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September 16, 2022
via email

THRUWAY PLAZA OF ROCKLAND ASSOCIATES
C/O ROCKLAND REALTY
106 Airport Executive Park
Nanuet, New York 10954

Regarding: DRAFT INTERIM REMEDIAL MEASURES PLAN
Proposed Commercial Development
286-330 NYS Route 59
Town of Clarkstown (Nanuet), Rockland County, New York

Dear Sir/Madam:

Dynamic Earth, LLC (Dynamic Earth) is pleased to submit for your review the attached *Draft Interim Remedial Measures (IRM) Plan* for the above-referenced Site. This plan has been prepared in support of a P-Site Designation by the New York State Department of Environmental Conservation (NYSDEC).

PROJECT BACKGROUND

Dynamic Earth was provided with a March 30, 2022 *Limited and Focused Subsurface Investigation Report* prepared by Subsurface Investigations Geology, D.P.C (SIG) for review. The report identified historic on-Site dry-cleaning operations as a Recognized Environmental Condition (REC). Based on the analytical data results collected by SIG during the site investigation, chlorinated volatile organic compounds (CVOCs) and toluene were identified at concentrations exceeding the New York State Department of Environmental Conservation (NYSDEC) Groundwater Criteria.

Based on conversations with the NYSDEC and the client, groundwater contamination at the Site will be investigated through a P-Site administrative consent order (ACO). The "P-Site" classification is used for sites where preliminary information indicates that a site may have contamination that makes it eligible for consideration for placement on the Registry of Inactive Hazardous Waste Disposal Sites (commonly referred to as the list of State Superfund Sites).

Through discussions with NYSDEC, Dynamic Earth understands that a component of P-Site classification includes interim remedial measures (IRMs) to demonstrate that the resulting contamination from historic operations does not present a significant threat to public health or the environment. As such, the below scope of work is proposed once the Site is designated as a P-Site by the NYSDEC.

Item 1: Pre-Injection Baseline and Post-Injection Sampling

Groundwater sampling events will be necessary to measure the effectiveness of the interim remedial measures. As previously approved in Dynamic Earth's May 26, 2022 proposal, Dynamic Earth will install four overburden monitoring wells prior to the implementation of the interim remedial measures. The wells will be installed within the CVOC plume source area, downgradient locations and side-gradient locations to a maximum depth of 25 feet below ground surface or refusal to evaluate current groundwater conditions. The installation and sampling of the bedrock well to evaluate

groundwater in the bedrock aquifer will be completed following evaluation of the post-injection sampling event.

Approximately two weeks following completion of the monitoring well installations and approximately two weeks prior to the commencement of the below IRMs, Dynamic Earth will conduct monitoring well sampling activities pursuant to NYSDEC regulations. One groundwater sample will be collected from each of the newly installed monitoring wells. Two field/trip blank quality assurance/quality control (QA/QC) samples will also be submitted for laboratory analyses. Groundwater samples will be collected and analyzed by an NYSDEC-certified laboratory for volatile organic compounds (VOCs), nitrate, chloride, sulfate and total organic carbon (TOC). Along with laboratory analyses, field measurements will be collected during this sampling event, including oxidation reduction potential (ORP), pH, dissolved oxygen (DO) and temperature. A slug test will also be performed to estimate transmissivity and hydraulic conductivity in advance of the injection events.

Costs provided herein include laboratory analytical costs, the additional mobilization, equipment and oversight needed to install the overburden monitoring wells and collect field measurements prior to the injection events.

Item 2: Soil Sampling & Evaluation Services

As discussed with the NYSDEC, P-Site classification requires a soil evaluation for all regulated compounds. As the previous sampling conducted by SIG did not include an investigation beyond the contaminants of concern (i.e., VOCs), Dynamic Earth will collect up to two soil samples during the monitoring well installation event in anticipation that this analysis and evaluation will be requested by the NYSDEC following establishment of the P-Site ACO. Dynamic Earth assumes soil sampling activities will be conducted during the same mobilization as the monitoring well installations. Should another mobilization be required, such costs will be billed in addition to the lump sum cost provided below following approval by the client.

All soils excavated from monitoring well installations will be field screened using a photoionization detector (PID). If evidence of soil impacts is identified, soil samples will be collected from the six-inch depth interval exhibiting evidence of soil impacts. Soil samples will be submitted to an NYSDEC-certified laboratory and analyzed for the NYSDEC initial soil cleanup objectives (SCO) priority list, per- and polyfluorinated alkyl substances (PFAS) and 1,4-dioxane. All samples will be analyzed on a standard one-week turnaround time. Expedited analysis is available for a laboratory-based surcharge. Results of this evaluation will be presented in Dynamic Earth's *Remedial Investigation Report*. In the event that contaminants are identified in soil, additional actions may be required.

Item 3: Interim Remedial Measures and Oversight Services – Groundwater Injections

To reach a goal of reducing current concentrations of contaminants of concern to levels appropriate for monitored natural attenuation (MNA) at the site, Dynamic Earth and a remediation contractor will mobilize to the Site for up to six days to install injection points and subsequently inject emulsified vegetable oil (EVO) with a sodium bicarbonate pH buffer additive, sodium ascorbate water amendment and an inoculation of TSI-DC bacterial culture containing a microbial culture known to degrade chlorinated compounds all the way through and including vinyl chloride. The remedial

material will be delivered via direct push injection methods into overburden formations at the Site. Approximately 2,583 pounds of EVO will be injected with 10 liters of TSI-DC across the 4,200 square foot injection area. These materials would be diluted with approximately 2,835 gallons of water and delivered to at least 42 direct push injection locations.

The injection borings will be advanced by direct push to depths ranging from 23 to 26.5 feet below ground surface with delivery of the remedial material from 12 feet below grade. Delivery volumes at each point could vary depending upon final dilution volume and number of points targeted. A potable water holding tank (typically 1,000-gallons in capacity) will be provided and staged by the EVO dilution system in order to bulk and stage potable water. Dynamic Earth assumes that a water source (i.e., hydrant) will be available within 150 feet of the set-up area for the delivery system.

Additional Considerations

In the event that the IRMs described above do not achieve the remedial goals for the Site, further actions will be evaluated, including groundwater monitoring to support natural attenuation. If the IRM does achieve the site's overall remediation goals, the NYSDEC will draft a Proposed Remedial Action Plan (PRAP) that proposes no further action at the site and solicits public comment.

Groundwater samples will be analyzed on a standard one-week turnaround time by a New York-certified laboratory. Temporary well point locations will be backfilled once with excavated soil, and borings in pavement/concrete areas will be restored at the surface with asphalt cold patch and/or concrete patch, where appropriate. The owner should anticipate some settlement at boring locations, and future maintenance may be required.

The required NYSDEC reporting tasks are not explicitly included in the above scope of work, including but not limited to, Remedial Investigation Workplans, Remedial Investigation Reports, Remedial Action Workplans and/or Remedial Action Reports; however, will be prepared as necessary to complete remediation.

Please contact us with any questions or comments regarding the enclosed proposed scope of work at (267)-685-0276.

Sincerely,

DYNAMIC EARTH, LLC

Christopher J. Zieger, LSRP
Senior Principal