




DRAFT MEMORANDUM

To: Mr. Richard Conforti  REF. No.: 012636-T09

FROM: Michael Tomka/kf/88 DATE: April 13, 2015

CC: Dave Favero/Grant Trigger (RACER), Tony Finch (OBG)
John McCabe/Joe Rogers (MDEQ)

RE: **Supplemental RCRA Facility Investigation
Q4 2014 – Groundwater Results Summary
Former Peregrine (US) Inc. (Peregrine) Coldwater Road Facility
Genesee Township, Michigan**

Conestoga-Rovers & Associates (CRA) has prepared the following memorandum on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER) to summarize the results of the Fourth Quarter 2014 (Q4-2014) groundwater sampling completed on December 9 and 10, 2014 at the Former Peregrine (US) Inc. (Peregrine) Coldwater Road Facility in Genesee Township, Michigan (Site). Please note that a more detailed evaluation of these results (including laboratory reports, field notes, etc.) will be submitted as part of the Annual Monitoring Report (AMR) in accordance with the "Supplemental RFI Groundwater Investigation Work Plan and Groundwater Monitoring Plan" (CRA, September 16, 2013) which was approved by the MDEQ on October 15, 2013. The AMR will be completed following the receipt of the results of the comprehensive annual sampling which was completed between March 25 and March 27, 2015. Please note that deep aquifer monitoring well MW-15-10 was found to be damaged (bulged riser above ground surface) and could not be sampled. MW-15-10 will be repaired on April 11, 2015; after which it will be purged and subsequently sampled consistent with the Monitoring Plan. The results will be included in the AMR.

The results of the Q4-2014 groundwater monitoring event are presented in Figure 1 along with historic sampling results. Table 1 presents a summary of the Q4-2014 groundwater monitoring event results screened against the Site-specific background values (BVs). Those constituents exceeding Site-specific BVs were then screened against the residential/nonresidential drinking water. Please note that there are no residential or nonresidential groundwater volatilization to indoor air inhalation criteria for the constituents analyzed.

As presented in the monitoring plan, eight perched aquifer (shallow) monitoring wells were sampled during the Q4-2014 monitoring event and the groundwater samples were analyzed for total and dissolved lead/manganese. Two samples from two locations exceeded background values along with the residential/non-residential drinking water criteria (aesthetic value) for dissolved manganese; however, both results were below the residential/non-residential drinking water criteria (health based value). The results of the samples analyzed during the Q4-2014 monitoring event are within the historical ranges observed

during the Supplemental RCRA Facility Investigation Groundwater Monitoring and no recommendations for any modifications to the monitoring program are proposed at this time.

Should you have any questions or comments please feel free to contact us (519-884-0510).

LEGEND

- FACILITY BOUNDARY
- SHALLOW MONITORING WELL LOCATION (ANNUAL)
- QUARTERLY MONITORING LOCATION
- STORM SEWER LINE
- SANITARY SEWER LINE
- MANHOLE
- STORM SEWER MONITORING LOCATION

MW-17-13		3/26/2014
Arsenic		0.01
Arsenic (dissolved)		0.012 (ABC)
Iron (dissolved)		5.9 (AB)
Lead (dissolved)		-
Manganese		0.6

chemical_name	Background	A	B	C	D	E
Arsenic	0.01	0.01	-	0.01	-	0.01
Arsenic (dissolved)	0.0072	0.01	-	0.01	-	0.01
Iron	32.58	0.3	2	0.3	5.6	-
Iron (dissolved)	4	0.3	2	0.3	5.6	-
Lead	0.0035	0.004	-	0.004	-	-
Lead (dissolved)	0.003 U	0.004	-	0.004	-	-
Manganese	0.963	0.05	0.86	0.05	2.5	-
Manganese (dissolved)	0.547	0.05	0.86	0.05	2.5	-

Background	Background - Shallow Water Bearing Zone
A	Residential Drinking Water Criteria
B	Residential Drinking Water Criteria - Health Based Criteria
C	Nonresidential Drinking Water Criteria
D	Nonresidential Drinking Water Criteria - Health Based Criteria
E	Groundwater/Surface Water Interface (GSI) Criteria

- NOTES:
- THIS DRAWING IS FOR REFERENCE ONLY AND IS NEITHER COMPLETE NOR TO EXACTING SCALE.
 - RESULTS ARE FIRST SCREENED AGAINST SITE-SPECIFIC BACKGROUND VALUES (BACKGROUND); THOSE CONSTITUENTS EXCEEDING BACKGROUND ARE THEN SCREENED AGAINST MDEQ PART 201 CRITERIA.

MW-1	12/2/2010	5/13/2011	9/12/2011	12/7/2011	3/26/2014
Arsenic	0.0094	0.005 U	0.005 U	0.0065	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	3.59	0.857	1.2	0.24	0.55
Iron (dissolved)	-	-	-	-	0.1 U
Lead	0.0142 (AC)	0.0033	0.0033	0.003 U	0.0034
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.164	0.0567	0.4	0.025	0.038
Manganese (dissolved)	-	-	-	-	0.01 J

B-9	12/3/2010	5/11/2011	9/14/2011	12/7/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014
Arsenic	0.0033 J	0.005 U	0.005 U	0.005 U	-	-	-	-
Arsenic (dissolved)	-	-	-	-	0.005 U	-	-	-
Iron	1.01	0.302	0.27	0.14	-	-	-	-
Iron (dissolved)	-	-	-	-	0.1 U	-	-	-
Lead	0.003 U	0.003 U	0.003 U	0.003 U	-	0.003 U	0.003 U	0.0019 J
Lead (dissolved)	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.391	0.211	6.8 J (ABCD)	0.31	-	0.03	0.21	0.047
Manganese (dissolved)	-	-	-	-	0.047	0.019	0.2	0.039

MW-2	12/3/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014
Arsenic	0.0279 (ACE)	0.0046 J	0.01	0.005 U	0.0066
Arsenic (dissolved)	-	0.0075	0.005 U	0.005 U	0.0046 J
Iron	24.8	8.27	16	12	6
Iron (dissolved)	-	-	14 (ABCD)	11 (ABCD)	4
Lead	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	0.003 U	0.003 U	0.003 U
Manganese	2.12 (ABC)	0.541	2.5 (ABC)	2.6 (ABCD)	1.8 (ABC)
Manganese (dissolved)	-	-	2.7 (ABCD)	2.6 (ABCD)	1.7 (ABC)

MW-20-13	3/26/2014	6/9/2014	9/10/2014	12/10/2014
Arsenic	0.005 U	-	-	-
Arsenic (dissolved)	0.005 U	-	-	-
Iron	0.1 U	-	-	-
Iron (dissolved)	0.1 U	-	-	-
Lead	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.0062 J	0.0023 J	0.015 U	0.015 U
Manganese (dissolved)	0.0056 J	0.0012 J	0.015 U	0.015 U

PFW-2	12/3/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014
Arsenic	0.0032 J/0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-
Arsenic (dissolved)	-	-	-	-	0.005 U	-	-	-
Iron	0.701/0.684	0.541	0.97	0.36	1.3	-	-	-
Iron (dissolved)	-	-	-	-	0.23	-	-	-
Lead	0.003 U/0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0023 J	0.003 U	0.0037
Lead (dissolved)	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.963/0.91	0.581	1.4 (ABC)	0.54	0.66 J	1.5 (ABC)	1.6 (ABC)	0.84
Manganese (dissolved)	-	-	-	-	0.97 J (ABC)	1.5 (ABC)	1.6 (ABC)	0.81 (AC)

MW-4-02	5/11/2011	9/13/2011	12/5/2011	3/27/2014	6/10/2014	9/9/2014	12/9/2014
Arsenic	0.005 U	0.005 U	0.005 U/0.005 U	0.005 U	-	-	-
Arsenic (dissolved)	-	-	-	0.005 U	-	-	-
Iron	0.101	0.1 U	0.1 U/0.1 U	0.15	-	-	-
Iron (dissolved)	-	-	-	0.1 U	-	-	-
Lead	0.003 U	0.003 U	0.003 U/0.003 U	0.003 U	0.003 U	0.003 U/0.003 U	0.003 U
Lead (dissolved)	-	-	-	0.003 U	0.003 U	0.003 U/0.003 U	0.003 U
Manganese	0.0418	0.023 J	0.01 J/0.01 J	0.013 J	0.023	0.0037 J/0.0044 J	0.015 U
Manganese (dissolved)	-	-	-	0.003 J	0.0016 J	0.015 U/0.015 U	0.015 U

PFW-9	12/2/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014
Arsenic	0.005 U/0.005 U	0.005 U	0.0033 J	0.005 U	0.005 U	-	-	-
Arsenic (dissolved)	-	-	-	-	0.005 U	-	-	-
Iron	7.78 J/2.93 J	0.232	2	0.089 J	0.084 J	-	-	-
Iron (dissolved)	-	-	-	-	0.21	-	-	-
Lead	0.003 U/0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.0519 J/0.0208 J	0.008 J	0.41	0.015 U	0.0028 J	0.015 U	0.21	0.022
Manganese (dissolved)	-	-	-	-	0.0041 J	0.0011 J	0.22	0.023

MW-17-13	3/26/2014	6/10/2014	9/10/2014	12/10/2014
Arsenic	0.01	-	-	-
Arsenic (dissolved)	0.012 (ACE)	-	-	-
Iron	5.8	-	-	-
Iron (dissolved)	5.9 (ABCD)	-	-	-
Lead	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.6	1.6 (ABC)	1.1 (ABC)	0.65
Manganese (dissolved)	0.58 (AC)	1.7 (ABC)	1.2 (ABC)	0.66 (AC)

PFW-4	5/11/2011	9/12/2011	6/10/2014
Arsenic	0.0034 J/0.0035 J	0.0044 J	-
Arsenic (dissolved)	-	0.0034 J	0.005 U/0.005 U
Iron	5.62/5.71	0.66	-
Iron (dissolved)	-	0.1 U	0.1 U/0.1 U
Lead	0.0356 (AC)/0.0358 (AC)	0.013 (AC)	-
Lead (dissolved)	-	0.003 U	0.003 U/0.003 U
Manganese	0.0962/0.0982	0.031	-
Manganese (dissolved)	-	0.017	0.052/0.052

MW-18-13	3/27/2014	6/10/2014	9/10/2014	12/10/2014
Arsenic	0.005 U	-	-	-
Arsenic (dissolved)	0.005 U	-	-	-
Iron	0.1 U	-	-	-
Iron (dissolved)	0.1 U	-	-	-
Lead	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	0.009 J	0.071	0.17	0.36
Manganese (dissolved)	0.0085 J	0.061	0.18	0.37

PFW-11	12/2/2010	5/13/2011	9/13/2011	12/6/2011	3/26/2014
Arsenic	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	2.73	0.202	0.1 U	0.096 J	0.1 U
Iron (dissolved)	-	-	-	-	0.1 U
Lead	0.0125 (AC)	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.056	0.0317	0.055 J	0.012 J	0.0062 J
Manganese (dissolved)	-	-	-	-	0.0041 J

PFW-10	12/3/2010	5/13/2011	9/13/2011	12/6/2011	3/26/2014
Arsenic	0.005 U	0.005 U	0.005 U	0.005 U	-
Arsenic (dissolved)	-	-	-	-	0.005 U/0.005 U
Iron	0.1 U	0.1 U	0.1 U	0.1 U	-
Iron (dissolved)	-	-	-	-	0.1 U/0.1 U
Lead	0.003 U	0.003 U	0.003 U	0.003 U	-
Lead (dissolved)	-	-	-	-	0.003 U/0.003 U
Manganese	0.16	0.0719	0.047	0.024	-
Manganese (dissolved)	-	-	-	-	0.015/0.011 J

MW-19-13	3/27/2014	6/9/2014	9/9/2014	12/9/2014
Arsenic	0.005 U	-	-	-
Arsenic (dissolved)	0.005 U	-	-	-
Iron	0.12	-	-	-
Iron (dissolved)	0.1 U	-	-	-
Lead	0.003 U	0.003 U	0.003 U	0.003 U/0.003 U
Lead (dissolved)	0.003 U	0.003 U	0.003 U	0.003 U/0.003 U
Manganese	0.11	0.092	0.28	0.19/0.2
Manganese (dissolved)	0.11	0.11	0.27	0.2/0.19

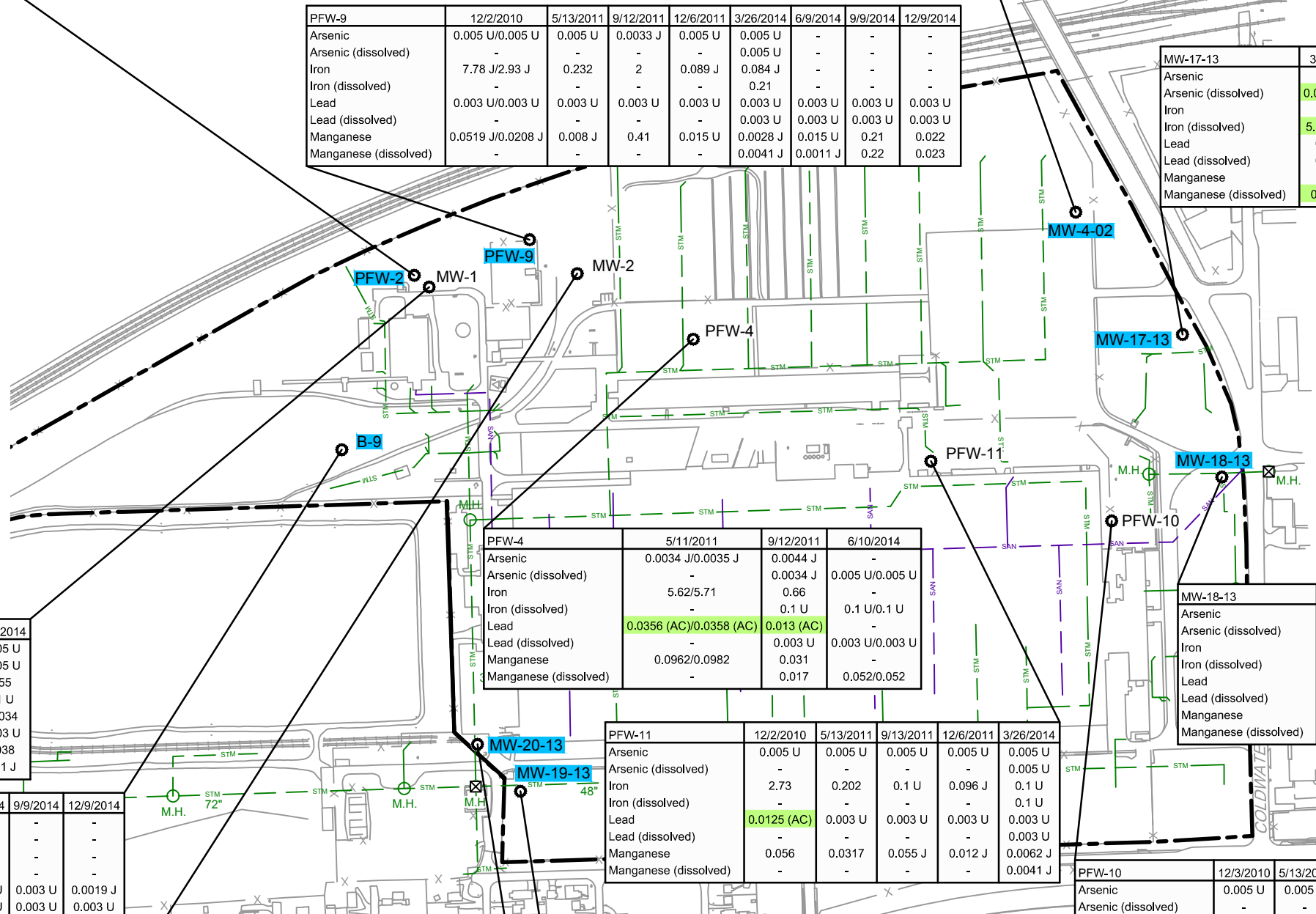
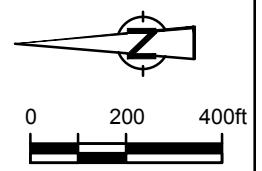


figure 1
 SHALLOW GROUNDWATER MONITORING RESULTS SUMMARY
 FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
 Genesee Township, Michigan



TABLE 1

Q4 2014 - SHALLOW GROUNDWATER RESULTS SUMMARY
 FORMER PEREGRINE (US) INC. COLDWATER ROAD FACILITY
 GENESEE TOWNSHIP, MICHIGAN

Sample Location:		B-9	MW-4-02	MW-17-13	MW-18-13	MW-19-13			
Sample ID:		GW-120914-12636-SSH-1439	GW-120914-12636-SSH-1440	GW-121014-12636-SSH-1444	GW-121014-12636-SSH-1445	GW-120914-12636-SSH-1441			
Sample Date:		12/9/14	12/9/14	12/10/14	12/10/14	12/9/14			
Parameters:	Units	Background - Shallow Aquifer a	Residential Drinking Water Criteria b	Nonresidential Drinking Water Criteria c					
Metals									
Lead	mg/L	0.0035	0.004	0.004	0.0019 J	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003	0.004	0.004	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	0.963	0.05 (0.86) ¹	0.05 (2.5) ¹	0.047	0.015 U	0.65	0.36	0.19
Manganese (dissolved)	mg/L	0.547	0.05 (0.86) ¹	0.05 (2.5) ¹	0.039	0.015 U	0.66 ^b	0.37	0.20

Sample Location:		MW-19-13	MW-20-13	PFW-2	PFW-9			
Sample ID:		GW-120914-12636-SSH-1442	GW-121014-12636-SSH-1443	GW-120914-12636-SSH-1437	GW-120914-12636-SSH-1438			
Sample Date:		12/9/14	12/10/14	12/9/14	12/9/14			
Parameters:	Units	Background - Shallow Aquifer a	Residential Drinking Water Criteria b	Nonresidential Drinking Water Criteria c				
Metals								
Lead	mg/L	0.0035	0.004	0.004	0.003 U	0.003 U	0.0037	0.003 U
Lead (dissolved)	mg/L	0.003	0.004	0.004	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	0.963	0.05 (0.86) ¹	0.05 (2.5) ¹	0.20	0.015 U	0.84	0.022
Manganese (dissolved)	mg/L	0.547	0.05 (0.86) ¹	0.05 (2.5) ¹	0.19	0.015 U	0.81 ^b	0.023

Notes:

- (1) Health Based Screen Criteria shown in brackets
- 1.1^a Exceeds Aesthetic Criteria shown in superscript but below Nonresidential Health Based Criteria
- 1.1^a Exceeds Screening Criteria shown in superscript
- J Estimated concentration.
- U Not present at or above the associated value.
- UJ Estimated reporting limit.
- Not analyzed.