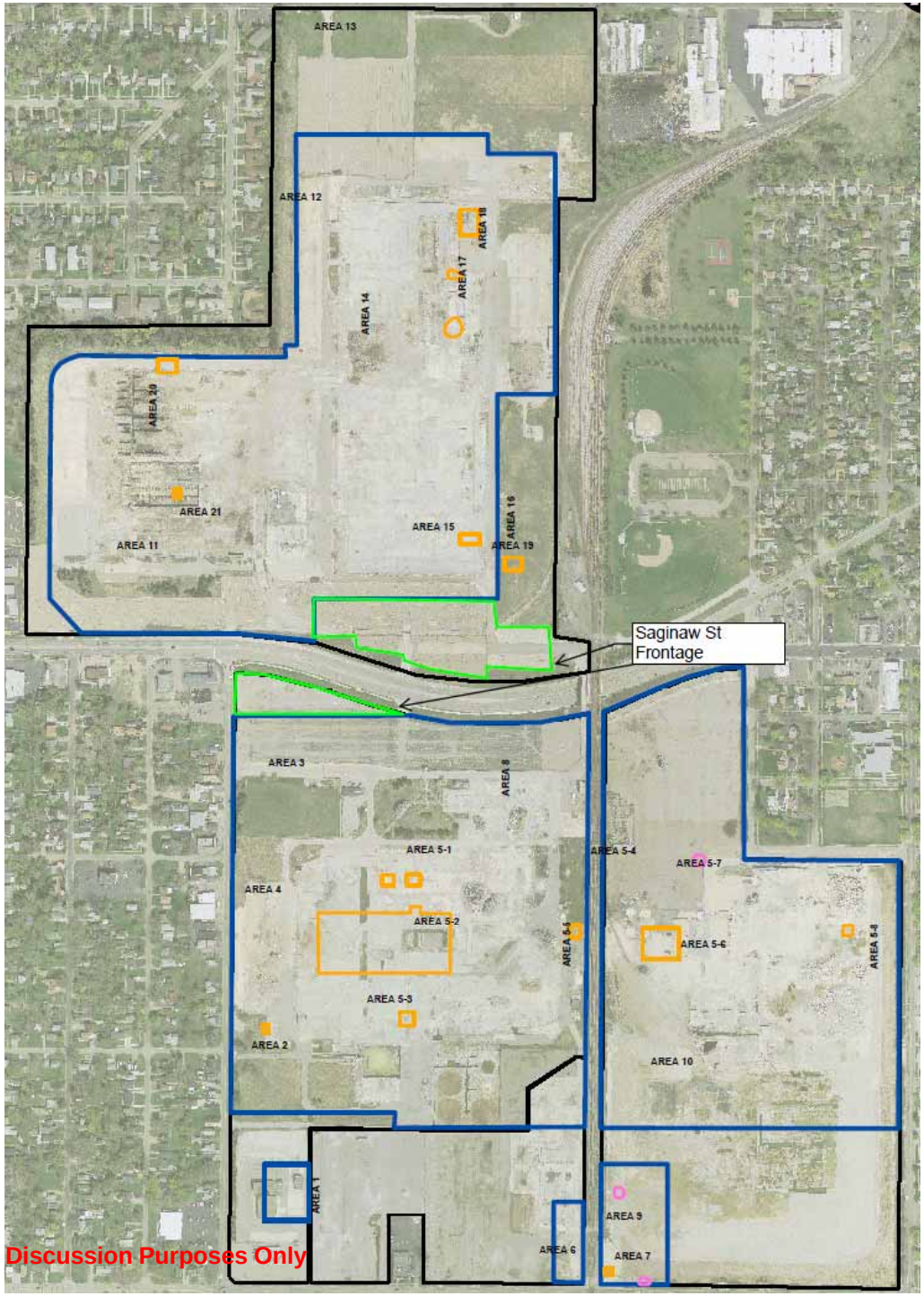
Surface Cover

CMS Approach:

“Maintain Existing Conditions”

Tasks:

- Initial Clearing/Maintenance
- Annual Maintenance
- Periodic Maintenance



LEGEND

- EXCAVATION FOR POTENTIAL OFFSITE VAPOR INTRUSION RISK AND/OR DIRECT CONTACT EXPOSURE PATHWAY
- CAP AREA FOR DIRECT CONTACT AND/OR PARTICULATE INHALATION EXPOSURE PATHWAYS
- PRESERVE CURRENT CONDITION OF EXISTING SURFACE COVER
- PROPERTY BOUNDARY

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Surface Cover O&M

Initial Clearing/Maintenance	Cost
Vegetation removal (mechanical and chemical)	$430,000
Seal asphalt and repair major concrete cracks	$250,000
Fill low areas	$340,000
Annual Maintenance	
Vegetation abatement maintenance	$120,000
Periodic Maintenance	
Asphalt and concrete repairs, as needed (every 5 years)	$35,000

BWL RFI/CMS Comments

RFI:

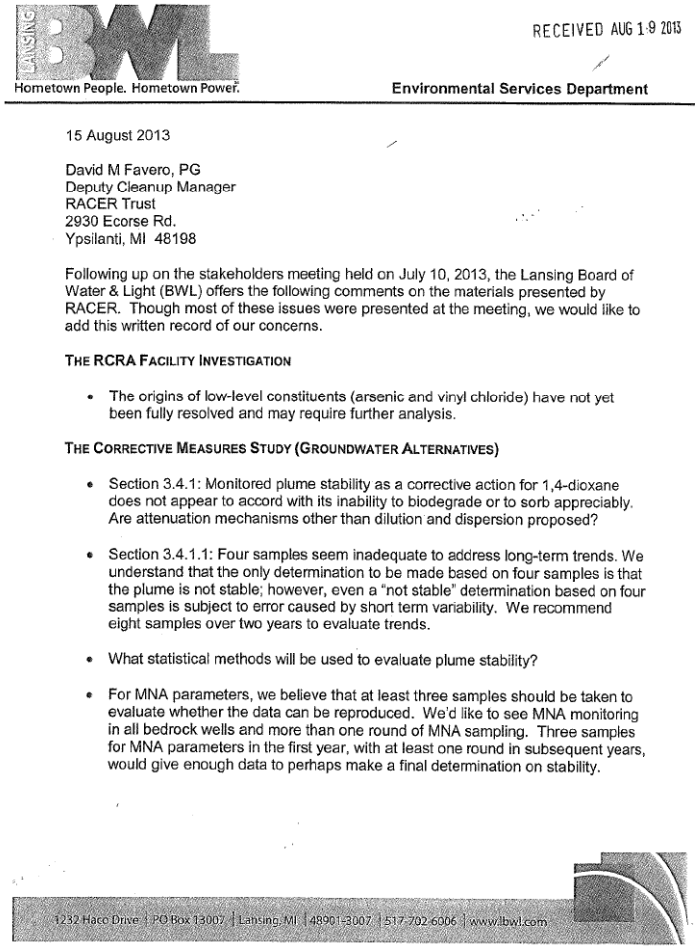
- Arsenic and VC in bedrock

CMS:

- 1,4-Dioxane Attenuation
- Trend Analysis
- Statistical Methods
- MNA Parameters

Other Concerns:

- Vertical Migration /Municipal Well Sampling
- Plume Stability Monitoring



LANSING BWL
Hometown People. Hometown Power.

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Environmental Services Department

15 August 2013

David M Favero, PG
Deputy Cleanup Manager
RACER Trust
2930 Ecorse Rd.
Ypsilanti, MI 48198

Following up on the stakeholders meeting held on July 10, 2013, the Lansing Board of Water & Light (BWL) offers the following comments on the materials presented by RACER. Though most of these issues were presented at the meeting, we would like to add this written record of our concerns.

THE RCRA FACILITY INVESTIGATION

- The origins of low-level constituents (arsenic and vinyl chloride) have not yet been fully resolved and may require further analysis.

THE CORRECTIVE MEASURES STUDY (GROUNDWATER ALTERNATIVES)

- Section 3.4.1: Monitored plume stability as a corrective action for 1,4-dioxane does not appear to accord with its inability to biodegrade or to sorb appreciably. Are attenuation mechanisms other than dilution and dispersion proposed?
- Section 3.4.1.1: Four samples seem inadequate to address long-term trends. We understand that the only determination to be made based on four samples is that the plume is not stable; however, even a "not stable" determination based on four samples is subject to error caused by short term variability. We recommend eight samples over two years to evaluate trends.
- What statistical methods will be used to evaluate plume stability?
- For MNA parameters, we believe that at least three samples should be taken to evaluate whether the data can be reproduced. We'd like to see MNA monitoring in all bedrock wells and more than one round of MNA sampling. Three samples for MNA parameters in the first year, with at least one round in subsequent years, would give enough data to perhaps make a final determination on stability.

1232 Haco Drive | PO Box 13007 | Lansing, MI | 48901-3007 | 517-702-6006 | www.lbwl.com

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CMS Cost Summary

Cost Estimate [1]	Plant 2	Plant 3	Plant 6	GRAND TOTAL
Land Use Restrictions:	$29,300	$23,400	$41,000	$94,000
Groundwater Use Restrictions:	$8,300	$8,300	$8,300	$25,000
Monitored Plume Stability (30 year):	$2,130,000	$2,150,000	$2,997,000	$7,213,000
Interim GW Sampling (1 year, annual cost):	$108,000	$118,000	$293,000	$519,000
Annual Plume Stability Monitoring (average annual cost):	$14,000	$15,000	$37,000	$66,000
Initial Surface Cover and Vegetation Control (year 1):	$314,000	$295,000	$329,000	$938,000
Annual Maintenance:	$41,000	$41,000	$41,000	$121,000
Periodic Maintenance (every 5 years):	$12,000	$12,000	$12,000	$36,000
Caps (Areas 2, 5-1, 5-2, 5-3, 5-5, 5-6, 5-8, 7, 16, 17, 18, 19, 20, and 21):	$300,000	$82,000	$87,000	$469,000
Targeted Excavation (Areas 5-7, 7, and 9):	$0	$0	$187,000	$187,000
Subtotal:	$2,470,000	$2,270,000	$3,330,000	$8,000,000

Budget Amendment 3

Plant 3

Current Total: $217,300

- Includes 1,4-dioxane investigation costs for
  - 1 additional VAP borings to 80 feet
  - 3 deep overburden/weathered bedrock wells
  - 2 bedrock wells

Add contingency for 3 bedrock wells to understand GW CSM: $45,000

Plant 2

Current Total: $264,000

- Includes costs for
  - 6 additional VAP borings to 80 feet
  - 8 deep overburden/weathered bedrock wells
  - 3 bedrock wells

Based on recent results, add cost for:

- 9 VAP borings: $70,000
- 3 deep overburden/weathered bedrock wells: $20,000
- 1 bedrock well: $15,000

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Other Items

- Municipal Well Sampling
  - BWL looking into the use of the MDEQ's camera – potential to focus effort
- Storm Sewer Monitoring
  - Outfall on western portion of Plant 2 located
  - Flow estimates at Plant 6 and at River suggests 10-20X dilution factor
  - May 2013 sampling indicates no GSI exceedances leaving Site
  - September sampling event scheduled for this week.
- Plant 3 Twp Water Mains
  - Line off Saginaw does not intersect known impacts
  - Westside water wants line capped at T in Saginaw ROW
- Demo Permit

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Imagine the result