August 8, 2023

Ms. Kelly Owens
Rhode Island Department of Environmental Management
Office of Land Revitalization & Sustainable Materials Management
235 Promenade Street
Providence, RI 02905

RE: Site Investigation Report – Work Plan - Revised
Rhode Island Recycled Metals, LLC Site
434 Allens Avenue, Providence, RI
LSE Project No. 09050H10

Dear Ms. Owens:

The following is a brief work plan describing proposed subsurface investigations at the subject Site in Providence, Rhode Island that is identified as AP 47, Lot 601 and AP 55, Lot 10. We understand that the Rhode Island Department of Environmental Management {(RIDEM), i.e. the Department)} has requested that a Site Investigation Report be completed in accordance with Section 1.8 of the Remediation Regulations.

LSE submitted an SIR Work Plan dated May 19, 2023 to which the Department responded with comments dated June 12, 2023. In a meeting at the Department on July 27, 2023, the Department comments and SIR Work Plan were discussed. The following SIR Work Plan has been revised to briefly summarize previous Site characterization results to the extent that they partially address Department concerns and to describe proposed testing of the Site's environmental media.

Background

The subject Site was previously owned and occupied by Mapleville Main, Inc. (MMI; formerly known as Metech International, Inc., a.k.a Boliden) and during those former activities, polychlorinated biphenyls (PCBs) were released causing impacts to surficial soil.

From 1986 to 1988, extensive sampling activities have been conducted at the Site by RIDEM, EPA and MMI (Boliden). The associated analytical results indicated elevated levels of PCBs and metals in source (i.e. shredded) material with lower levels in subsurface soils.

In November 1988, MMI contracted Cahill and Associated to conduct test pit investigations including PCB analysis of 143 soil samples from 7 test pits. The Cahill study determined that PCBs in shredded material piles was not significantly leaching into subsurface soils or groundwater.

A Preliminary Assessment of the MMI Property was completed by RIDEM in April 1989 and determined that the metals shredding operations at the Site had released PCBs. Consequently, a

Final Site Inspection Report (FSIR) was completed by EPA's contractor (Roy F. Weston) that included environmental sampling on July 29, 1992. The FSIR was submitted on February 19, 1993. In July 1992, EPA collected 6 sediment samples from the waterfront of the MMI site, upstream and the abutting tidal inlet to the south. No PCBs were detected in any sediment sample at depths of 10 to 15 inches. Elevated metals were detected in 3 of the sediment samples with the highest metals detected at the abutting tidal inlet that receives overland flow from the MMI site as well as stormwater from Allens Avenue from a combined sewer that receives raw sewerage during storms.

In March 1998, EPA collected 134 samples of shredding waste, soil, dust and capacitors for analysis of PCBs with 13 additionally analyzed for lead.

As part of a Consent Decree with EPA in 1994, MMI completed limited excavation/off-site disposal of PCB hot spots totaling 5,947 tons of PCB-contaminated soil and capped the Site with approximately 8,000 cubic yards of imported soil that was covered with a vegetative layer. The net volume of soil imported to the Site for use as a cap (4,036 cubic yards) was placed over the Site at a thickness of 1 foot. The source of the imported cap material is not identified in the VHB report[1]. This cleanup was documented in a report entitled: PCB Cleanup Verification Report (April 1998, revised February 1999). The report documents the collection of over 250 surficial soil samples collected for cleanup verification. None of the verification samples contained PCBs at a concentration greater than 10 parts per million (ppm). Part of the remedy for the Site included the recording of an environmental land use restriction (ELUR) on February 2, 2003. In addition to MMI's construction of a Site-wide engineered barrier and recording of an ELUR at the Property, 8 groundwater monitoring wells were also installed by MMI as part of corrective actions at the Site. Only 1 of the 7 wells contained PCBs which was detected at a concentration of 2.5 micrograms per liter (ug/l).

In a report submitted to RIDEM's Office of Compliance and Inspection dated June 23, 2011, FJA Environmental Associates provided the findings of a "Limited Subsurface Investigation" associated with the limited excavation of oil impacted soil resulting from a hydraulic line leak. Two shallow post-excavation compliance samples confirmed that no VOCs, TPH or metals exceeded applicable RIDEM Soil Objectives.

As part of a proposed sediment dredge project just east of the RIRM facility, 4 sediment samples were collected on December 2, 2010 and analyzed. Analytical results determined that total PCB concentrations ranged from below detection to 18 milligrams per kilogram (mg/kg). Various semi volatile organic compounds (SVOCs/PAHs) were detected with 3 containing 1 or more PAH constituent at concentrations exceeding RIDEM Soil Objectives. Lead was detected in all samples at concentrations ranging from 9.5 to 350 mg/kg and arsenic was detected in all samples at concentrations ranging from 3.1 to 12 mg/kg.

Current owners AARE, LLC subsequently entered a lease/purchase agreement to utilize the referenced Site by Rhode Island Recycled Metals, LLC (RIRM) for automotive/metal recycling

[1] RIDEM Comment #1.

operations. In order to allow RIRM to establish a baseline of groundwater quality before initiation of their own metal recycling operations at the Site, a groundwater monitoring event was completed by LSE in August 2009 and a second monitoring event was completed in October 2011. Monitoring well locations utilized for these two sampling events and summary data tables are attached to this SIR Work Plan[2]. Analytical results from both events confirmed that groundwater quality at the Site has been minimally impaired by historic and ongoing Site activities and no constituent concentrations were found to exceed GB Groundwater Objectives. LSE also collected 12 soil samples from two soil stockpiles excavated in 2015 to create a ramp to facilitate vessel salvage activities. Analytical results indicated that PCB concentrations in the stockpiles ranged from the reporting limit of 0.1 mg/kg to 0.92 mg/kg and none of the detected PCB concentrations exceeded RIDEM's Method 1 direct exposure criteria or leachability criteria of 10 ppm (mg/kg). The highest total PCB concentration detected was 1.78 ppm in one of twelve samples tested.

In a Phase II Subsurface Investigation Report for the Site prepared by Coneco and dated March 8, 2016, sampling of Site soil (11 direct-push borings), the 2 existing soil stockpiles, sediment (8 samples), and groundwater (7 monitoring wells) was completed.

- The only contaminant to exceed Industrial/Commercial Direct Exposure Criteria (I/C-DEC) in the 2 existing soil stockpiles was benzo(a)pyrene and lead in one pile; no VOCs, TPH, or PCBs exceeded corresponding I/C-DEC.
- Of the 13 soil boring samples analyzed for VOCs, TPH, PCBs, and metals, the only contaminants found to exceed the I/C-DEC were total petroleum hydrocarbons (TPH, 3 samples), arsenic (6 samples), and lead (3 samples).
- Of the 7 groundwater samples analyzed, no VOCs, TPH or metals exceeded applicable GB Groundwater Objectives.
- Of the 8 sediment samples analyzed, no VOCs, TPH, PCBs or metals were found to exceed analogous I/C-DEC.

SIR Objectives

Extensive sampling of soil, groundwater and sediment has previously been completed at the Site. Any contaminant impacts resulting from activities prior to RIRM occupancy of the Site were mitigated by excavation and implementation of engineered and institutional controls. The objective of this SIR is to assess the nature and extent of current impacts in surficial soil and subsoil at the Site. Site groundwater does not pose a threat to human receptors as it is classified GB and is not in a potable water resource area. Previous characterization of groundwater indicates that no GB-Groundwater Objectives were exceeded as of 2016. Previous sediment sampling has confirmed that contaminants that exceed Residential DEC are present but only one sample containing PCBs exceeded the I/C-DEC. Considering that potential future shoreline work may be completed, the existing sediment characterization data is sufficient to confirm that any excavated sediment will require encapsulation on the Site or disposal off-site as regulated material; as such, sediment sampling will not be conducted as part of this SIR.

[2] RIDEM Comment #2.

Due to the wide range of contaminants previously present in Site soil and in automotive fluids associated with former RIRM operations, each soil sample will be analyzed for the full suite of contaminates listed in Table 1 of the Remediation Regulations. These will include:

- Total Petroleum Hydrocarbons (TPH)
- Volatile Organic Compounds (VOCs)
- Semi-VOCs
- PCBs, and
- Priority Pollutant 13 Metals

Sample locations will be selected to be spatially representative of the Site and sampling depths will include samples composited from 0-2 feet below grade and samples composited from 5-7 feet below grade (i.e. two soil sample depths from each boring).

SIR Scope

The SIR scope will be consistent with that listed in Section 1.8.3 of the Remediation Regulations. A total of 9 soil borings[3] will be advanced at spatially representative locations approximated on the attached site plan. Note that the prior site plan included with LSE's previous SIR Work Plan utilized the VHB compliance soil sampling grid as the base map and was not intended to shown any boring locations other than those marked as orange circles. The borings will be advanced using direct-push equipment and soil samples (18 total) will be collected with a five-foot long Macrocore sample barrel. The borings will be advanced to a maximum depth of 10 feet below grade.

The 2 existing stockpiles were excavated from site-derived material near the eastern shoreline of the MMI property that was made to facilitate removal of submerged vessels in the Providence River. The stockpiles presumably contain a mixture of cap material, subsoil to a maximum depth of 7 feet and sediment. Based on estimates by others (i.e. Coneco), these stockpiles are each estimated to be 500 to 800 cubic yards in size. At an assumed average volume of 750 cubic yards each and a mass of 1.5 tons per yard, each pile contains an estimated 1,125 tons of soil. At the Department's requested sampling frequency of 1 sample per 500 tons[4], 2 grab soil samples will be collected from each existing soil stockpile (four total) and submitted for analysis of the same full analyte suite as listed above.

Although groundwater sampling at up to 15 monitoring well locations at the MMI site on several occasions has failed to detect an exceedance of the GB Groundwater Objectives, the most recent groundwater sampling data is now 7 years old. As such, this SIR will include sampling of up to three existing monitoring wells[5] if found to be viable and are located in spatially representative areas of the Site (substantially down gradient of most metal recycling activities). If sufficient

[3] RIDEM Comment #3
[4] RIDEM Comment #6
[5] RIDEM Comment # 4

existing monitoring wells cannot be found, new monitoring wells will be installed and sampled to provide 3 groundwater quality samples. Groundwater will be sampled using low-flow techniques and will be analyzed for constituents which have promulgated GB Groundwater Objectives (VOCs) and for TPH and PCBs.

All drilling activities will completed under the direction of a licensed professional geologist. All soil samples will be field screened for VOCs using a photo-ionization detector (PID) equipped with a 10.6 eV lamp and calibrated to 100 ppm by volume as isobutylene. Soil samples from the preselected depths will be collected in laboratory provided bottles and kept chilled until delivered to New England Testing Laboratory under chain of custody. All analytical data will be tabulated and compared to applicable I/C-DEC and GB-Leachability Criteria.

Based on the SIR Findings, a minimum of two remediation alternatives will be evaluated in accordance with Section 1.8.4 and the preferred remedy will be selected. The SIR will be certified as required in Section 1.8.5.

SIR Schedule

Following Department approval of this SIR Work Plan, LSE will obtain a dig-safe ticket, schedule the drilling task, and mobilize for field sampling. We anticipate that the SIR field tasks will be completed within 4-6 weeks of Department approval. The Report will be prepared and submitted within 4 weeks of completing all field sampling tasks. At a minimum and as required by the Department[6], the SIR will be submitted to the Department within Ninety (90) days of Department approval of the SIR Work Plan.

Feel free to contact the undersigned if you have questions or comments regarding this proposed revised SIR Work Plan.

Sincerely,

Lake Shore Environmental, Inc.

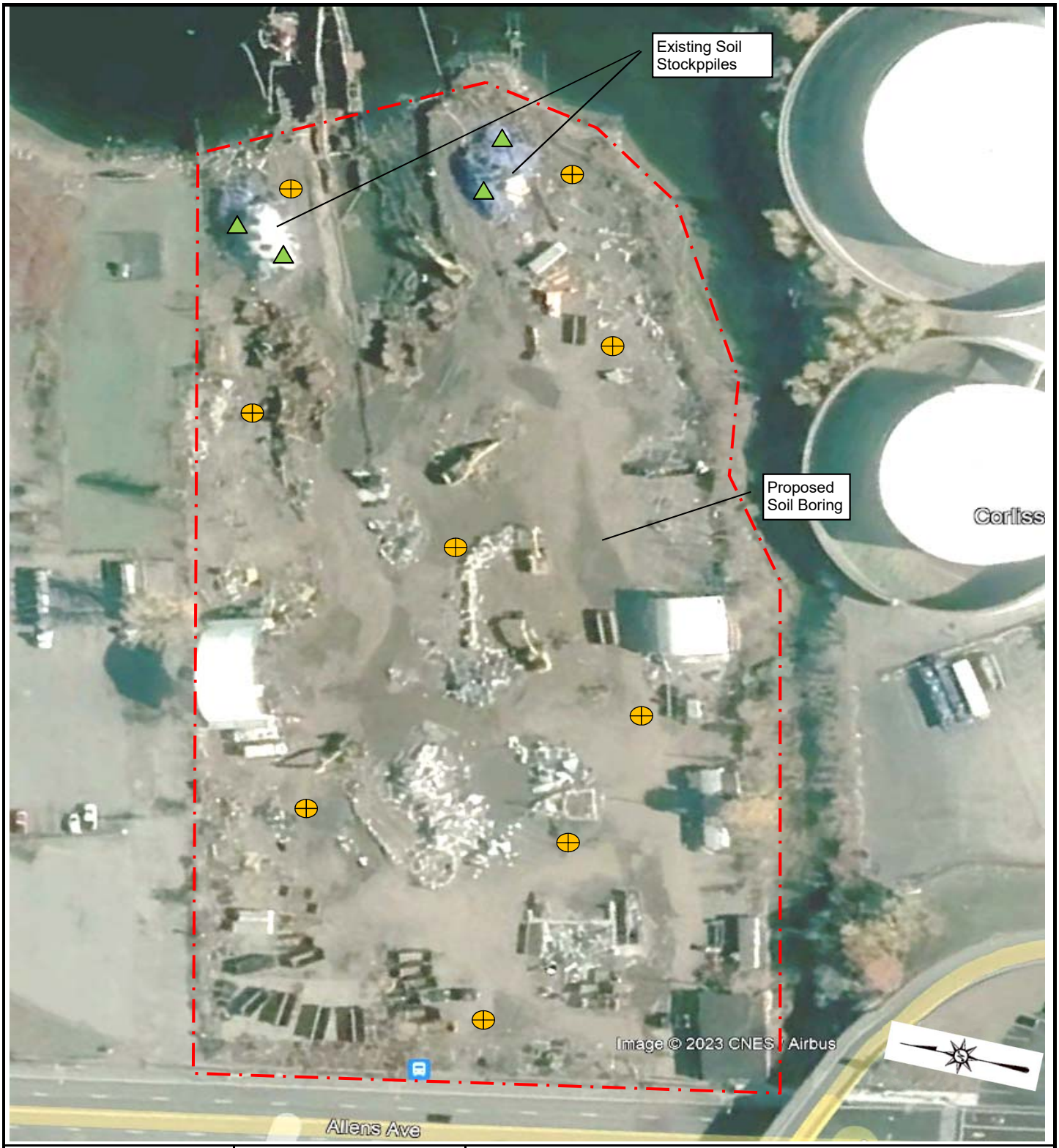
David J. Hazebrouck

David J. Hazebrouck, P.G., LSP, LEP
Principal

Attachments

C: AARE, LLC

[6] RIDEM Comment # 7



LAKE SHORE ENVIRONMENTAL

DP Soil Boring
Soil Stockpile Sample
Monitor Well (TBD)

Figure No.	**1**
Drawing Title:	SIR Sampling Plan 434 Allens Avenue Providence, RI
Date Prepared: 8/8/2023	*Prepared By:* DJH
Approxomate Scale:	NTS
LSE Proj. No. 09050H10	

Source: Map Dimensions taken from Google Earth.

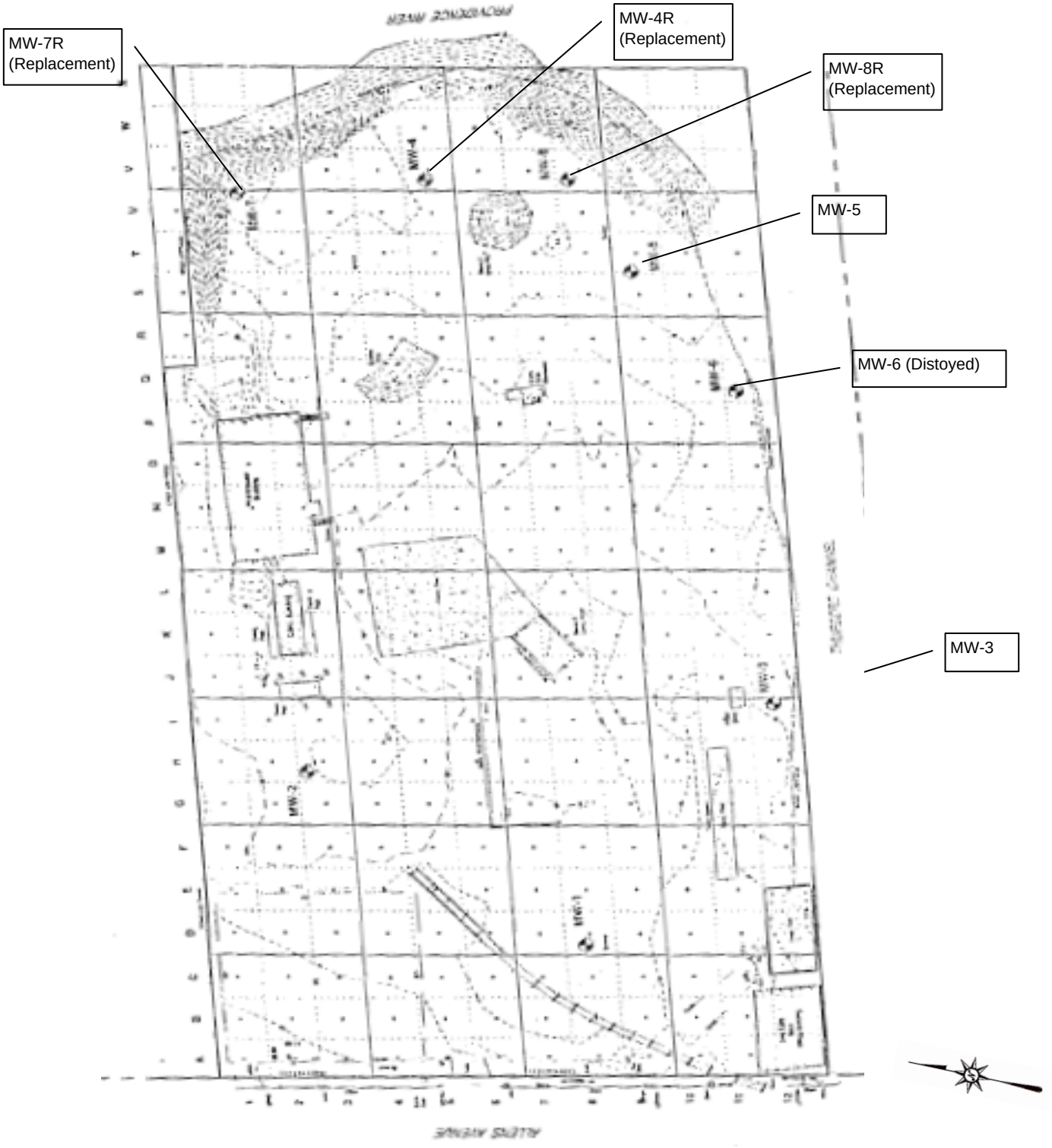


Figure No.	**2**
Drawing Title:	Site plan (Former MWs) 434 Allens Avenue Providence, RI
Date Prepared: 11/2/11	*Prepared By:* DJH
Approxomate Scale:	NTS
LSE Proj. No. 09050A20	

Source: Map Dimensions taken from Google Earth.

TABLE 1 - LABORATORY ANALYTICAL RESULTS GROUNDWATER SAMPLES

(Detected Analytes Only)
Former Boliden-Metech Site
434 Allens Avenue, Providence, RI
Aug-09

																GB(1) Groundwater Objectives (mg/l)
Date Sampled:		8/21/2009		8/21/2009		8/21/2009		8/21/2009		8/21/2009		8/21/2009				
Location:		MW-3		MW-6		MW-5		MW-8		MW-4		MW-7				
Well Depth:		16.08 BTOC		14.2 BTOC		14.6 BTOC		14.8 BTOC		13.5 BTOC		14.4 BTOC				
	Units															
Metals																
Antimony	mg/l	<0.006		<0.006		<0.006		<0.006		<0.006		<0.006				NA
Arsenic	mg/l	0.01		<0.01		<0.01		<0.01		<0.01		<0.01				NA
Beryllium	mg/l	<0.004		<0.004		<0.004		<0.004		<0.004		<0.004				NA
Cadmium	mg/l	<0.005		<0.005		<0.005		<0.005		<0.005		0.033				NA
Chromium	mg/l	<0.005		<0.005		<0.005		0.008		<0.005		0.007				NA
Copper	mg/l	<0.02		<0.02		<0.02		<0.02		<0.02		0.18				NA
Lead	mg/l	0.005		0.009		<0.005		0.014		<0.005		0.275				NA
Mercury	mg/l	<0.001		<0.001		<0.001		<0.001		<0.001		<0.001				NA
Nickel	mg/l	<0.005		<0.005		<0.005		<0.005		<0.005		0.08				NA
Selenium	mg/l	<0.01		<0.01		<0.01		<0.01		<0.01		<0.01				NA
Silver	mg/l	<0.005		<0.005		<0.005		<0.005		<0.005		<0.005				NA
Thallium	mg/l	<0.002		<0.002		<0.002		<0.002		<0.002		<0.002				NA
Zinc	mg/l	<0.02		0.02		0.03		0.03		<0.02		0.69				NA
Organics																
TPH	mg/l	<0.2		<0.2		<0.2		<0.2		<0.2		5.2				NA
PCBs																
Arochlor 1221	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1232	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1016/1242	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1248	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1254	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1260	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1262	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
Arochlor 1268	mg/l	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002				0.0005
VOCs																
VOCs	mg/l	<0.001 - <0.005		<0.001 - <0.005		<0.001 - <0.005		<0.001 - <0.005		<0.001 - <0.005		<0.001 - <0.005				varies by VOC
Carbon Disulfide	mg/l	<0.001		<0.001		<0.001		<0.001		<0.001		0.058				NA

<	Minimum detection limit
ug/l	microgram per liter or parts per billion (ppb).
mg/l	milligrams per liter or parts per million (ppm).
(1)	Groundwater Quality Objective based on RIDEM Remediation Regulations
	Detection exceeds GB Groundwater Objectives (Those applicable to the Site)

Lake Shore Environmental, Inc.

8/9/2023

TABLE 1 - LABORATORY ANALYTICAL RESULTS GROUNDWATER SAMPLES (10/25/11)

(Detected Analytes Only)
Former Boliden-Metech Site
434 Allens Avenue, Providence, RI
Aug-09

	Date Sampled:	10/25/2011	10/25/2011	10/25/2011	10/25/2011	10/25/2011	10/25/2011	GB(1)
	Location:	MW-3	MW-6	MW-5	MW-8R	MW-4R	MW-7R	Groundwater
	Well Depth:	16.08 BTOC	distroyed	14.6 BTOC	13.5 BTOPVC	14 BTOPVC	14.5 BTOPVC	Objectives (mg/l)
	Units							
Metals								
Antimony	mg/l	0.03		0.03	0.01	0.02	0.01	NA
Arsenic	mg/l	<0.01		0.01	<0.01	<0.01	<0.01	NA
Beryllium	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	NA
Cadmium	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	NA
Chromium	mg/l	<0.005		0.01	0.007	0.015	<0.005	NA
Copper	mg/l	<0.02		0.1	<0.02	0.03	<.02	NA
Lead	mg/l	0.008		0.269	0.039	0.162	0.024	NA
Mercury	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	NA
Nickel	mg/l	0.05		0.007	0.009	0.016	<0.005	NA
Selenium	mg/l	<0.01		0.05	0.03	0.04	<0.01	NA
Silver	mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	NA
Thallium	mg/l	<0.002		<0.002	<0.002	<0.002	<0.002	NA
Zinc	mg/l	<0.02		0.1	0.03	0.2	<0.02	NA
Organics								
TPH	mg/l	<0.2		653	482	588	2,750	NA
PCBs								
Arochlor 1221	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1232	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1016/1242	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1248	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1254	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1260	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1262	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
Arochlor 1268	mg/l	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	0.0005
VOCs								
Acetone	mg/l	nd		nd	nd	nd	0.091	NA
MTBE	mg/l	nd		0.0048	0.041	0.098	0.037	5
Tert-amyl Methyl Ether	mg/l	nd		nd	0.0017	0.0053	0.0022	NA
MEK	mg/l	nd		nd	nd	nd	0.036	NA
Benzene	mg/l	nd		nd	nd	nd	0.0019	0.14
4-Methyl-2-pentanone	mg/l	nd		nd	nd	nd	0.011	NA
Ethylbenzene	mg/l	nd		nd	nd	nd	0.026	1.60
m p o -Xylene	mg/l	nd		nd	nd	nd	0.0119	NA
Isopropylbenzene	mg/l	nd		nd	nd	nd	0.11	NA
n-Propylbenzene	mg/l	nd		nd	nd	nd	0.94	NA
1,3,5-Trimethylbenzene	mg/l	nd		nd	nd	nd	0.072	NA
tert-Butylbenzene	mg/l	nd		nd	nd	nd	0.0019	NA
1,2,4-Trimethylbenzene	mg/l	nd		nd	nd	nd	1	NA
sec-Butylbenzene	mg/l	nd		nd	nd	nd	0.038	NA
p-Isopropyltoluene	mg/l	nd		nd	nd	0.0037	nd	NA
tert butyl alcohol	mg/l	nd		nd	nd	0.0038	nd	NA
n-Butylbenzene	mg/l	nd		nd	nd	nd	0.029	NA
Naphthalene	mg/l	nd		nd	nd	nd	0.074	NA

<	Minimum detection limit
ug/l	microgram per liter or parts per billion (ppb).
mg/l	milligrams per liter or parts per million (ppm).
(1)	Groundwater Quality Objective based on RIDEM Remediation Regulations
	Detection exceeds GB Groundwater Objectives (Those applicable to the Site)