ADDENDUM TO
REMEDIAL ACTION PLAN

HURWITZ COMPANY SITE
267 MARILLA STREET
BUFFALO, NEW YORK 14220
NYSDEC BCP SITE NUMBER C915290

June 2022 B0620-022-002

Prepared For:

American Iron & Metal Recycling Erie

Prepared By:

BENCHMARK

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Certification

I, Thomas H. Forbes, certify that I am currently a NYS registered professional engineer and that this June 2022 Addendum to the Remedial Action Plan (RAP) for the Hurwitz Company Site (C915290), which was originally prepared by AFI Environmental for Liberty Iron & Metal and was reviewed and certified by the undersigned, was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

SEAL

STATE OF NEW YORK
THOMAS H. FORBES
No. 70950-1
LICENSED PROFESSIONAL ENGINEER

6-2-22

Date

MODIFICATION 1: SUBSTITUTE TEXT IN SECTION 6.3.2.2 THROUGH 6.3.3 TO REFLECT CURRENT STAFFING AND OWNERSHIP.

6.3.2.2 Participant

American Iron & Metal (AIM) Recycling Erie ("participant") will be responsible for complying with the QA requirements as specified herein and for monitoring and controlling the quality of the Brownfield cleanup construction either directly or through their designated environmental consultant and/or legal counsel. AIM Recycling Erie will also have the authority to select Remedial Action Contractor(s) to assist them in fulfilling these responsibilities. The designated project manager, Mr. Shady Rophail of AIM Recycling Erie is responsible for implementing the project and has the authority to commit the resources necessary to meet project objectives and requirements.

6.3.2.3 Benchmark Civil/Environmental Engineering & Geology, PLLC (Benchmark)

Benchmark Civil/Environmental Engineering & Geology, PLLC (Benchmark) is the prime environmental and licensed engineering consultant on this project and is responsible for the implementation of the RAP, including, but not limited to, field operations, laboratory testing, data management, data analysis, and reporting. Any one member of Benchmark's staff may fill more than one of the identified project positions (e.g., field team leader and site safety and health officer). Benchmark will ensure and verify that the remedial action implemented withing this Remedial Action Plan will meet any applicable BCP requirements. The various quality assurances, field, laboratory, and management responsibilities of key project personnel are defined below.

- Benchmark Project Manager (PM): Has the responsibility for ensuring that the project meets the Work Plan objectives. The PM will report directly to the participant project coordinator and the NYSDEC/NYSDOH project coordinators and is responsible for technical and project oversight. The PM will:
  - Define project objectives and develop a detailed work plan schedule.
  - Establish project policy and procedures to address the specific needs of the project as a whole and the objectives of each task.
  - Acquire and apply technical and corporate resources as needed to assure performance within budget and schedule constraints.
  - Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product.
  - Review the work performed on each task to assure its quality, responsiveness, and timeliness.

- Review and analyze overall task performance with respect to planned requirements and authorizations.
- Review and approve all deliverables before their submission to NYSDEC.
- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product.
- Ultimately be responsible for the preparation and quality of interim and final reports.
- Represent the project team at meetings.

- Benchmark Project Engineer (To be Determined): Has the responsibility for implementation of specific project tasks identified at the Site and is responsible for the supervision of project field personnel and subcontractors. The Project Engineer reports directly to the project manager. The Project Engineer will:
  - Define daily work activities.
  - Orient field staff concerning the project's special considerations.
  - Monitor and direct subcontractor personnel.
  - Review the work performed on each task to ensure its quality, responsiveness, and timeliness.
  - Assure that field activities, including sample collection and handling, are carried out in accordance with this QAPP.
- Benchmark SHSO (To be Determined): The Site Health and Safety Officer (SHSO) is responsible for implementing the procedures and required components of the Site Health and Safety Plan (HASP), determining levels of protection needed during field tasks, controlling site entry/exit, briefing the field team and subcontractors on site-specific health and safety issues, and all other responsibilities as identified in the HASP.

6.3.3 Quality Assurance (QA) Responsibilities

Benchmark's QA Officer, Mr. Christopher Boron, P.G., will have direct access to corporate executive staff as necessary, to resolve any QA dispute, and is responsible for auditing the implementation of the QA program in conformance with the demands of specific investigations and Benchmark policies, and NYSDEC requirements. Benchmark's QA Officer has sufficient authority to stop work on the investigation as deemed necessary in the event of serious QA issues.

- Benchmark's QA Officer: Specific function and duties include:
  - Performing QA audits on various phases of the field operations
  - Reviewing and approving QA plans and procedures.

- Providing QA technical assistance to project staff.
- Reporting on the adequacy, status, and effectiveness of the QA program on a regular basis to the Project Manager for technical operations

Responsible for assuring third party data review of all sample results from the analytical laboratory.

MODIFICATION 2: REPLACE SECTION 3.4 WITH THE FOLLOWING TEXT TO REFLECT PRE-DELINEATION OF AOCS.

3.4 Areas of Concern Excavation

3.4.1 Design Basis and Remedial Goals

The remedial goal of the Area of Concern (AOC) excavation is the removal of source contamination on site where soil contaminant concentrations exceed 6 NYCRR Part 375 6.8 (b) (Ref 1) Commercial Soil Cleanup Objectives (SCOs) and Site-Specific Action Levels (SSALs) as identified in the Remedial Investigation / Supplemental Subsurface Investigation Report (RI/SSIR) (Ref 12). The location of identified AOCs and their estimated excavation depths based on subsurface samples as collected during the RI/SSI can be seen in **Figure 18**.

Excavation and off-site disposal of contaminated soil on-site will include the removal of the following as outlined in the Decision Document (DD) (Ref 22) for the Site:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u) (Ref 1)
- Soil Exceeding the site-specific action levels;
    - Arsenic exceeding 40 ppm,
    - Mercury exceeding 10 ppm,
    - Lead exceeding 3500 ppm,
    - Total PCBs exceeding 10 ppm;
- Non aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing SVOCs exceeding 500 ppm;
- Soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs) (Ref 1), as defined by 6 NYCRR Part 375-6.8 (Ref 1) for those contaminants found in site groundwater above standards;
- Soils that create a nuisance condition, as defined in CP-51 (Ref 30);
- Soil comingled with solid waste. Solid waste can be mechanically separated for disposal and the soil not exhibiting the above characteristics may be re-used as backfill.

3.4.2 Implementation of Area of Concern Remedial Action

A total of fourteen (14) AOCs were identified and delineated as described in the RI/SSIR

(Ref 12). The location and estimated depth of excavation at each identified AOC can be seen on **Figure 18**.

The analytical data from both the surface and subsurface samples from the RI/SSIR (Ref 12) was examined and interpreted to determine the estimated area and depth of the excavation for each AOC. The data from the RI/SSIR sampling that was utilized to identify the AOCs can be seen on **Figures 5 through 10**. Impacted soils exhibiting one or more of the characteristics listed above in **Section 4.4.1 Design Basis and Remedial Goals for AOC Excavation** were not observed through the entirety of the soil column in all identified areas of concern. The estimated maximum depth of soils displaying one or more of the impacted characteristics for all AOCs can be seen on **Figure 18**.

Pre-delineation sampling will be completed prior to excavation activities to confirm the horizontal and vertical extents of each AOC. In large AOC excavations (AOC- 01, AOC-09, AOC-11) a total of one pre-delineation sample will be collected per 2500 square feet of excavation floor, and one pre-delineation sample will be collected from every 55 linear feet of sidewall within the excavations. All remaining AOC excavations will be delineated at a frequency of one sample per 900 square feet of excavation floor and one sample per 30 linear feet of sidewall as outlined in DER-10 (Ref 24). Test pits will be completed using a mini excavator to collect pre-delineation samples. Test pits will be completed to the depth of impact, as identified during the RI/SSIR and shown on **Figure 18**. The excavator bucket will be used to obtain the sample, with a representative soil/fill sample collected from the center of the excavator bucket using a dedicated stainless-steel hand trowel or spoon. Representative sidewall samples will be collected from within the impacted depth range for each AOC, as shown on **Figure 18**. Samples will be transferred to laboratory supplied, pre-cleaned sample containers for laboratory analysis. Samples will be analyzed for Total Arsenic, Total Lead, Total Mercury, TCL SVOCs, and/or PCBs. If elevated PID readings (>20 ppm) are noted during field screening, laboratory analysis may be expanded to include VOC samples. Additional step-out test pits will be excavated 10 feet away from each delineation sample and a second pre-delineation sample will be collected and placed on "hold" with the laboratory, pending the results of the initial samples. If the step-out samples to not meet CSCOs, it will be considered whether it is more cost and time effective to return to the Site for additional pre-delineation sampling, or to collect post-excavation samples as needed during remedial excavation activities. Soil/fill samples will be analyzed in accordance with

USEPA SW 846 methodology with equivalent Category B deliverables to allow for independent third-party data usability assessment. The sampling and analysis plan expected for pre-delineation of AOCs is outlined in **Revised Table 4**.

Soil/fill will be placed next to each test pit during excavation activities. Dust suppression techniques will be performed in accordance with the Community Air Monitoring Plan. Once delineation samples have been collected, soil/fill will be returned to the test pit in the opposite order in which it was removed and compacted to match the existing grade. Only the number of test pits that can be adequately backfilled during a single workday will be excavated. No excavated test pit will be left open overnight.

Pre-qualification waste characterization sampling of AOC-soils for disposal will also be conducted to minimize soil management costs. Samples will be collected from the identified AOCs at target depths in randomly selected locations within the AOC for laboratory analysis. The samples will be sent to an ELAP certified laboratory for analysis of Toxicity Characteristic Leaching Procedure (TCLP) VOCs, TCLP SVOCs, TCLP Metals, TCLP Herbicides and Pesticides, Total PCBs, Reactive Sulfides and Cyanide, and Ignitibility. The waste characterization sampling will be conducted at a minimum of 1 characterization sample for every 500 tons of soil and 1 additional sample for every 1000 tons thereafter. Approximately 23 waste characterization samples are required for disposal of soil/fill to be excavated from the 14 AOCs, based on the existing vertical and horizontal extents. Additional waste characterization samples may need to be collected if the extents of one or more of the AOCs is expanded as a result of the pre-delineation sampling activities.

Excavation activities will begin in the center of the identified AOC and radiate towards the pre-delineated AOC boundaries. Pre-delineation and pre-qualification will allow for live loading of the trucks for transportation and disposal, which is more efficient and less disruptive to the community than stockpiling the soil/fill on-site. All excavation work will be documented via photographs and field notes taken during AOC excavation activities.

During AOC excavations, there is a possibility of coming into contact with impacted groundwater. The excavations will be de-watered, as necessary. The water will either be stored in a temporary storage area or directly pumped through a temporary treatment system for end discharge to the Buffalo Sewer Authority (BSA) under a temporary discharge permit.

Representative samples of the groundwater after treatment will be taken and submitted to both the Department and the BSA in order to ensure compliance with discharge standards. A temporary storage pond for potentially impacted groundwater will be created in a location close to AOC-01. The system will consist of a depression lined in poly and surrounded by a berm to temporarily store water in the vicinity of the temporary treatment system. The temporary groundwater treatment system will be installed along the northern portion of the site, adjacent to the site entrance. The system will consist of an OWS, bag filtration, an air stripper and treatment via Granular Activated Carbon (GAC) prior to discharge into the BSA system.

3.4.3 Site Specific Action Levels

Based on the Site's current and anticipated future use as an active scrap yard as outlined in the Alternative Analysis Report (AAR); Site Specific Action Levels (SSALs) have been defined in the Decision Document (DD) for onsite Soil Cleanup Objectives (SCOs) for metals, total SVOCs, and total PCBs. Site Specific Action Levels (SSALs) of 3,500 mg/kg, 40 mg/kg, 10 mg/kg, 500 mg/kg, and 10 mg/kg for Lead, Arsenic, Mercury, total Polycyclic Aromatic Hydrocarbons (PAHs), and total PCBs, respectively have been selected for the Site. All AOCs with the exception of AOC-06 have been documented to have solid waste comingled with soils and will be excavated for the removal of this solid waste. All excavations will be free of the characteristics listed in **Section 3.5.1 Remedial Goals of AOC Excavations**. These parameters will primarily be monitored during field work and observations will be recorded.

3.4.4 Backfill of Area of Concern Excavations

Area of Concern (AOC) excavations will be backfilled with a combination of soils from on-site excavations from the implementation of the various Remedial Actions (RAs) presented within this Remedial Action Plan (RAP) and imported fill material. Fill material utilized from the implementation of on-site RAs will not display any of the characteristics listed in **Section 3.4.1.** Fill material imported to the site for backfill will meet the requirements in 6 NYCRR Part 375 6.8 (d) (Ref 1). A request to import each fill material will be submitted to the Department for approval prior to import to the site.

3.4.5 Demarcation

Prior to certified clean fill being utilized to backfill the Area of Concern excavations, a demarcation layer will be placed. A woven geotextile fabric (or similar) will be utilized as the demarcation layer between clean fill and remaining soils.

3.4.6 Soil Disposal

Impacted soil/fill excavated from all identified Areas of Concern (AOCs) exhibiting one or more of the characteristics listed in **Section 4.4.1 Design Basis and Remedial Goals for AOC Excavation** will be direct-loaded on trucks for disposal at a New York State Department of Environmental Conservation (NYSDEC) approved landfill. Based on the data presented in the RI/SSIR, it is not expected to encounter any hazardous level soils for disposal. All AOC soils will be sampled for proper waste characterization and creation of a waste disposal profile prior to the start of excavation activities to allow for live loading of trucks for transportation to the selected disposal facility.

Based on the results of the RI/SSIR it is not anticipated to encounter listed hazardous wastes or characteristic hazardous wastes during the remedial actions for the Site. If listed hazardous wastes are encountered below land disposal restrictions, a contained-in determination will be requested from the Department prior to soil management as a non-hazardous solid waste. If characteristic hazardous wastes are encountered during characterization of AOC Soils, the soils will be sent to a permitted treatment and/or disposal facility.

3.4.7 Solid Waste Disposal

Municipal Solid Waste (MSW) encountered during all excavation work is to be removed from the subsurface until no solid waste is observed in the limits of the excavation. MSW encountered in impacted soils exhibiting one or more of the characteristics listed in **Section 4.4.1 Design Basis and Remedial Goals for AOC Excavation** will be disposed of at a New York State Department of Environmental Conservation (NYSDEC) and/or Environmental Protection Agency (EPA) permitted disposal facility along with the impacted soil matrix. Soil that does not exhibit any of the characteristics listed in **Section 4.4.1 Design Basis and Remedial Goals for AOC Excavation** that contains MSW will be removed so that the MSW can be mechanically separated. The MSW will be disposed of at a NYSDEC permitted landfill while the mechanically separated soil will be utilized as backfill on-site.

MODIFICATION 3: REPLACE TEXT IN SECTION 3.8 TO REFLECT USE OF A SOIL/BENTONITE SLURRY IN LIEU OF A CEMENT/BENTONITE SLURRY.

3.8 Vertical Hydraulic Barrier

3.8.1 Design Basis and Remedial Goals

The design basis and remedial goal of the Vertical Hydraulic Barrier (VHB) is to reduce the potential for contaminant migration from the site into the various geologic media surrounding the site as well as to reduce the hydraulic gradient of groundwater to facilitate the removal of Area of Concern (AOC) soils that exhibit one or more of the characteristics listed in the Decision Document (DD) (Ref 22) for the Site and above in **Section 3.4.1**. This engineering control will be installed along the eastern and southern property lines.

The VHB will reduce the hydraulic gradient of groundwater from the surrounding wetland areas to the south and the east. Due to the limited topographic features of the Site, it is anticipated that there will only be a limited difference in hydraulic head across the barrier.

3.8.2 System Components

The Vertical Hydraulic Barrier (VHB) to be installed consists of an at least a 18-inch thick wall of a slurry mixture consisting of native clay soil excavated from the Site, bentonite, and water to achieve a soil slump of about 4-inches (between 2 and 6 inches). The slurry material will have a maximum permeability of 1 x 10^{-6} centimeters per second (cm/s). On-site soils to be utilized include native clay soils that will be generated from the trench excavation that will be completed to install the VHB and native clay soils that will be generated from excavation of the stormwater retention pond and stormwater drainage lines. The native clay soil will need to be segregated from the overlying fill material as the fill material is not adequate for use in construction of the VHB. If sufficient native clay is not excavated during proposed site work, imported soil from a DEC-approved source, subject to import approval per DER-10, will be brought to the Site.

A bench-scale study will be completed to determine the percent of bentonite by weight to add to the native soil. Prior to bench scale testing, soil samples will be collected from the native clay at two test pits, one each along the south and east boundaries of the Site. The bench-scale test will consist of preparing three individual slurry mixtures for each of the samples collected from the on-site soil. The samples will be prepared with soil mixed with

4%, 6%, and 8% powdered bentonite by weight. Water will be added to each mixture until a soil slump of between 2 and 6 inches is achieved. Each slurry mixture will be tested for hydraulic conductivity via ASTM Method D-5084, Method C, Reconstituted Sample. The mixture that achieves a reduced hydraulic conductivity to less than the modeled value of 1 x 10^{-6} will be selected for use in slurry wall installation.

Construction of the VHB will be initiated by mobilizing the necessary equipment including such items as excavators, roll-offs, pumps, and tanks. In addition to the excavator for completing the VHB excavation, one or two excavators will be mobilized for mixing the backfill, loading off-road truck(s) for hauling, and placing soil/bentonite backfill and trench spoils to an on-site stockpile for reuse or landfill disposal as needed. A high-lift will be mobilized to be used to move the soil/bentonite backfill to the slurry trench. Bentonite will be imported to the site in super sacks.

The VHB will be installed along the eastern and southern boundaries of the Site along the interior of the berms that are to be installed at the Site. The excavation will be opened beginning at one end of the VHB. The trench will be excavated to a minimum depth of 2 feet into competent native clay using an 18-inch-wide bucket. The depth of the trench will likely vary between 5 and 8 fbgs, based on known site conditions. A larger bucket will be used if the depth of the excavation exceeds the capabilities of an 18-inch-wide bucket. It should be noted that the height of this VHB will vary due to the varying depth of fill materials and depth to native soils at the Site, however the VHB will be keyed into competent soils a minimum of 2 feet in all locations. As the trench is excavated, native clay soils will be segregated from the overlying fill materials and loaded into a roll-off for mixing. Overlying fill materials will not be used in the low-permeability backfill mix; they will be set aside for characterization and disposal. Buried solid waste will be removed from the excavation if encountered.

Once the backfill has been mixed and the appropriate slump is achieved, as discussed in section 3.8.1, it will be placed into the trench via an excavator bucket. Backfill will continue to be added at the same location until it rises to ground surface. Progressively, the add point for backfill will move toward the leading edge of the excavation and the toe of the backfill will be brought to the excavated face after the completion of the day's excavation work. The following workday, the trenching will continue where the backfill was left off. The leading edge of the soil/bentonite backfill will be cleaned of sediment and a portion of the previous day’s backfill (approximately 3 horizontal feet) will be dug out of the toe to mitigate creation of soil lenses within the backfill material The trenching/backfilling operation will continue until the end of the VHB is obtained and the backfill is placed to surface.

3.8.3 Quality Assurance/Quality Control of the Vertical Hydraulic Barrier

The excavation for the installation of the vertical hydraulic barrier (VHB) will be completed utilizing an excavator with an 18-inch-wide bucket, or larger as needed. Trenching will continue until the excavation has progressed at least two feet into the competent native soils. This depth will be monitored and recorded approximately every 25 feet to ensure that the VBH is properly keyed into the competent native soils. Confirmation of the key consists of measuring the depth of the trench (1) when the top of the native aquitard is encountered and (2) after completion of the trench (Ref 33). The excavation will be inspected for any soughing, which may indicate the trench will need cleaning prior to placement of the soil/bentonite backfill material. The trench will be inspected and approved by the Engineer of Record prior to the placement of the soil/bentonite backfill.

Slump cone testing will be completed for each batch of soil/bentonite slurry mixture to ensure a slump of 2-4” is achieved prior to placement. Daily permeability tests will be conducted per ASTM D-5084 on samples of the soil/bentonite slurry backfill obtained from the mixing area to determine compliance with the maximum permeability specification (i.e. 1 $x10^{-6}$ cm/s). If permeability test results for a workday do not meet the maximum permeability specification, then the entire length of the slurry trench constructed on that workday shall be retested by collection of Shelby tube samples from the surface of the slurry wall at 10-foot intervals and performance of permeability tests per ASTM D-5084 on the undisturbed samples. For any such retesting that fails to meet the maximum permeability specification, the length of the slurry wall between passing permeability results shall be excavated to the design depth and reconstructed in accordance with the design specifications. Backfill permeability testing will be completed by an accredited laboratory utilizing American Society for Testing and Materials (ASTM) practices for measuring permeability.

A survey of the final VHB alignment will be conducted for inclusion into future site documents including but not limited to the Site Management Plan and Final Engineering Report.

3.8.4 Subsurface Barrier Maintenance

Subsurface geophysical barriers present challenges to inspect their continuity and effectiveness. Procedures for inspecting and maintaining the vertical hydraulic barrier system will be outlined in the Site Management Plan that will be developed for post remedial maintenance of the Site.

TABLE

BENCHMARK

REVISED TABLE 4
SAMPLING AND ANALYSIS PLAN
REMEDIAL ACTION PLAN ADDENDUM
HURWITZ COMPANY SITE
BCP SITE NO. C915290
267 MARILLA STREET
BUFFALO, NEW YORK

Area of Concern (AOC)	Location	Analysis[1]				
		Total Arsenic	Total Lead	Total Mercury	Total SVOCs	Total PCBs
#1	Floor	11	11	11	--	11
	Sidewall	13	13	13	--	13
#2	Floor	3	--	3	--	--
	Sidewall	7	--	7	--	--
#3	Floor	3	--	3	--	3
	Sidewall	6	--	6	--	6
#4	Floor	--	--	--	--	2
	Sidewall	--	--	--	--	6
#5	Floor	--	--	1	--	1
	Sidewall	--	--	4	--	4
#6	Floor	2	2	2	--	--
	Sidewall	6	6	6	--	--
#7	Floor	4	4	4	--	--
	Sidewall	8	8	8	--	--
#8	Floor	4	4	4	--	--
	Sidewall	8	8	8	--	--
#9	Floor	4	--	4	--	4
	Sidewall	7	--	7	--	7
#10	Floor	--	--	--	--	4
	Sidewall	--	--	--	--	4
#11	Floor	--	2	2	2	2
	Sidewall	--	6	6	6	6
#12	Floor	4	4	4	--	--
	Sidewall	7	7	7	--	--
#13	Floor	3	--	3	--	--
	Sidewall	7	--	7	--	--
#14	Floor	--	--	2	--	--
	Sidewall	--	--	5	--	--
QC Samples[2]	Matrix Spike	6	4	7	1	5
	Matrix Spike Duplicate	6	4	7	1	5
	Totals	**119**	**83**	**141**	**10**	**83**

Notes:
1. Analyses will be performed via USEPA SW-846 methodology with equivalent Category B deliverables package.
2. Blind duplicate and MS/MSD samples will be collected at a frequency of 1 per 20 samples/media collected.