King, Matthew A (DEC)

From: King, Matthew A (DEC)
Sent: Tuesday, February 04, 2020 1:02 PM
To: Powlin, Scott
Cc: Tanya Alexander; Katie Hoelscher; Young, Terry W; Perretta, Anthony C (HEALTH); Eaton, Daniel J (DEC)
Subject: RE: National Fuel Dunkirk Former MGP Site - Work Plan for Bedrock Monitoring Wells

Hi Scott,

The Department accepts this work plan with the below referenced modifications.

Thanks,

Matt

Matthew King
Geologist Trainee, Remedial Bureau C
Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233
P: 518-402-7383 | F: 518-402-9679 | Matthew.King@dec.ny.gov |

From: Powlin, Scott <Scott.Powlin@arcadis.com>
Sent: Tuesday, February 04, 2020 11:46 AM
To: King, Matthew A (DEC) <Matthew.King@dec.ny.gov>
Cc: Tanya Alexander <AlexanderT@natfuel.com>; Katie Hoelscher <HoelscherK@natfuel.com>; Young, Terry W <Terry.Young2@arcadis.com>; Perretta, Anthony C (HEALTH) <anthony.perretta@health.ny.gov>; Eaton, Daniel J (DEC) <daniel.eaton@dec.ny.gov>
Subject: RE: National Fuel Dunkirk Former MGP Site - Work Plan for Bedrock Monitoring Wells

Matt,

Thanks for the call this morning regarding bedrock work plan for Dunkirk. You had one comment on the work plan: The first bullet on page 2 mentions using 4.25-inch hollowed stem augers (HSAs) to advance the boring in the overburden to bedrock. This should be 6.25-inch HSAs, not 4.25-inch. This will allow us to ream the bedrock socket to a nominal 6-inch diameter corehole, thus providing adequate space to install and grout in the 4-inch diameter steel casing.

If you agree with this revision, could you please respond with an approval of the work plan. Once approved, we will contact the drilling contractor and let you know when the work will be scheduled.

Regards,
Scott

From: Powlin, Scott
Sent: Friday, December 6, 2019 9:07 AM

To: King, Matthew A (DEC) <Matthew.King@dec.ny.gov>
Cc: Tanya Alexander <AlexanderT@natfuel.com>; Katie Hoelscher <HoelscherK@natfuel.com>; Young, Terry W <Terry.Young2@arcadis.com>; Perretta, Anthony C (HEALTH) <anthony.perretta@health.ny.gov>; Daniel Eaton <daniel.eaton@dec.ny.gov>
Subject: National Fuel Dunkirk Former MGP Site - Work Plan for Bedrock Monitoring Wells

Hi Matt,

Pursuant to our recent discussions regarding the Dunkirk MGP site, please find attached National Fuel's work plan for installing and sampling bedrock monitoring wells at the site. We look forward to your review of the document. Please feel free to contact Tanya or me if you have any questions.

Regards,
Scott

Scott Powlin, P.G. | Principal Geologist – Certified Project Manager | scott.powlin@arcadis.com
Arcadis | Arcadis of New York, Inc.
One Lincoln Center 110 West Fayette Street Suite 300 | Syracuse, N.Y. 13202
T. +1 315 671 9456 | M. +1 315 657 1331

Professional Geologist: New York #326; Tennessee #4724

Connect with us! www.arcadis.com | LinkedIn | Twitter | Facebook

Mr. Matthew King
Geologist Trainee, Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Arcadis of New York, Inc.
One Lincoln Center
110 West Fayette Street
Suite 300
Syracuse
New York 13202
Tel 315 446 9120
Fax 315 449 0017
www.arcadis.com

Subject:
Work Plan for Bedrock Monitoring Wells
Dunkirk Former MGP Site
National Fuel

ENVIRONMENT

Date:
December 6, 2019

Contact:
Scott A. Powlin

Phone:
315 671 9456

Email:
Scott.Powlin@arcadis.com

Our ref:
30003783

Dear Mr. King:

On behalf of National Fuel Gas Distribution Corporation (NFG), this letter presents a proposed work plan for installing and sampling three bedrock monitoring wells at the former manufactured gas plant (MGP) site located at 31 West 2nd Street in Dunkirk, New York. These monitoring wells are being installed pursuant to discussions held during a September 25, 2019 teleconference and November 14, 2019 site meeting with the New York State Department of Environmental Conservation (NYSDEC). The purpose of the call was to discuss the NYSDEC's comments on the Draft Feasibility Study (FS) Report submitted to the NYSDEC in April 2017. The site meeting was held to present site data to the NYSDEC to present a clear understanding of site-related impacts. As discussed during the above correspondence, the NYSDEC is requesting that NFG investigate potential volatile organic compound (VOC) impacts in the bedrock. This letter provides a work plan to implement these activities. The proposed plan for installing and sampling the new bedrock monitoring wells is discussed below.

PROPOSED FIELDWORK

NFG proposes to install bedrock monitoring wells at existing overburden well locations MW-1, MW-4, and MW-16. The proposed locations of the monitoring wells are shown on Figure 1. The bedrock well at MW-4 will serve to monitor potential background influences in the bedrock, and the wells at MW-1 and MW-16 will monitor for potential VOC impacts in the areas of the site exhibiting the highest concentrations of dissolved-phase benzene in the overburden. Water levels from the three wells can also be used to interpret the general groundwater flow direction in the bedrock, as well as the vertical hydraulic connection with the overburden (when compared to water levels in the existing paired overburden well).

Each bedrock well will be installed using the following methodology:

- The overburden at each well location will be drilled using 4.25-inch hollowed stem augers (HSAs). Continuous split-spoon sampling will be performed until bedrock refusal is encountered. Based on the depth to refusal encountered at previous site borings, it is assumed bedrock will be encountered at approximately 20 feet below grade. Soil samples will be collected continuously every 2 feet; described in terms of texture, grain size, color, moisture content, and potential impacts; and screened with a photoionization detector (PID) for the presence of VOCs.
- Once bedrock has been encountered, the upper approximately 5 feet of bedrock will be cored at each location, and a nominal 6-inch diameter, 5-foot rock socket will be reamed in preparation for installation of a 4-inch diameter steel casing.
- A 4-inch diameter steel casing will be grouted in place from grade to approximately 5 feet into rock at each location. The grouted casing will be allowed to sit for a minimum of 24 hours (or grout manufacturer's specification) to allow for the grout to cure before additional bedrock coring.
- HQ-sized tooling will be used to core the bedrock to approximately 12 feet below the bottom of the steel casing (total of 17 feet into rock), creating a nominal 4-inch diameter corehole.
- Retrieved bedrock cores will be reviewed and logged in terms of lithology, texture, color, and fracture patterns. Fractures in the core will be logged in terms of depth, dip angle, coloration, staining, and presence/absence of sheen/non-aqueous phase liquid (NAPL).
- Bedrock wells will be completed as open-hole construction, unless the competency of the bedrock is deemed insufficient to allow the corehole to remain open. If the bedrock is determined to be of low competency, a 2-inch diameter schedule 40 polyvinyl chloride (PVC) monitoring well will be installed in each corehole. PVC wells will be constructed using 10-foot long, 0.010-inch slotted screens with 2-foot long grouted sumps. A grade #0 silica sand pack will be installed from the top of the grouted sumps to approximately 2 feet above the top of the screens. Two-foot hydrated bentonite seals will be installed above the sand packs, and the remaining annular space at each well will be tremie-grouted to approximately 1 foot below grade.
- Eight-inch diameter flush-mounted curb boxes will be installed at each location.
- After a minimum of 24 hours after installation, each well will be developed using surge and purge techniques until purge water readings are less than 50 nephelometric turbidity units (NTUs) or until the purge water is reasonable free of sediment.

Other miscellaneous activities related to the well installations include:

- A Ground Penetrating Radar (GPR) and/or EM-31 geophysical survey will be used to locate underground utilities that may be present at each new monitoring well location.
- A vacuum-excavation truck and/or hand tools will be used to clear each new monitoring well location to 5 feet below grade. Each location will be cleared using this method as an added safety measure to avoid conflicts with below grade utilities during the drilling activities.

- The location, ground surface elevation, and measuring point elevation of each new monitoring well will be surveyed. Horizontal coordinates will be tied to the New York State Plane Central (3102) coordinate system (NAD 83), and all elevations will be established with respect to NAVD 1988.
- Investigation-derived waste (IDW) generated from the new wells will be characterized for disposal. Wastes will be segregated by waste type and placed in Department of Transportation (DOT)-approved 55-gallon steel drums or polyethylene tanks. National Fuel will coordinate off-site disposal of waste materials using their preferred waste disposal vendor.

Groundwater samples will be collected from the three new bedrock monitoring wells. A round of water levels will also be measured at all site monitoring wells prior to sampling. Consistent with previous sampling events, samples will be collected using low-flow sampling techniques. Field parameters measured during groundwater sampling will include pH, turbidity, temperature, conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Samples will be analyzed for Target Compound List (TCL) VOCs. Samples will be analyzed in accordance with NYSDEC Analytical Services Protocol (ASP). The laboratory will provide Category B Deliverables. Laboratory data packages will be validated, and a Data Usability Summary Report (DUSR) will be prepared to assess the usability of the data.

Field activities will be conducted in accordance with the procedures detailed in the existing NYSDEC-approved Field Sampling Plan (FSP) and Quality Assurance Sampling and Analysis Project Plan (QA/SAPP) developed for the site (Arcadis 2009). Given the minimal disturbance to the subsurface during the proposed drilling, NFG is proposing to not conduct community air monitoring. The worker breathing zone will be monitored for VOCs and airborne particulates in accordance with the site-specific Health and Safety Plan (HASP). Community air monitoring will be performed if the levels of VOCs and/or particulates exceed the action levels dictated by the HASP.

SCHEDULE AND REPORTING

NFG proposes to submit a data summary report to the NYSDEC and follow up the submittal with a conference call to discuss the results and a path forward for the project. We anticipate the data summary will contain:

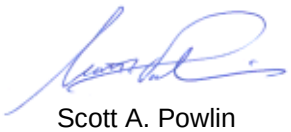
- A narrative describing the completed fieldwork, summary of the observations made during the fieldwork, evaluation of hydraulic gradients and analytical results, and recommendations for next steps.
- Monitoring well completion logs for the new monitoring wells
- Analytical data summary tables for monitoring well groundwater sample results
- An updated site plan showing the location of the new monitoring wells
- A water table elevation contour map
- A groundwater contour map for the bedrock
- An updated figure depicting dissolved-phase constituents in groundwater

NFG plans to install the wells in January/February 2020, pending the NYSDEC’s approval of this work plan and weather conditions. We look forward to your approval of this work plan. In the meantime, if you

have any questions, please feel free to contact me via phone 315.671.9456 or email at scott.powlin@arcadis.com, or Tanya Alexander of NFG via phone at 716.857.7410 or email at AlexanderT@natfuel.com.

Sincerely,

Arcadis of New York, Inc.



Scott A. Powlin
Principal Geologist

Copies:
Tanya Alexander, CHMM, REM, National Fuel
Katie Hoelscher, National Fuel
Daniel Eaton, NYSDEC
Anthony Perretta, NYSDOH
Terry Young, Arcadis

Attachment:
Figure 1 – Proposed Monitoring Well Locations

LEGEND:

- PROPOSED BEDROCK MONITORING WELL LOCATION
- SAMPLE LOCATION
- 10 — INFERRED GROUNDWATER BENZENE CONCENTRATION CONTOURS (µg/L)

CONCENTRATION KEY

COLOR	CRITERIA (µg/L)
BLUE	<=1
GREEN	>1 and <=10
CYAN	>10 and <=100
ORANGE	>100 and <=1,000
PURPLE	>1,000 and <=10,000
RED	>10,000

NOTES:

1. ALL LOCATIONS APPROXIMATE.
2. ALL CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER LITER (µg/L), EQUIVALENT TO PARTS PER BILLION (ppb).
3. MONITORING WELLS MW-5 AND MW-6 FROM SURVEY FILE DATED 10/7/11. MONITORING WELLS MW-10, MW-11, AND MW-14S/D THROUGH MW-16 FROM SURVEY FILE DATED 7/1/14. ALL SURVEY FILES PROVIDED BY C.T. MALE ASSOCIATES.
4. SOIL BORINGS SB-1 THROUGH SB-8 FROM SURVEY FILE DATED 11/12/08. SOIL BORINGS SB-10 THROUGH SB-12 FROM SURVEY FILE DATED 10/7/11. SOIL BORINGS SB-9 AND SB-13 THROUGH SB-25 FROM SURVEY FILE DATED 10/16/13. SOIL BORINGS SB-26 THROUGH SB-38 FROM SURVEY FILE DATED 7/1/14. ALL SURVEY FILES PROVIDED BY C.T. MALE ASSOCIATES.

0 80' 160'

GRAPHIC SCALE

NATIONAL FUEL
DUNKIRK FORMER MGP SITE
DUNKIRK, NEW YORK

PROPOSED BEDROCK MONITORING WELL LOCATIONS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SYRACUSE NY DIV/GROUP: ENV/IM-DV DB: LPOSENAUER, K.SARTORI PIC: ;PM/TM: S.POWLIN LYR:(On);ON=*;OFF=*REF*
C:\Users\ksartori\BIM 360\Arcadis\ANA – NATIONAL FUEL\Project Files\FORMER BUFFALO SERVICE CENTER OFFSITE\2019\01-DWG\DUNKIRK-Fig1-PB-MW.dwg LAYOUT: 1 SAVED: 12/3/2019 1:35 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: PDF-LB-COLOR PLOTSTYLETABLE: PLTFULL.CTB
PLOTTED: 12/3/2019 1:35 PM BY: SARTORI, KATHERINE
XREFS: IMAGES:
23301X03 23301X02.jpg
DUNKIRK-Titleblock-LB