LANGAN

Memorandum

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To: Javier Perez-Maldonado - NYSDEC

From: Christopher McMahon

Info: Amanda Forsburg, Steven Ciambruschini - Langan

Date: 15 March 2021
Revised 19 March 2021

Re: Supplemental Soil and Groundwater Investigation Work Plan
23-30 Borden Avenue
Queens, New York
Langan Project No.: 100766601
BCP Site No. C241238

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has prepared this Supplemental Soil and Groundwater Investigation Work Plan for the property located at 23-30 Borden Avenue, Queens, NY. The site is enrolled in the Brownfield Cleanup Program (BCP) as Site No. C241238. The purpose of this investigation is to address feedback provided by New York State Department of Environmental Conservation (NYSDEC) in the 3 December 2020 and 17 February 2021 comment letters for the draft Remedial Investigation Report (RIR) and the 19 February 2021 comment letter to the draft Remedial Action Work Plan (RAWP). The following scope of work was to supplement the NYSDEC-approved Remedial Investigation Work Plan (RIWP), dated 3 February 2020. This investigation will be conducted according to the methodologies and protocols outlined in the RIWP, including the Health and Safety Plan (HASP) and Community Air Monitoring Program (CAMP) and Quality Assurance Project Plan (QAPP) provided in RIWP Appendices A and B, respectively. A proposed boring location plan is provided as Figure 1.

SOIL SAMPLING METHODOLOGY AND ANALYSIS

In the 3 December 2020 RIR Comment Letter, NYSDEC commented:

> *It appears that VOCs and semi-volatile organic compound (SVOCs) impact in soil was not vertically delineated in certain areas of the site. It is recommended that those areas of the site be vertically delineated under the pending IRM, a pre-design investigation or the pending RAWP.*

Follow-up email correspondence from NYSDEC identified that the comment was specifically associated with soil boring locations LSB-20 and LSB-21.

A licensed driller will advance two soil borings (LSB-20A and LSB-21A) to about 28 feet below grade surface (bgs) and 26 feet bgs at locations corresponding to LSB-20 and LSB-21, respectively. Soil will be screened continuously from surface grade to the boring termination depth for field evidence of contamination (odor, staining, and photoionization detector [PID] readings above background level). Five discrete soil samples will be collected from each soil boring at two foot intervals to vertically delineate the deepest samples collected during the RI. One duplicate sample, one field blank sample, and one trip blank will also be collected. The shallowest sample will be run from each boring location; the remaining samples will be placed on hold pending the initial results.

In the 19 February 2021 RAWP Comment Letter, NYSDEC commented:

> *Throughout the RIR and RAWP language suggest that CVOCs impacts to groundwater and potential impacts to soil vapor are likely associated with an off-site source to the south. Additional sampling will be ultimately required to confirm that onsite impacts to groundwater and/or soil vapor are associated with a potential off-site source and should be collected by the Volunteer to assist NYSDEC and NYSDOH with the environmental exposure assessment, presumably under a supplemental investigation or pre-design investigation.*

A licensed driller will advance ten soil borings (LSB-36 through LSB-45) to approximately 15 feet bgs in a grid pattern surrounding the two wells at which CVOCs were previously detected during the RI (LMW-2 and LMW-14) to assess for an on-Site source of CVOCs in soil. Soil will be screened continuously from surface grade to the boring termination depth for field evidence of contamination as discussed above. Up to two discrete soil samples will be collected from each soil boring; on soil sample will be collected from the two-foot interval immediately above the groundwater interface, and one sample will be collected if evidence of impacts based on the field screening is observed.

Samples will be collected in laboratory-supplied containers and will be sealed, labeled, and placed in an ice-chilled cooler (to attempt to maintain a temperature of about 4°C) for delivery to a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. Soil samples will be analyzed for Part 375 List and Target Compound List (TCL) volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) under a standard five-day turnaround schedule. Category B deliverables will be requested from the laboratory and a Data Usability Summary Report (DUSR) will be prepared.

GROUNDWATER SAMPLING METHODOLOGY AND ANALYSIS

In the 19 February 2021 RAWP Comment Letter, NYSDEC commented:

> *Throughout the RIR and RAWP language suggest that CVOCs impacts to groundwater and potential impacts to soil vapor are likely associated with an off-site source to the south. Additional sampling will be ultimately required to confirm that onsite impacts to groundwater and/or soil vapor are associated with a potential off-site source and should be collected by the Volunteer to assist NYSDEC and NYSDOH with the environmental exposure assessment, presumably under a supplemental investigation or pre-design investigation.*

NYSDEC also commented:

> *The RI identified soils (e.g., PAHs hot spots/source areas, grossly contamination areas, vicinity of LSB-20 and LSB-21 boring) above/below the water table with concentration well in excess of the Protection of Groundwater SCOs (PWSCOs) that may constitutes a continuing source to the groundwater contamination in the area.*

A licensed driller will install a total of twelve one-inch monitoring wells (LMW-23 through LMW-32) to approximately 15 feet bgs (corresponding to approximately 5 feet into the groundwater table). Ten wells will be installed in the soil borings discussed above in a grid pattern surrounding the two wells at which CVOCs were previously detected during the RI (LMW-2 and LMW-14) to assess contaminant concentration gradients and assess potential on and offsite source contribution to previously observed groundwater impacts. Two monitoring wells (LMW-33 and LMW-34) will also be installed in the two borings advanced as part of the soil delineation discussed above to assess if PAHs found in soil are a source of groundwater contamination. The twelve newly installed wells will be developed by pumping and surging the screened interval.

A minimum of one week following well development, one groundwater sample will be collected from each of the twelve monitoring wells, plus quality assurance/quality control (QA/QC) samples. Prior to sampling, the monitoring wells will be gauged for static water levels and purged via USEPA low-flow sampling methods until the physical and chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, turbidity). Samples will be collected with a peristaltic pump and dedicated polyethylene tubing. Purge water will be containerized for off-site disposal.

Samples will be collected in laboratory-supplied containers and will be sealed, labeled, and placed in an ice-chilled cooler (to attempt to maintain a temperature of about 4ºC) for delivery to a NYSDOH ELAP-certified laboratory. Twelve groundwater samples (LMW-23 through LMW-34) will be analyzed for TCL VOCs and five groundwater samples (LMW-25, LMW-26, LMW-31, LMW-33 and LMW-34) will also be analyzed for total and dissolved PAHs under a standard five-day turnaround schedule. Category B deliverables will be requested from the laboratory and a DUSR will be prepared.

MONITORING WELL SURVEY

In the 17 February 2021 RIR Comment Letter, NYSDEC commented:

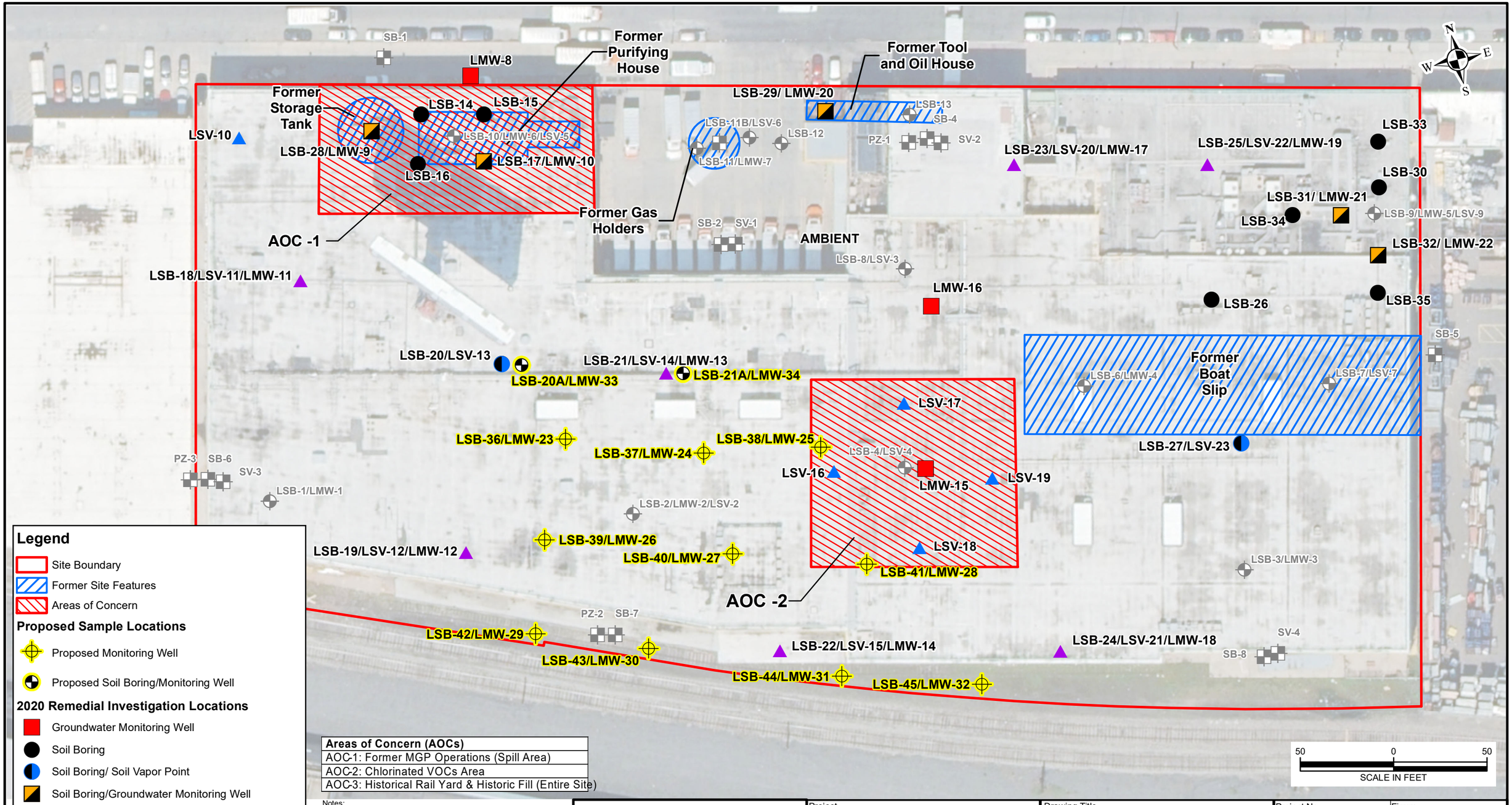
> *Figure 3, Potentiometric Surface Map: The groundwater elevation contours and flow direction may be incorrect and need to be reevaluated in this figure.*

As the monitoring wells sampled as part of the RI have been damaged due to the slab demolition completed in accordance with the NYSDEC-approved Interim Remedial Measures Work Plan (IRMWP) dated 3 April 2020, the elevation of the twelve new wells installed as discussed above will be surveyed to assess groundwater flow direction. LMW-8, which was installed in the sidewalk to the north of the Site during the RI and remains intact, will also be gauged for the generation of an updated Pontentiometric Surface Map.

REPORTING

Soil analytical results will be compared to NYSDEC Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use, Protection of Groundwater, and Commercial Restricted Use Soil Cleanup Objectives (SCOs). The results of the additional investigation will be reported in a revised draft of the RIR and incorporated into the remedy design in a revised draft RAWP for the Site.

Attachment: Figure 1 – Additional Investigation Sample Location Plan



Legend

- Site Boundary
- Former Site Features
- Areas of Concern

Proposed Sample Locations

- Proposed Monitoring Well
- Proposed Soil Boring/Monitoring Well

2020 Remedial Investigation Locations

- Groundwater Monitoring Well
- Soil Boring
- Soil Boring/ Soil Vapor Point
- Soil Boring/Groundwater Monitoring Well
- Soil Boring/Groundwater Monitoring Well/Soil Vapor Point
- Soil Vapor Point

Historic Investigation Locations

- 2015 Limited Phase II Sample Locations (Roux)
- 2019 Limited Phase II Sample Locations (Langan)

Areas of Concern (AOCs)
AOC-1: Former MGP Operations (Spill Area)
AOC-2: Chlorinated VOCs Area
AOC-3: Historical Rail Yard & Historic Fill (Entire Site)

Notes:
1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 20v5 copyrighted by the New York City Department of Planning.
3. Former site features and sample locations are approximate.
4. 2019 Limited Phase II Sample Locations (Langan) obtained from Phase II Environmental Investigation Report conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. dated 4/13/2019.
5. 2015 Limited Phase II Sample Locations (Roux) obtained from "Limited ESA Phase II Sampling Plan" conducted by Roux Associates, Inc. 12/3/2015.
6. Sample locations for the RI were collected using the ArcGIS Collector application on a tablet utlizing the GPS location.

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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project	23-30 BORDEN AVENUE BLOCK No. 68, LOT No. 38 LONG ISLAND CITY QUEENS NEW YORK
Drawing Title	ADDITIONAL INVESTIGATION SAMPLE LOCATION PLAN
Project No.	100766601
Date	3/19/2021
Scale	1 " = 50 '
Drawn By	ATR
Figure	1

Path: \\langan.com\data\PAR\data6\100766601\Project Data\ArcGIS\MXD\Environmental_Figures\2021-03 - Supplemental Sampling Work Plan\Figure 1 - Additional Investigation Sample Location Plan.mxd Date: 3/19/2021 User: ibaker Time: 3:00:34 PM