January 28, 2008

Mr. Hank Willems Engineering Geologist 1 MGP Remedial Section, Bureau C Division of Environmental Remediation New York State Dept. of Environmental Conservation 625 Broadway Albany NY 12233-7017

Re: Central Hudson Gas & Electric Corporation
North Water Street Site – Poughkeepsie
NYSDEC Site No. C314070
Work Plan for Supplemental Land/River Investigations

Dear Mr. Willems:

In response to a letter from the New York State Department of Environmental Conservation (NYSDEC) to Central Hudson Gas & Electric Corporation (CHGE) dated November 7, 2007, and consistent with discussions during a November 29, 2007 project meeting in Albany, enclosed is a work plan for supplemental land and river investigations at CHGE's North Water Street site in Poughkeepsie (the site). The work plan presents the scope of work for the following investigation activities[1]:

Subsurface investigations in the natural gas regulator station area
Test pit excavation to evaluate gas line bedding materials
PCB soil sampling in the former electric plant area
Video inspection of former discharge pipes
Low-tide bulkhead/shoreline inspections
Sediment investigations within the gas line buffer zone
Near-shore sediment borings

Investigation activities similar to those that have previously been performed at the site (e.g., soil borings, well installations) will be conducted following procedures submitted to the NYSDEC in previous work plans[2]. Accordingly, detailed descriptions of the procedures for these activities are not repeated in the enclosed work plan. For investigation activities that haven't previously been conducted at the site (e.g., DART samplers) the enclosed work plan includes more detailed descriptions of the investigation procedures.

[1] A separate scope of work for enhanced NAPL recovery pump testing at wells NMW-116S and NMW-117S was submitted to the NYSDEC on January 17, 2008, and approved by the NYSDEC on January 20, 2008.

[2] Refer to *Work Plan – 2004 Land and River Investigations* (Blasland, Bouck & Lee, Inc. [BBL], September 2004).

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We anticipate that the proposed work will be initiated in the spring of 2008. A data summary report will be submitted to the NYSDEC following completion of the field work and receipt of analytical data.

In addition to transmitting the work plan, this letter also provides responses to certain comments set forth in

the NYSDEC's November 7, 2007 letter. The specific NYSDEC comments are repeated below, followed by CHGE's responses.

"Photographs of NAPL seeps from the bulkhead area soils documented in the 2003 Land Investigation Report."

Photographs taken during a November 14, 2003 low-tide shoreline reconnaissance were included in the *Data Report – 2003 Land Investigation Activities* (BBL, May 2004). As discussed in Section 11.1 of that report, during the reconnaissance, NAPL was observed within silty sand/gravel/cobble material at the edge of water, approximately 10 to 15 feet from the existing bulkhead, adjacent to soil boring locations SB-112 and SB-113. No "NAPL seeps" were observed along the bulkhead during the November 2003 reconnaissance, or any other site visits. Although it appears that some NAPL-impacted fill material is present along the bulkhead, active, ongoing NAPL seeps have not been observed.

"It should be noted that approximately 10 gallons of NAPL have been recovered from MW-116S although the SB-116 boring log does not show a NAPL interval."

Although a distinct NAPL-impacted soil interval was not observed during drilling at SB-116, NAPL was observed on slough between 42 and 50 feet below ground surface (bgs), indicating that NAPL impacted soils were present above this interval. It is likely that NAPL-impacted soils were not recovered in split-spoons due to incomplete recoveries in some of the fill materials, and the presence of wood immediately above the silt/clay unit (where NAPL was observed in the adjacent SB-115 and SB-117 borings). Accordingly, the accumulation of NAPL in well NMW-116S was not completely unexpected. Also, it should be noted that only 6 gallons of NAPL were recovered from NMW-116S during the during the first six months of monitoring, and only 4 gallons of NAPL have been recovered during the subsequent three and one-half years of monitoring (i.e., NAPL appears to have reached residual saturation levels in the immediate vicinity of NMW-116S).

"The southwestern section of the propane peaking plant is a potential source area built on the footprint of historic tar handling structures. To date, two soil borings, and seven TARGOST probes have been progressed in the northwestern corner of the peaking plant. Coal tar and/or NAPL impacts are noted in seven of these locations.

Three soil borings within the relief holder footprint adjacent to the peaking plant show that bedrock is close to the ground surface beneath much of the peaking plant. One of these borings, (SB-302) encountered a zone of NAPL at the top of bedrock.

No further subsurface investigation has been performed in this area due to the current use. The shallow nature of bedrock, the observation of NAPL in soil and in bedrock, and the location of historic tar handling infrastructure in the peaking plant indicate that this area may be the site of NAPL migration into bedrock and into fill adjacent to the Hudson River."

Two soil borings (SB-335 and SB-336) and seven TarGOST probes (TB-15 through TB-21) have been advanced in the northwest corner of the natural gas regulator station/propane peaking plant area. NAPL (or evidence of NAPL) was observed at both borings and all seven TarGOST probe locations. However, monitoring wells were installed in SB-335 and SB-336 with screens spanning the NAPL-impacted intervals, and no NAPLs have been detected in the wells in the three years of monitoring conducted following installation. Likewise, no NAPLs were detected in a temporary bedrock monitoring well installed in boring SB-302 (located within the former relief holder foundation). These data indicate that, although NAPL-impacted soils are present in portions of the natural gas regulator station/propane peaking plant area, pools

of NAPL with the potential to migrate into the Hudson River are not present in this area. This is further evidenced by the fact that NAPLs have only been detected in two (NMW-116S and NMW-117S) of the eight overburden NAPL monitoring wells and none of the 13 bedrock NAPL monitoring wells installed between the river and the natural gas regulator station/propane peaking plant area (north of MW-5). Nevertheless, CHGE has proposed additional investigation activities in this area, as requested by the NYSDEC.

"It is clear that the site continues to discharge a hazardous waste into the navigable waters of the state on an ongoing, recurring basis. Although some removal activities have been conducted in the past few years (773 gallons of NAPL removed since 2003), it is clearly not sufficient. Currently proposed investigation of active capping measures may produce an acceptable alternative to dredging in a challenging area of deep, rapidly flowing water, however this will not address the issue of ongoing discharges in the intertidal zone."

CHGE disagrees that "the site continues to discharge a hazardous waste into the navigable waters of the state on an ongoing, recurring basis" and that there are "ongoing discharges in the intertidal zone," as stated by the NYSDEC. First, we are not aware of any evidence supporting the statement that there is ongoing discharge of NAPLs from the site to the river. As discussed above, NAPL-impacted soils have been observed in borings adjacent to the river, but NAPL has only accumulated in two of the 35 NAPL monitoring wells installed along the river (and NAPL accumulations in the two wells has tailed off significantly[3]), and no active NAPL seeps have been observed along the bulkhead/shoreline. Second, we do not believe that waste materials at the site are hazardous. The following is a summary of hazardous waste characteristic testing that has been conducted to date:

Four soil/waste samples were collected in 1990 during the Phase II Investigation for hazardous waste characterization (metals, ignitability, corrosivity, reactivity). With the exception of one ignitability sample (which had a flash point of 139 ºF, just one degree below the regulatory criteria of 140 ºF), all samples/results were below regulatory criteria for hazardous waste characteristics.

In 1991, 12 soil/waste samples were collected for ignitability testing and one sample was collected for TCLP testing. Again, with the exception of one ignitability sample (which had a flash point of 134 ºF compared to the regulatory criteria of 140 ºF), all samples/results were below regulatory criteria for hazardous waste characteristics. The sample with a flashpoint of 134 ºF is not representative of the site conditions due to a sample collection bias that was not repeated for the other five samples which had flashpoints greater than 140 ºF.

In 2000, two soil/waste samples were collected during the Supplemental Preliminary Site Assessment for hazardous waste characterization (ignitability, corrosivity, reactivity, TCLP). All samples/results were below regulatory criteria for hazardous waste characteristics.

In December 2007, the NYSDEC collected a NAPL sample from well NMW-117S for ignitability testing and TCLP benzene analysis. The NAPL sample was not ignitable and had a benzene concentration below the regulatory level for hazardous waste toxicity characteristic.

[3] Refer to the enhanced DNAPL recovery pump test scope of work submitted to the NYSDEC on January 17, 2007 for additional details.

Based on these data, we feel that the MGP wastes at the site are non-hazardous.

"Additional test trenching should be conducted along the perimeter of the propane peaking facility, to determine precise locations of infrastructure and contamination. The object of the trenching would be to further evaluate the status of the propane peaking plant as a source area, and to evaluate the potential for containment, should this area be left unremediated."

Because of the shallow water table (typically 3 to 6 feet bgs) and anticipated low-stability nature of the fill materials, the practical depth that could be achieved with a test trench is anticipated to be around 5 feet bgs. Based on the 12 soil borings and 15 TarGOST probes advanced within and adjacent to the natural gas regulator station area (north of NMW-113S/D), NAPL-impacted soils have not been observed in the upper 5 feet of fill materials in this area. Accordingly, CHGE does not believe that conducting shallow test trenching in this area is warranted. CHGE will, however, excavate a localized test pit near the subsurface gas lines to determine if the gas line bedding materials are acting as a preferential pathway for NAPL migration to the river. The test pit is further discussed in the enclosed work plan.

"Geotechnical and environmental borings should be advanced in the intertidal zone. The objective of these borings is to determine possible locations for either a cutoff wall for a containment remedy or a structural wall to enable excavation."

We feel that it is premature to collect data to "determine possible locations for either a cutoff wall for a containment remedy or a structural wall to enable excavation" when remedies for the site have not yet been evaluated or selected. These types of data are more appropriate to be collected as part of a predesign investigation effort once a remedy has been selected. In addition, because the sediment surface drops off quickly from the shoreline, there is not an easily accessible, shallow-sloped intertidal zone like at CHGE's Newburgh site, making it more difficult to investigate this area at the North Water Street site.

Based on discussions at the November 29, 2007 meeting, we understand that NYSDEC would like CHGE to collect additional data to further assess potential migration pathways between the land and the river to support remedy evaluations in the future. As such, the enclosed work plan includes the advancement of sediment borings in the near shore area (i.e., between the shoreline and the easternmost set of existing sediment borings). Data and implementation knowledge gained from these borings will be considered during the development of future investigation work scopes for the intertidal zone, should such investigations be necessary following remedy selection.

"Provide construction details on the precise 3-D location of the gas pipeline and the electric line across the river."

The plan view location of the gas line and electric cable river crossings are shown on Figure 2 of the enclosed work plan. These locations are based on CHGE maps, underwater GPS survey, and remote sensing information obtained from the NYSDEC. Additional remote sensing options that could potentially be used to more accurately map the location of the lines/cables include side-scan sonar, subbottom profiling, magnetometer survey, and a tone detection system. One or more of these options may be pursued during future predesign investigation work, following completion of remedy evaluation/selection activities.

Please contact me at 845-486-5641 if you have any questions or comments regarding the enclosed work plan, or information presented above.

Respectfully,

cc: Robert Schick, NYSDEC Gardiner Cross, NYSDEC Larry Eckhaus, NYSDEC Gary Litwin, NYSDOH Jeffrey Clock, CHGE Records Management, CHGE Dennis Harkawik, JFM Nancy Gensky, ARCADIS David Bessingpas, ARCADIS

Work Plan – Supplemental Land and River Investigations Central Hudson Gas & Electric Corporation North Water Street Site – Poughkeepsie, New York January 28, 2008

Introduction

The work plan presents the scope of work for the following supplemental land and river investigation activities at the Central Hudson Gas & Electric Corporation (CHGE) North Water Street Site in Poughkeepsie, New York (the site):

Subsurface investigations in the natural gas regulator station area
Test pit excavation to evaluate gas line bedding materials
Polychlorinated biphenyl (PCB) soil sampling in the former electric plant area
Video inspection of former discharge pipes
Low-tide bulkhead/shoreline inspections
Sediment investigations within the gas line buffer zone
Near-shore sediment borings

The scope of work for each of these investigation activities is further discussed below.

Investigation activities similar to those that have previously been performed at the site (e.g., soil borings, well installations) will be conducted following procedures submitted to the New York State Department of Environmental Conservation (NYSDEC) in previous work plans[1]. Accordingly, detailed descriptions of the procedures for these activities are not repeated in this work plan. For investigation activities that haven't previously been conducted at the site (e.g., DART samplers) this work plan includes more detailed descriptions of the investigation procedures. All investigation locations will be surveyed or measured relative to fixed site features.

We anticipate that the proposed work will be initiated in the spring of 2008. A data summary report will be submitted to the NYSDEC following completion of the field work and receipt of analytical data.

[1] Refer to *Work Plan – 2004 Land and River Investigations* (Blasland, Bouck & Lee, Inc. [now known as ARCADIS], September 2004).

Subsurface Investigations in the Natural Gas Regulator Station Area

To assess the potential presence of non-aqueous phase liquids (NAPLs) in overburden soil and bedrock in the natural gas regulator station area, test borings and NAPL monitoring wells will be advanced/ installed at six locations (Figure 1)[2]. Boring locations may be modified in the field due to the presence of buried and underground utilities. At each location, test borings will be advanced 12 feet into bedrock. Overburden drilling will be performed using 4.25-inch diameter hollow-stem augers (pre-drilling with vacuum equipment will be necessary because of the underground structures and utility lines associated with the natural gas regulator station). Continuous soil samples will be collected at 2-foot intervals using 2-inch diameter split-spoon samplers. Recovered soils will be photographed, visually characterized, and screened with a photoionization detector (PID). Observations of the recovered soils – including recovery, predominant soil types, texture, color, presence of fill materials, moisture content, plasticity, detailed descriptions of NAPLs/odors/sheens, and PID readings – will be recorded in a field notebook. If significant NAPLs are observed during overburden drilling, measures will be taken to minimize the potential for downward migration of NAPLs within the borehole.

After bedrock is encountered, a 3-inch diameter steel casing will be installed in the borehole to seal off the overburden soils prior to initiating bedrock drilling. If significant NAPLs are observed in the overburden, the annular space between the borehole and the steel casing will be filled with cement-bentonite grout. If significant NAPLs are not observed in the overburden, bentonite grout will be used. Once the grout around the steel casing has been allowed to set, bedrock will be drilled with a 2 15/16-inch roller-bit using fluid rotary methods. During bedrock drilling, the potential presence of NAPLs will be evaluated by observing NAPL, odors, and/or sheens in the recirculation water and drill cuttings (bedrock chips), to the extent possible. Observations of NAPLs/odors/sheens will be recorded in a field notebook. When bedrock drilling is complete, 2-foot long sumps will be grouted into the bottom of the borehole, and the borings will be left open to serve as bedrock NAPL monitoring wells. Locking caps will be placed on the steel casing

At locations where NAPLs are observed in the overburden, an overburden NAPL monitoring well will be installed adjacent to the bedrock NAPL monitoring well. The overburden wells will be constructed of 2inch diameter PVC, 0.02-inch slotted screen spanning the NAPL-impacted soil interval, 2-foot long sumps below the screen, and steel protective casings with locking caps.

Following installation, the bedrock and overburden NAPL monitoring wells will be developed.

The bedrock and overburden NAPL monitoring wells will be checked for NAPL on a monthly basis for a period of one year following installation. Accumulated NAPL will be removed from wells when levels approach the top of the sump. Should NAPL accumulate at faster rates than anticipated, the monitoring/removal frequency will be adjusted as to not allow NAPL to overtop the sump. NAPL thicknesses and removal volumes will be recorded.

[2] Proposed boring/well locations in the natural gas regulator station area are subject to change pending the results of utility clearances, and based on coordination with NYSDEC field personnel.

Test Pit Excavation to Evaluation Gas Line Bedding Materials

A single test pit will be excavated between the Hudson River and the western edge of the natural gas regulator station (Figure 1) to determine if the gas line bedding material in this area is acting as a preferential pathway for NAPL migration to the river. It is anticipated that standard excavation equipment (e.g., a backhoe) will be

used to remove the asphalt, and then hand tools and/or vacuum equipment will be required to excavate around the gas lines. Precautions will be taken to protect workers and the integrity of the gas lines during the excavation activities. Depending on the actual equipment used, the stability of the fill materials, depth to groundwater, and depth of the gas lines, it is anticipated that the depth of the test pit will be approximately 5 feet bgs (the depth to groundwater in this area of the site has typically been between 3 and 6 feet bgs). Detailed descriptions of any NAPLs/odors/sheens will be recorded in a field notebook.

If impacts are not observed, the excavated bedding material will be replaced and compacted. If the excavated material is impacted, it will be staged for characterization and disposal by CHGE, and clean fill material will be used to backfill the test pit.

PCB Soil Sampling in the Former Electric Plant Area

To assess the potential presence of PCBs in surface soils within the former electric plant area, six soil samples will be collected for laboratory analysis of PCBs. The proposed sample locations are shown on Figure 1, and correspond to six of the seven 2005 soil boring locations in this area (sampling is not proposed near 2005 soil boring SB-405 due to the presence of approximately 5 feet of concrete at this location). Drilling will be performed to 2 feet bgs using 4.25-inch diameter hollow-stem augers. Continuous soil samples will be collected using a 2-inch diameter split-spoon sampler. Recovered soils will be photographed, visually characterized, and screened with a PID. Observations of the recovered soils – including recovery, predominant soil types, presence of fill materials, moisture content, plasticity, detailed descriptions of NAPLs/odors/sheens, and PID readings – will be recorded in a field notebook. At each location, soils collected from the 0- to 2-foot bgs interval will be homogenized for laboratory analysis of PCBs via USEPA Method 8082.

Video Inspection of Former Discharge Pipes

Twelve former discharge pipes were identified during a 2004 reconnaissance along the bulkhead/ shoreline. The locations of the former discharge pipes are shown on Figure 1. A pipeline inspection camera will be used to evaluate the extent, condition and presence of NAPL within each of the 12 former discharge pipes. Video footage will be recorded.

Low-Tide Bulkhead/Shoreline Inspections

On November 14, 2003, the bulkhead/shoreline area adjacent to the site was inspected during a low-tide condition. The results of that inspection were reported in the *Data Report – 2003 Land Investigation Activities* (Blasland, Bouck & Lee, Inc., May 2004). Additional low-tide inspections will be conducted during 2008. Based on tide prediction charts, the following six dates have been selected for low-tide bulkhead/shoreline inspections:

April 7, 2008
May 6, 2008
June 5, 2008
July 4, 2008
August 1, 2008
September 1, 2008

During each inspection, the bulkhead/shoreline adjacent to the site (between the elevated railroad bridge to the south and Dutchess Avenue to the north) will be observed and videotaped. The location of any NAPL seeps in the bulkhead will be recorded and photographed.

Sediment Investigations within the Gas Line Buffer Zone

During the 2004 and 2005 sediment investigation activities, 200-foot wide buffer zones were established along active submarine utility lines (Figure 2), and no investigations were conducted within these buffer zones for safety purposes. As an initial step in assessing sediment conditions within the gas line buffer zone area, a weighted diver's camera[3] will be used to inspect the sediment surface. It is anticipated that north-south and east-west oriented passes with the camera will be made within the approximately 200- by 400-foot area outlined on Figure 2. Spacing between passes will be approximately 10 feet. Video footage obtained from the camera will be recorded on DVD. A GPS will be used to track the location of the camera.

In addition to the camera inspection, DART sampling will be conducted within the gas line buffer zone area. DART sampling is a technology developed by Dakota Technologies, Inc. (DTI) that uses solid-phase extraction (SPE) and laser-induced fluorescence (LIF) principles to delineate polycyclic aromatic hydrocarbons (PAHs) and PAH-containing NAPLs in soils and sediments. A "DART sampler" consists of a continuous rope or rod made from or coated with SPE media, which attracts and sorbs PAHs. The sampler is inserted into the soil or sediment, allowed to equilibrate, removed, and analyzed via LIF for PAH/NAPL concentrations as a function of depth. For additional details regarding the DART technology, refer to http://www.dakotatechnologies.com/?content=templates/news_detail.tpl&id=97.

Using divers, DART samplers will be installed at the 28 locations shown on Figure 2. It is anticipated that samplers will be between 5 and 10 feet in length, and constructed of a rod coated with SPE material. Actual sampler lengths and penetration depths may vary depending on sediment conditions and the ability of the divers to push the samplers into the sediment. Floating cords will be attached to one end of

[3] A detailed description of the weighted diver's camera set up was submitted to Hank Willems (NYSDEC) via an e-mail from David Bessingpas (ARCADIS) on December 12, 2007.

the sampler so that they can be more readily located for retrieval. After equilibrating for a minimum of 24 hours, the DART samplers will be retrieved by a diver, labeled with a unique sample ID, and submitted to DTI for analysis (or analyzed on-site).

During installation of the DART samplers, divers will collect surficial (0- to 0.5-foot depth interval) sediment samples at each location for laboratory analysis of PAHs via USEPA Method 8270C and total organic carbon (TOC) via the Lloyd Kahn Method.

Near-Shore Sediment Borings

To evaluate sediment conditions between the shoreline and the easternmost set of existing sediment borings, an additional five sediment borings are proposed to be attempted. The proposed boring locations are shown on Figure 2. Note that borings will be attempted as close to the shoreline as possible. However, it is anticipated that the presence of riprap will influence how close to the shoreline borings will be feasible. Borings will be advanced to a depth of 2 feet below the top of the silt/clay layer. Recovered sediments will be photographed, visually characterized, and screened with a PID. Observations of the recovered sediments – including recovery, predominant sediment types, texture, color, presence of fill materials, moisture content, plasticity, detailed descriptions of NAPLs/odors/sheens, and PID readings – will be recorded in a field notebook. Surficial (0- to 0.5-foot depth interval) sediment samples at each location will be collected for laboratory analysis of PAHs via USEPA Method 8270C and TOC via the Lloyd Kahn Method. Sediments from deeper intervals will be archived in a freezer.

The following geotechnical sampling/testing will be conducted to provide data for evaluating remedial alternatives in the future:

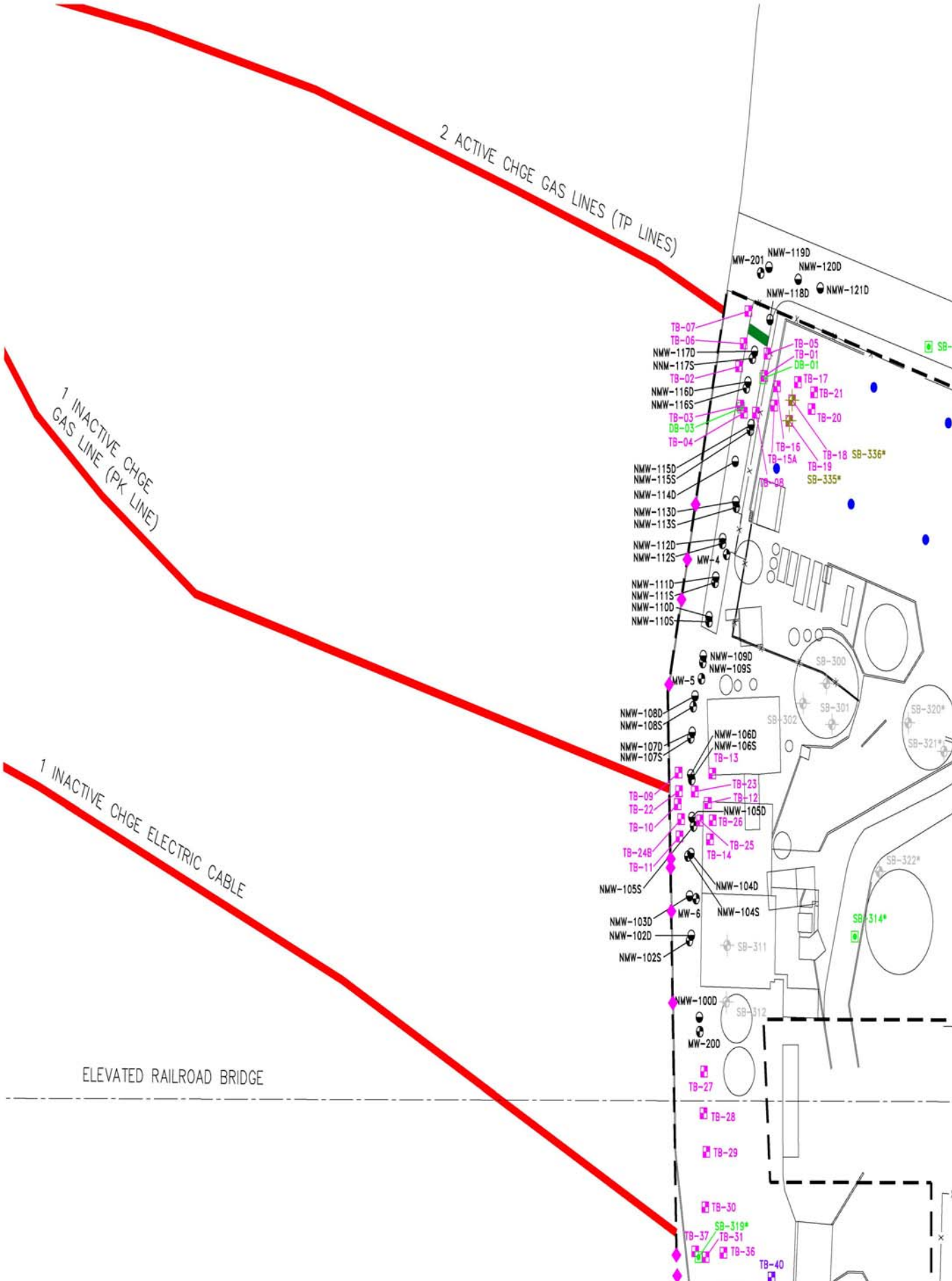
Continuous standard penetration testing (SPT) of the overburden will be performed using 2-inch diameter split-spoon samplers in accordance with ASTM D1586 (except where 3-inch diameter samples or Shelby tubes are collected, as discussed below)

Up to 10 samples of material located above the silt/clay layer will be collected (using 3-inch diameter split spoon samplers with brass-ringed liners, if necessary) for the following laboratory analyses:

- moisture content (ASTM D2216)
- unit weight
- grain size – sieve and hydrometer (ASTM D422 and D1140)

• Up to five Shelby tube samples (one from each boring) of silt/clay material will be collected for the following laboratory analyses:

- moisture content (ASTM D2216)
- unit weight
- grain size – sieve and hydrometer (ASTM D422 and D1140)
- Atterberg limits (ASTM D4318)



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