



December 11, 2018

File No. 14-08015

Tina M. O'Rourke, Business Manager
Horsham Water & Sewer Authority
617 Horsham Road
Horsham, PA 19044

Reference: 14-08015 – Review of Time Critical Removal Action Work Plan – PFAS in Soil

Dear Ms. O'Rourke:

On behalf of the Horsham Water and Sewer Authority (HWSA), we have reviewed the following:

- CERCLA Time-Critical Removal Action Work Plan, Excavation and Disposal of PFAS-Contaminated Soil, Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove, Horsham, Pennsylvania, prepared by AGVIQ, LLC (AGVIQ) dated September 2018.

Summary

Sample results from soil sampling for Perfluorinated Alkyl Substances (PFAS) on NASJRB property were used to determine the most highly contaminated regions on the property. Further sampling was performed to delineate three excavation areas (EAs). The EAs were selected due to concentrations of PFAS exceeding the 95 upper percentile level (UPL) of 1,027 micrograms per kilogram (ug/kg), equivalent to parts per billion. These areas are referred to as EA-1, EA-2 and EA-3. EA-1 is located south of Building 608, which is reported to be the former Fire Fighting and Rescue Building. EA-2 and EA-3 are located in the vicinity of Building 184, which is reported to be the former Hangar area. EA-3 is approximately 100 feet north of EA-2. Both buildings have documented historical use of Aqueous Fire Fighting Foam (AFFF).

The largest excavation area, EA-1, will be excavated to a depth of 6 feet below ground surface (ft bgs) and approximately 1,663 cubic yards (cy) of contaminated soil will be removed. EA-2 and EA-3 will be excavated to a depth of 4 ft bgs where 502 and 351 cy, respectively, of contaminated soil will be removed. Groundwater monitoring in the region has indicated that in the vicinity of EA-1, the depth to water is between 6 and 8 ft bgs. In the area of EA-2 and EA-3, the depth to water is between 11 and 12 ft bgs. Excavations will reportedly not proceed past bedrock or groundwater if encountered.

In order to provide procedures for disposal of liquid wastes, such as those generated during decontamination activities, AGVIQ has provided a Standard Operation Procedure (SOP), SOP-003 Disposal of Waste Fluids and Solids, to manage groundwater in the event it is encountered. SOP-003 indicates that any groundwater encountered and water used for decontamination of personnel or equipment will be containerized in 55-gallon drums and sampled for contaminants. Drums will be stored until analysis is completed in a fenced drum storage area. Prior to disposal, contractual agreements will be made with appropriate authorities to ensure compliance with applicable solid waste, hazardous waste and water quality regulations. Any liquid wastes that exceed acceptable levels for disposal through the sanitary sewer system will be disposed of through contract with a commercial transport and disposal firm.

Remedial tasks will include the following:

- Removal of any existing concrete or asphalt at the surface.
- Excavation of soil to specified depths and dimensions.
- Soil will be stockpiled on protective liners adjacent to excavated trenches then covered until waste characterization may be performed and analysis completed.
- Waste characterization will be performed by volume, per 250 cy of stockpiled soil. One (1) 5-point composite and (1) grab sample will be collected.

AGVIQ estimates the following quantities of stockpile samples will be collected: seven (7) samples from EA-1, two (2) samples from EA-2 and two (2) samples from EA-3. Samples collected for waste characterization are to be analyzed for PFOA, PFOS, PFBS, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals, PCBs, ignitability and corrosivity.

AGVIQ has provided SOPs for excavation and stockpile sampling processes. A stockpile grab sample for volatile organics will be performed by retrieving a core from the stockpile then immediately using a direct sample container to retain the material. This will be done in ideally less than one minute to ensure minimal dissipation of volatiles. Sampling for all other analytes will be performed as a 5-point composite sample via a stainless-steel spoon to collect material from five random locations.

Excavations where soil has been fully excavated will undergo confirmation sampling to verify that contaminated material has been adequately removed. If confirmation samples exceed 1,027 ug/kg of PFAS, additional excavation will be required. Post-excavation sampling from EA-1 will include three (3) floor samples and six (6) sidewall samples. Post-excavation sampling from EA-2 and EA-3 will each include two (2) floor samples and four (4) sidewall samples.

Upon completion of excavation and waste characterization, stockpiled soil will be transported to a disposal facility which complies with the CERCLA Offsite Rule (OSR) and has prior approval by the Environmental Protection Agency (EPA). At the time of report publication, two facilities were undergoing review:

- Western Berks Community Landfill and Recycling Center, Birdsboro, PA – No information is provided in the report reviewed pertaining to the facility. Review of this facility's website indicates that institutional and engineering controls are currently in place and regulated by the EPA. Controls include groundwater restrictions and monitoring, maintenance of landfill caps and a leachate collection system and land use restrictions.
- Cumberland County Landfill, Shippensburg, PA – No information is provided in the report reviewed pertaining to the facility. Review of this facility's website indicates that this facility is reported by Advanced Disposal Services, Inc. to accept contaminated soils.

During site restoration, excavations will be backfilled with soil from an approved source then brought to previously existing grade with 2A stone.

The Time Critical Removal Action Work Plan with appendices includes contact information for personnel representing the EPA, PA DEP, Navy and AGVIQ, SOPs for decontamination, Health and Safety Plan, Quality Assurance/Quality Control forms, a project schedule, and various other procedural documents for the individual tasks required to complete the project. The entire process of remediation and site restoration is estimated to take approximately 51 days. The project schedule included indicates that the

process began in October 2018 and the final remediation report, which will include analytical results, will be available in May 2019.

Comments (provided for consideration by the Navy):

1. (SAP) Sampling and Analysis Plan Worksheet #3 (Distribution List) – we would request that Horsham Water and Sewer Authority be provided copy of soil and water sample results due to reported purpose of the excavation to protect drinking water, and reported potential disposal of treated wastewater to the sanitary sewer.
2. SAP Worksheet #10 Conceptual Site Model (CSM) – we appreciate leaching of PFAS from soil to groundwater has been added to the discussion of the Conceptual Site Model (CSM). The soil excavation and disposal is significant in that it provides for removal of soil with the highest concentration of PFAS reported on the Navy property.
3. We recommend continued evaluation of the soil-to-groundwater pathway as part of the remedial investigation and future remedial actions.
4. With the potential for liquids to be disposed of to the sanitary sewer, if this is needed, please submit an application as necessary to request such a discharge.
5. Given the emerging nature of regulations for PFAS, we would recommend providing a rationale for selection of disposal facility for the contaminated soil.

We note that the Navy and Air National Guard remedial investigations are ongoing and will further evaluate the extent of contamination and long-term solutions. We appreciate the ongoing communication.

Should you have any questions please do not hesitate to contact me.

Sincerely,



Toby J. Kessler, P.G.
Hydrogeologist
Gilmore & Associates, Inc.

TJK/dmk

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