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ENVIRONMENT

Mr. William Wu
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway
Albany, NY 12233

Subject:
Remedial Investigation Work Plan Addendum
Former Dangman Park Manufactured Gas Plant Site
Brooklyn, New York
Site No. 224047
Index # A2-0552-0606

Date:
February 5, 2013

Contact:
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Email:
Steven.Feldman@arcadis-us.com

Our ref:
B0036704.0001

Dear Mr. Wu:

On behalf of Brooklyn Union Gas d/b/a National Grid NY (National Grid), ARCADIS has prepared this Remedial Investigation (RI) Work Plan Addendum for the former Dangman Park Manufactured Gas Plant (MGP) site (Site) located at 486 Neptune Avenue, Brooklyn, New York.

National Grid submitted an RI Data Summary to the New York State Department of Environmental Conservation (NYSDEC) on September 4, 2012. In addition, at the request of the NYSDEC, boring logs and a set of cross-sections that documented data generated during the RI were submitted on November 30, 2012. In a letter dated December 21, 2012, the NYSDEC indicated that based on a review of these submittals, additional field work is necessary because the nature and extent of the contamination has not been fully delineated. Specifically, the NYSDEC requested the drilling and installation of one (1) additional monitoring well on the north side of Neptune Avenue (i.e., downgradient of monitoring well MW-14).

The scope of work outlined in this RI Work Plan Addendum will provide data to delineate the nature and extent of the impacts that were observed along the downgradient property boundary of Lot 1, thereby completing the RI field work program and allowing for the preparation and submittal of a Remedial Investigation Report.

Remedial Investigation Addendum Scope of Work

This section of the RI Work Plan Addendum describes the proposed scope of work. The proposed scope of work includes the drilling of one (1) soil boring and the installation of one (1) additional monitoring well (MW-20) at the soil boring location. Monitoring well MW-20 may be situated in the parking lot on Block 7250/Lot 1 if access can be negotiated with the property owner. Alternatively, if access cannot be negotiated with the property owner in a timely manner, MW-20 may be situated on the northern side of Neptune Avenue (adjacent to the curb) assuming that there are no underground utilities or structures that would impede the performance of the drilling activities in a safe manner. Figure 1 of this RI Work Plan Addendum shows the proposed location of monitoring well MW-20. The actual drilling location may be adjusted based on accessibility and field conditions (e.g., utilities), and in consultation with National Grid and the NYSDEC. If impacts are observed in MW-20, National Grid will contact the NYSDEC to discuss potential locations for the drilling of a "step out" soil boring(s).

Soil Boring Drilling and Subsurface Soil Analyses

The MW-20 soil boring will be drilled using sonic drilling techniques. Continuous soil sampling will commence at 5 feet below land surface (ft bls) following the clearance of utilities to a depth of 5 ft bls by soft dig techniques (e.g., hand excavation). Soil recovered from each sample interval will be visually characterized for color, texture, and moisture content as described in the National Grid *Field Descriptions of Samples for Former Manufactured Gas Plant (MGP) Sites* (Appendix B [FSP] of the RI Work Plan). The presence of visible staining, non-aqueous phase liquid (NAPL), and obvious odors will be noted.

It is anticipated that the soil boring will be drilled to a target depth of 115 ft bls. If evidence of MGP-related impacts is observed, the boring will continue to approximately 10 feet beyond the observed impacts for vertical delineation purposes or until a confining layer is observed. It is anticipated that a depth of 115 ft bls is an appropriate target depth to delineate the extent of NAPL impacts based on the existing RI data. Prior to installing the monitoring well, the soil boring will be sealed (with a cement/bentonite grout or bentonite pellets) from the terminal depth of the boring up to the planned depth of the monitoring well and the monitoring well will be installed.

Three (3) subsurface soil samples will be collected from the soil boring (80-82 ft bls, 85-87 ft bls, and 90-92 ft bls depth intervals) if no impacts are observed. These soil sample depth intervals are coincident with the intervals in MW-14 where minor impacts were observed. If impacts are observed, then up to three (3) samples will be collected; one to two samples would be collected from the depth interval(s) where the greatest apparent degree of impacts are observed (if any) and another soil sample ("un-impacted" soil) would be collected below apparent "impacted" soil to aid in vertical delineation, if warranted. The samples will be submitted to the laboratory for the analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target analyte list (TAL) metals, target compound list (TCL) polychlorinated biphenyls (PCBs), total cyanide, and free cyanide (analysis by EPA Method 9016) (see RI Work Plan QAPP for compound lists).

Field sampling, laboratory analysis, and field work will be conducted in accordance with the protocols described in the RI Work Plan, including community air monitoring.

Monitoring Well Installation

Monitoring well MW-20 will be constructed using 2-inch diameter Schedule 40 PVC casing and screen and will be completed with a screen interval from 80 to 95 ft bls to evaluate groundwater quality in the vertical zone that is coincident with the MW-14 and MW-17 screen intervals. A 3-foot long sump will be installed at the bottom of the monitoring well. The monitoring well will be completed at the surface with a locking cap and a flush-mount protective casing.

Following installation, and immediately prior to development as discussed below, the well will be gauged for the presence of NAPL. The well will then be developed by surging and pumping water from the well. Surging and pumping will continue until the turbidity is below 50 nephelometric turbidity units (NTUs) or until pH and conductivity measurements have stabilized.

Subsequent to the well installation activities, a New York State licensed surveyor will field survey the monitoring well location. The surveyor will determine the location relative to the New York State Plane Coordinate System, and the ground surface elevation and measuring point elevation (defined as the top of the inner casing) relative to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Groundwater Sampling

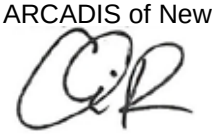
One groundwater sample will be collected from MW-20 two weeks after completion of the monitoring well installation and development activities to allow for a period of equilibration.

The well will be purged using low-flow methods and will be gauged for the presence of NAPL prior to purging. Following the purging, one groundwater sample will be collected using low-flow sampling techniques and a submersible pump. The groundwater sample will be submitted to the laboratory for the analysis of VOCs, SVOCs, TAL metals, and total cyanide. Field parameters including pH, oxidation-reduction potential (ORP), temperature, conductivity, dissolved oxygen, and turbidity will be collected during groundwater sampling.

On behalf of National Grid, we trust that this RI Work Plan Addendum addresses the NYSDEC request outlined in the December 21, 2012 letter. If you have any questions or require additional information, please feel free to contact Tracey Bell at (718) 963-5645 or by e-mail at Tracey.Bell@nationalgrid.com.

Sincerely,

ARCADIS of New York, Inc.



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MW-20

BLOCK 7250 LOT 1R

NEPTUNE AVENUE

MW-13 VP-1 SB-16 MW-14 MW-15 SV-1 MW-16 MW-17 VP-2 SB-17 MW-18 SV-2

SB-8 VP-3

SB-9

SB-10

MW-19

LOT 1

ASPHALT PARKING AREA

GENERATING ROOM

CISTERN (1906)

SB-11 MW-1 SB-4/MW-10 MW-5 SB-3 GAS HOLDER (1906) MW-2 SB-12

CONC. CURB

PURIFYING HOUSE (1895)

ONE STORY BRICK

CONC. WALK

WEST 5TH STREET

TAR TANK (1895)

OIL TANK

GENERATING HOUSE (1906)

SB-13 MW-3 SB-5/MW-11 SB-1 SB-2 MW-4 ASPHALT DRIVE SB-14

SB-18 STORAGE CONC. CURB

RETORT HOUSE (1895)

SB-19 SB-6 SB-7

FORMER SHEEPSHEAD BAY ROAD

SB-20 ASPHALT DRIVE

SB-21 VP-4 SB-22

CHAIN LINK FENCE CONC. CURB CONC. WALK GRASS AREA MW-6

CONC. CURB CHAIN LINK FENCE CONC. WALK GRASS AREA SV-4 MW-7

CONC. CURB

SV-3 SB-24

LOT 25

SB-23/MW-12

CHAIN LINK FENCE ASPHALT PAVEMENT EDGE OF PAVEMENT GRASS AREA MW-8

BRICK APARTMENT BUILDING

LOT 50

LEGEND:

- APPROXIMATE BOUNDARY OF BLOCK 7250, LOT 1
- APPROXIMATE BOUNDARY OF BLOCK 7273, LOT 1
- APPROXIMATE BOUNDARY OF BLOCK 7273, LOT 25
- APPROXIMATE FORMER MGP BOUNDARY
- FORMER MGP FEATURE (1895 AND/OR 1906 SANBORN FIRE INSURANCE MAPS)
- SB-1 SITE CHARACTERIZATION SOIL BORING LOCATION (ARCADIS, 2009)
- SB-2 SITE CHARACTERIZATION SOIL BORING/GEOPROBE GROUNDWATER SAMPLING LOCATION (ARCADIS, 2009)
- MW-1 SITE CHARACTERIZATION MONITORING WELL LOCATION (ARCADIS, 2009)
- SB-7 REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING/VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2011)
- SB-8 REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING LOCATION (ARCADIS, 2011 AND 2012)
- MW-6 REMEDIAL INVESTIGATION MONITORING WELL LOCATION (ARCADIS, 2011 AND 2012)
- VP-1 REMEDIAL INVESTIGATION VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2012)
- SV-1 REMEDIAL INVESTIGATION SOIL VAPOR POINT LOCATION (ARCADIS, 2012)
- MW-20 PROPOSED MONITORING WELL LOCATION

NOTES:

1. MONITORING WELL, SOIL BORING, AND SOIL VAPOR POINT LOCATIONS SURVEYED RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
2. LOCATIONS OF MGP FEATURES ARE APPROXIMATE.
3. BASE MAP BY DONALD G. DEKENIPP L.S., P.C., PROFESSIONAL LAND SURVEYOR.
4. APPROXIMATE PROPERTY BOUNDARY INFORMATION FOR BLOCK 7250/LOT 1 OBTAINED FROM THE CITY OF NEW YORK DEPARTMENT OF FINANCE DIGITAL TAX MAP.

0 50' 100'
SCALE IN FEET

NATIONAL GRID
FORMER DANGMAN PARK MGP SITE
BROOKLYN, NEW YORK
REMEDIAL INVESTIGATION WORK PLAN ADDENDUM

PROPOSED MONITORING WELL LOCATION

ARCADIS

FIGURE 1