October 16, 2020 Reference No. 11219347

Eugene W. Melnyk, P.E. ***Original Sent Via Email***
New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203

Dear Mr. Melnyk:

Re: Work Plan to Conduct Pre-Design Investigation for ERH Remedy
1130 Niagara Street Site, NYSDEC Site No. C915284

1. Introduction

GHD Consulting Services Inc. (GHD) submitted the revised Remedial Investigation/Alternatives Analysis Report/Interim Remedial Measures Report to the New York State Department of Environmental Conservation (NYSDEC) on August 20, 2020 on behalf of Jenesis Development, LLC (Jenesis). Although public review/comment is ongoing, GHD does not anticipate significant comments that would affect the proposed remedy and, in the interest of progressing the project, has prepared this work plan to implement a Pre-Design Investigation (PDI). The PDI results will be used to establish horizontal and vertical treatment zone limits, provide the information needed to permit design of the proposed in-situ Electrical Resistance Heating (ERH) remedy for Site Parcels 1 and 2, and prepare a scope of work for selection of a remediation contractor.

2. Scope of Work

GHD completed a PDI in 2016 consisting of 40 direct-push boreholes to assess the presence of dense non-aqueous phase liquid (DNAPL) and define the limits of grossly contaminated waste targeted for excavation and off-Site disposal as an interim remedial measure (IRM) prior to implementation of a total Site remedy. This IRM was not implemented and in 2020, the Site remedy was changed to in-Situ ERH. ERH will target a larger area of impacted soils and bedrock, not just those soils with gross contamination/DNAPL presence. GHD will build on the previous source area delineation borings completed in 2016 to define the target area for ERH (horizontal and vertical extents) and provide additional pertinent site-specific data (e.g., soil porosity, fraction organic carbon [foc]) to facilitate the design of the ERH system.

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2.1 Installation of Soil Borings

GHD will retain Earth Dimensions, Inc. of Elma, New York to complete all drilling activities. GHD personnel will oversee the installation of 20 soil borings building on the 2016 sampling grid, with an option to install an additional 16 step-out borings as field screening and laboratory results warrant. Twelve borings at locations previously sampled in 2016 will be installed to confirm the previous results and fill in data gaps (i.e., laboratory analysis of additional soil intervals). All borings will be completed to the top of bedrock. The proposed boring locations are presented on Figure 1.

GHD personnel will log the soil cores, classifying soil using a modified version of the Unified Soil Classification System (USCS). During borehole logging, soil samples will be field screened using a hand-held flame ionization detector (FID) and a hydrocarbon dye test for volatile organic compounds (VOCs) and DNAPL, respectively, to aid in directing step-out borings. Field screening will be completed in the following manner:

1. Open acetate macro-core liner.
2. Conduct initial FID VOC field screening with readings from every 2.5-foot interval for 5-foot macro-cores or 2.0-foot interval for 4-foot macro-core and document these readings.
3. Conduct a visual inspection of the soil core for evidence of DNAPL and document the observations.
4. Obtain soil samples at 2-2.5-foot intervals for field screening. It is anticipated that up to 384, 2-2.5-foot intervals will be field screened. Soil samples should be collected preferentially from depths where initial FID results or visual inspection of the soil core indicates the potential for DNAPL or elevated VOCs. Uniform quantities of soil samples should be collected from each interval. The following steps will be completed to fully field screen the soil samples:
    a. Place a portion of the sample in a glass sample jar for a dye shake test using Cheiron OilScreenSoil (Sudan IV) ®, or equivalent product. The manufacturer's instructions will be referred to for the appropriate usage of the dye shake test kits. The DNAPL will turn a red color if present. Document the results.
    b. Place the remaining soil sample in a resealable plastic bag for headspace analysis. Warm the sample bags to a consistent temperature to promote VOC volatilization, measure with the FID, and document the reading.

GHD will collect a representative soil sample from each sampling interval for laboratory analysis for VOCs.

Upon completion of the soil borings, a groundwater grab sample will also be collected for VOC analysis from each borehole where sufficient groundwater is available. The groundwater data will supplement the soil data for use in the design analysis. Groundwater grab samples will be collected using disposable microbailers lowered through the drilling rods.

2.2 Installation of Bedrock Monitoring Wells

GHD proposes to install five shallow bedrock monitoring wells to define and monitor bedrock water quality in the upper 5 feet of bedrock, with an option to install an additional two shallow bedrock wells based on the overburden observations. Due to the location of the wells within the anticipated heating zone, the wells will be constructed of stainless steel since the elevated temperatures generated by ERH will cause PVC to distort and/or melt.[1]

The overburden will be drilled to the bedrock surface, then bedrock cores taken to a depth of 6 feet into the top of bedrock using an NQ 2-inch core barrel. The coreholes will be reamed to 6-inches in diameter to accommodate well installation. The bedrock wells will consist of 5 feet of 2-inch stainless screen (010 slot) and stainless steel riser, sand pack to 1 foot above the screen (top of bedrock), 3 feet of bentonite seal, followed by bentonite/cement grout to ground surface. The wells will be finished with locking J-plugs and flush-mount well casings.

The newly installed bedrock wells will be developed a minimum of 24-hours after installation prior to sampling for VOCs.

2.3 Bedrock Assessment

With the assistance of the drilling subcontractor, GHD will complete packer testing at bedrock monitoring wells MW-102, MW-103, and MW-105 to assess whether bedrock groundwater impacts can be isolated to the shallow bedrock or are consistent throughout the bedrock unit. GHD estimates up to 15 bedrock groundwater samples will be collected for VOC laboratory analysis.

The data generated by the packer testing along with the additional VOC data from the new shallow bedrock monitoring wells will be used to establish the vertical extent for the ERH system.

2.4 Laboratory Analysis

Soil samples will be collected in Terracore sample containers provided by the laboratory, properly packaged and cooled, and shipped to Eurofins TestAmerica Laboratories in Amherst, New York under chain-of custody protocols. The soil samples will be analyzed for TCL VOCs via method EPA 8260. We will collect up to ten soil samples from various soil units and portions of the Site for foc analysis by Eurofins TestAmerica. In addition, we will collect up to six undisturbed soil samples from various soil units for porosity measurements by Integrated Geosciences Laboratories, LLC of Houston, Texas.

Groundwater samples will be sent to Eurofins TestAmerica for Target Compound List (TCL) VOCs via method USEPA 8260.

Upon completion of the laboratory analysis, all chemical data will be validated by a GHD chemist.

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[1] GHD and Jenesis recognize that existing overburden and bedrock monitoring wells will need to be converted to stainless steel to be used as monitoring points during the remediation. The replacement of the existing wells will occur during the remedy construction phase along with drilling for the electrodes, vapor recovery wells, and temperature probes.

3. Reporting

Data from the PDI will be submitted to the NYSDEC in a brief summary report after completion of field activities. The PDI data, along with data generated from the RI and source delineation investigations will then be used to generate a 3-D model and scope of work that will be provided to qualified contactors to solicit bids to complete the ERH remedy. Once an ERH contractor is selected, GHD and the contractor will prepare the detailed remedial design for the remedy. The remedial design document will include details such as the number and placement of electrodes, power requirements for destruction of defined contaminant mass, power distribution systems, vapor recovery and treatment system, necessary permits, safety and O&M plans, and other pertinent project details. The model will aid in the design of the ERH system and will serve as a baseline representation of pre-remediation conditions. The model can then be updated with post-remediation data to visually show the progress in cleanup.

4. Proposed Schedule

GHD anticipates field activities to commence on or about November 9, 2020 and proceed for up to 3 weeks. GHD anticipates submission of the brief data summary report to the NYSDEC within 6 weeks of the completion of field activities.

The 3-D model and Bid Document/Scope of Work will be prepared with bidding anticipated to commence approximately 10 weeks after completion of field activities. GHD anticipates submission of the remedial design to the NYSDEC approximately 2 months after ERH contractor selection.

The updated estimated project schedule is attached as Figure 2. Issuance of the Certificate of Completion for the Site is anticipated in calendar year 2022.

Please do not hesitate to contact me at (716) 362-8813 if you have any questions.

Sincerely,

GHD

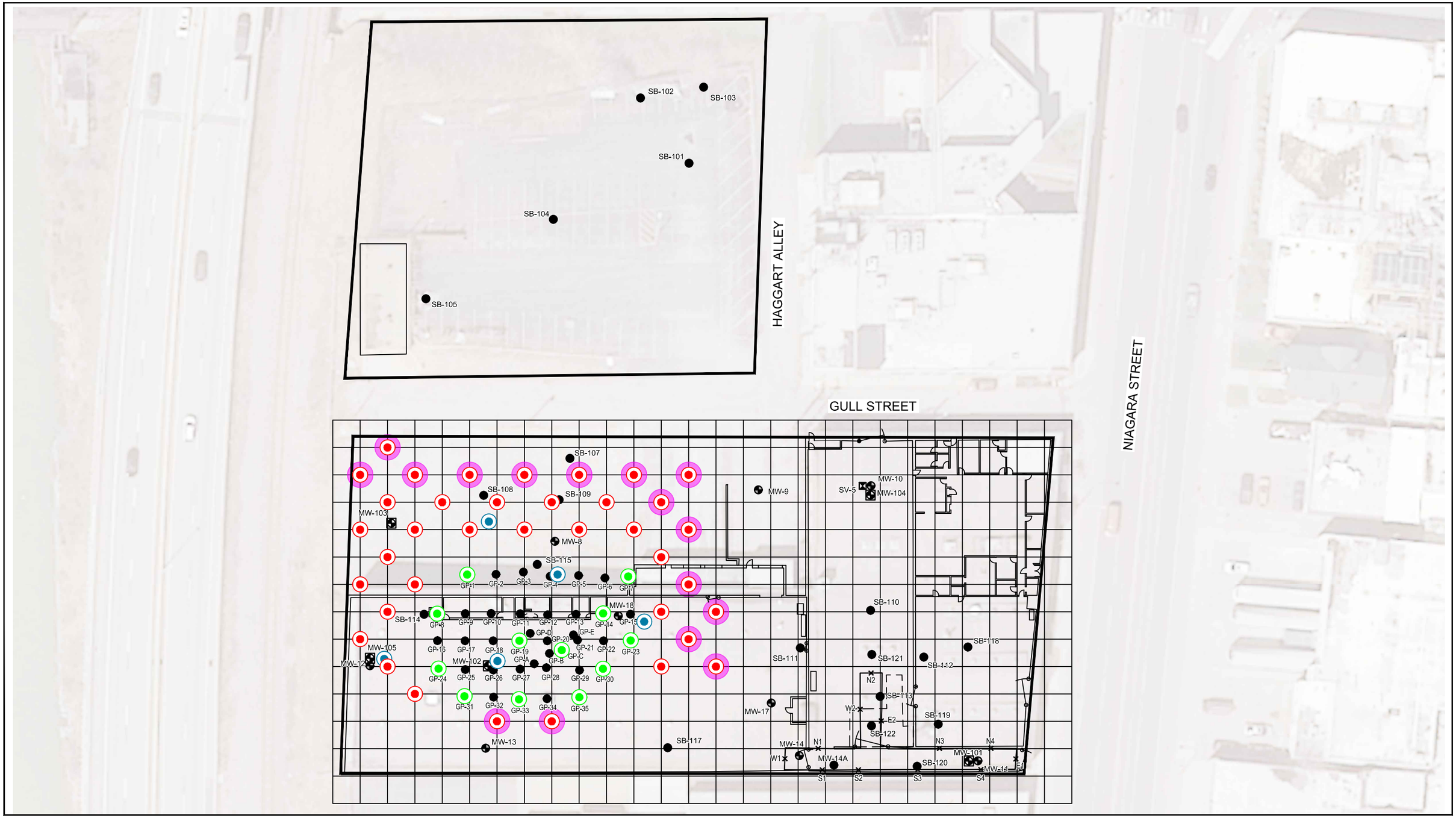
Christopher P. Martin, PE

Vice President

CPM/las/1

Attachments: Figures 1 and 2

cc: Ms. Katherine Galanti – GHD



0 20 50ft

LEGEND

- PROPOSED SOIL/GROUNDWATER SAMPLING POINT
- PROPOSED TOP OF BEDROCK MONITORING WELLS
- PROPOSED FORMER GEOPROBE SAMPLING POINTS TO BE RE-SAMPLED
- OPTIONAL SOIL/GROUNDWATER SAMPLING POINT

GHD

BUFFALO, NEW YORK
1130 NIAGARA STREET SITE - C915284

PROPOSED PRE-DESIGN INVESTIGATION SAMPLING PLAN

11219347-01
10/13/20

FIGURE 1

CAD File: N:\US\Buffalo\Projects\564\11219347\Digital_Design\ACAD 2017\Figures\letter\11219347-01(MELNYK1)\11219347-01(MELNYK1)GN-NI001.dwg

FIGURE 2
ESTIMATED PROJECT SCHEDULE
BROWNFIELD CLEANUP PROGRAM PROCESS
1130 NIAGARA STREET SITE, NYSDEC SITE #C915284
BUFFALO, NEW YORK