nationalgrid

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Lead Engineer
Environmental Department

November 4, 2011

Mr. Scott Deyette
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014

Re: ***Malone (Amsden St.) Former MGP Site***
Site #: V00469
Salmon River Sediment Investigation – Final Scope of Work

Dear Mr. Deyette:

This letter provides the final scope of work for investigating potential impacts to the Salmon River sediments from National Grid's former Manufactured Gas Plant (MGP) site (the "site") located on Amsden Street, Malone, New York. The Salmon River is located at the toe of the slope along the eastern boundary of the site (Figure 1). This scope of work was approved by the New York State Department of Environmental Conservation (NYSDEC), as documented in the following communication:

- August 19, 2011 letter to the NYSDEC entitled Salmon River Sediment Investigation;
- September 19, 2011 e-mail from the NYSDEC providing comments on the August 19, 2011 letter;
- October 3, 2011 letter to the NYSDEC providing responses to the NYSDEC's August 19, 2011 comment; and
- October 5, 2011 letter from the NYSDEC providing an approval of the scope modifications proposed in the October 3, 2011 letter.

As discussed in the above documentation, the sediment investigation will focus on four main areas:

- Background Sampling – sampling upstream from the site;
- Delineation Sampling – sampling in an area where tar was observed on the river's edge adjacent to the site;
- Downstream Sampling – sampling downstream from the northern site boundary; and
- Sampling Near Seep – sampling where potential petroleum impacts were observed near the mouth of a seep.

The investigations of each of these areas are discussed further, below. Sediment sampling locations are shown on Figure 1.

Background Sampling

The purpose of the background sediment sampling will be to establish background PAH concentrations upstream from the site that can be compared to potentially site-related sediment PAH concentrations adjacent to and downstream from the site. Background sampling will consist of two components: 1) sediment probing and documenting observations; and 2) sampling sediment.

Sediment probing will be conducted during the background sampling at identified fine-grained sediment deposits within an approximate 500-feet reach of river upstream from the site (Figure 1). The horizontal and vertical extent of fine-grained sediment deposits, water depths, and the presence of sheens, staining and/or odors (if encountered) will be documented during probing. Other observations that will be recorded while conducting the probing include stream characteristics and the presence of discharge pipes and sewer outfalls.

Up to 13 sediment samples will be collected from up to five sediment deposits located within the approximate 500-feet reach of river upstream from the site. Background sediment sampling locations will be selected from areas containing fine-grained sediment deposits that have the potential to scour/transport downstream during high-flow events. Locations will be selected to cover the range of observations noted during probing. A reconnaissance of background sampling locations will be the first task completed during the sediment sampling. The field sampling crew will plot chosen locations on a map (by hand) and provide the map to the NYSDEC (via e-mail) within one or two days of mobilizing to the field. Once the NYSDEC has provided approval of the five chosen areas, background sediment samples will be collected at each area to a depth of approximately 4 feet, or until refusal, whichever comes first. Based on the above-mentioned documentation, and assuming refusal is not reached before 4 feet below the sediment surface, samples will be collected as follows:

- Five samples from 0-6 inches at each of the five chosen areas;
- Two samples from 6-12 inches at two of the five chosen areas;
- Two samples from 1-2 feet at two of the five chosen areas;
- Two samples from 2-3 feet at two of the five chosen areas; and
- Two samples from 3-4 feet at two of the five chosen areas.

Samples from the deeper intervals will be selected based on visual and/or olfactory indications of potential impacts, staining, and/or photoionization detector (PID) readings.

Sampling will be performed using methods detailed in the Field Sampling Plan [FSP] included in the NYSDEC-approved *Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites*, dated November 2002. As discussed in the FSP, samples will be collected using driven lexane tubes.

Sediment samples will be submitted for laboratory analysis for the 34 individual polycyclic aromatic hydrocarbons (PAHs) (16 parent PAHs and 18 groups of alkyl PAHs) and total organic carbon.

Delineation Sampling

A small area of solidified tar has been observed below the river level on the western riverbank adjacent to the site. The area of tar that can be observed without physically moving soil/cobbles/boulders extends only a few feet into the river (east), a few feet in the north-south direction (parallel with river flow), and is only an inch or less in thickness. The tar is located on a relatively flat lying bedrock surface and may have originated from overland flow from the site and/or via migration on the bedrock surface. The approximate location of this area is shown on Figure 1. Given the strong current and the presence of large cobbles and boulders in the area of the tar, it is difficult to positively determine the lateral extent of the tar in the easterly direction (into the river) and southerly direction (upstream). The lateral extent of the tar in the northerly direction (downstream) is also difficult to determine due to the presence of heavily vegetated soil that may have been emplaced through site development or by transport via the river.

Aggressive sampling techniques will be used to attempt to further delineate the tar in this area. We anticipate the sampling will be dynamic in nature and that several different techniques/tools will be required (e.g., shovel, slide hammer, pry bar, probe rods, etc.). The goal of the sampling will be to attempt to delineate the lateral and vertical extent of the solidified tar by visually observing the absence/presence of the tar. Once the extent has been visually defined, up to six sediment/soil samples will be collected outward from the edges of the tar. The six samples will be collected as follows:

- Two collected upstream;
- Two collected lateral to river flow (toward the center of the river); and
- Two collected downstream.

The samples will be analyzed for the 34 individual PAHs and total organic carbon. The purpose of these samples will be to corroborate the “clean” visual description with a “clean” analytical result.

Downstream Sampling

Downstream sampling will be conducted in order to assess whether or not potential site-related PAHs are present in sediment downstream from the site. Downstream sampling will begin at the downstream edge of the delineated solidified tar discussed above. Similar to the sediment sampling conducted upstream from the site, the downstream sampling will also consist of two components: 1) sediment probing and documenting observations; and 2) sampling sediment.

Sediment probing will be initiated at the downstream edge of the delineated solidified tar and will proceed along the western riverbank to Factory Street (approximately 1,000 feet downstream from the site). Given the absence of substantial fine-grained material within the riverbed, probing will be conducted only at observed fine-grained sediment pockets. The horizontal and vertical extent of

fine-grained sediment deposits, water depths, and the presence of sheens (if encountered) will be documented during probing. Other observations that will be recorded while conducting the probing include stream characteristics and the presence of discharge pipes and sewer outfalls.

Based on details presented in the above-mentioned documentation, sediment samples will be collected from the following downstream areas:

- Up to 20 samples will be collected from four locations within an apparent floodplain deposit (Figure 1) located immediately north (downstream) of the solidified tar. These samples will be collected to assess whether or not there is any indication of site-related PAHs in sediments immediately downstream of the solidified tar area. These samples will be evenly distributed across this area. Samples will be collected to a depth of approximately 4 feet, or until refusal, whichever comes first. Samples will be collected using the driven lexane sampling technique as described in the FSP. Samples will be collected from the following intervals if refusal is not encountered:

  - 0-6 inches;
  - 6-12 inches;
  - 1-2 feet;
  - 2-3 feet; and
  - 3-4 feet.

- Up to 10 samples will be collected from up to two additional sediment deposits (if encountered) located between the flood plain and the seep area (discussed below). Samples will be collected at these two sediment deposits from the intervals discussed above.

- Up to 20 samples will be collected from up to four additional sediment deposits (if encountered) located along the eastern bank of the river, between the seep area and across from the Carter property (just north of Coffee St.). Samples will be collected at these four sediment deposits from the intervals discussed above.

- Up to 25 additional sediment samples will be collected from up to five additional sediment deposits (if encountered) located downstream from the seep area and along the western bank of the river. Samples will be collected at these five additional deposits from the intervals discussed above.

Samples recovered during the downstream sediment sampling will be visually characterized (i.e., for staining, presence of tar, soil type, etc.) and screened using a PID to assess the presence of volatile organic vapors. All downstream sediment samples will be submitted for laboratory analysis for the 34 individual PAHs and total organic carbon.

Sampling Near Seep

As observed during a previous site visit, potential impacts in sediment were observed at the mouth of a seep that discharges to the river. Previous observations and sampling results of this seep suggest that the seep may contain petroleum-related impacts that are not likely related to the MGP. The location of the potentially impacted seep area is shown on Figure 1.

National Grid proposes to attempt to delineate the extent of impacts to sediments at the mouth of the seep. The impacts will be delineated using the same techniques/tools that were discussed above for delineating the solidified tar area. National Grid also proposes to collect two samples of impacted sediment and submit the samples for laboratory analysis of Target Compound List (TCL) volatile organic compounds (VOCs) and TCL semi-VOCs (SVOCs).

Field and Sampling Procedures

Consistent with previous work completed at the site, field activities will be conducted in general accordance with the NYSDEC-approved *Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites* and supporting appendices (FSP and Quality Assurance Project Plan [QAPP]), dated November 2002. As described in the QAPP, analytical samples will be submitted for laboratory analysis using United States Environmental Protection Agency (USEPA) SW-846 Methods as referenced in the most recent edition of the NYSDEC Analytical Services Protocol (ASP), with Category B analytical laboratory reports. Total organic carbon analyses will be performed using the Lloyd-Kahn method. A Data Usability Summary Report (DUSR) of the laboratory data packages will be prepared and the results of the DUSR will be incorporated into data tables prepared for the project.

Representative portions of each sediment sample will be frozen for potential forensic source analysis, if National Grid decides such analyses are warranted. The results of the PAH analyses will be evaluated to determine whether forensic analyses are warranted.

Upon completion of the sediment sampling fieldwork, a New York State-licensed surveyor will locate sediment samples using a global positioning system (GPS).

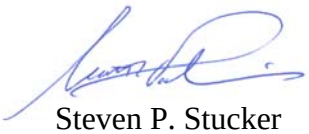
Schedule and Reporting

National Grid plans to conduct the sediment investigation in November 2011. We estimate the investigation will require approximately one-to-two weeks to complete. A letter report will be submitted to the NYSDEC approximately two months after field activities are completed. The report will include a discussion of the completed field activities, observed impacts, analytical results, potential forensic analyses, and recommendations for additional work (if warranted). The discussion will be supported by:

- analytical data summary tables;
- appropriate photographs; and
- figure(s) showing the locations of the sediment samples.

Please feel free to contact me by phone at 315-428-5652 or by e-mail at Steven.Stucker@us.ngrid.com if you have any questions.

Sincerely,

 , for
Steven P. Stucker
Environmental Department

Attachment

cc: Deanna Ripstein, NYSDOH
Scott Powlin, ARCADIS
Andrew Corbin, ARCADIS

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FACTORY STREET

COFFEE STREET

AMSDEN STREET

SALMON RIVER

CARTER PROPERTY

SAMPLES TO BE COLLECTED FROM UP TO 5 LOCATIONS BETWEEN THE SEEP AREA AND FACTORY STREET, ALONG THE WESTERN BANK

SAMPLES TO BE COLLECTED FROM UP TO 4 LOCATIONS ON EASTERN BANK BETWEEN THE SEEP AREA AND CARTER PROPERTY

SAMPLES TO BE COLLECTED FROM UP TO 2 LOCATIONS BETWEEN THE FLOOD PLAIN AND SEEP AREA

APPROXIMATE LOCATION OF APPARENT PETROLEUM IMPACTED SEEP AREA (SAMPLES TO BE COLLECTED FROM 2 LOCATIONS)

SITE

APPROXIMATE LOCATION OF FLOOD PLAIN AREA (SAMPLES TO BE COLLECTED FROM 4 LOCATIONS)

APPROXIMATE AREA OF SOLIDIFIED TAR (SAMPLES TO BE COLLECTED FROM 6 LOCATIONS)

BACKGROUND SAMPLING CONDUCTED TO APPROXIMATELY 500 FEET UPSTREAM FROM THE SITE BOUNDARY (SAMPLES TO BE COLLECTED FROM UP TO 5 LOCATIONS)

LEGEND:

- NATIONAL GRID PROPERTY LINE
- TEST PIT LOCATION
- PZ-110 PIEZOMETER LOCATION
- SG-2 STREAM GAUGE LOCATION
- MW-3 MONITORING WELL LOCATION
- SB-8 SOIL BORING LOCATION
- SS-6 SURFACE SOIL SAMPLE LOCATION
- SEEP-1 SEEP SAMPLE LOCATION

0 140' 280'
GRAPHIC SCALE

NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP SITE
REMEDIAL INVESTIGATION

SEDIMENT SAMPLING LOCATIONS

ARCADIS

FIGURE
1