WAITE HEINDEL
Environmental Management

October 13, 2020

Mr. Rob Farley
Vermont Department of Environmental Conservation
Waste Management Division
1 National Life Drive – Davis 1
Montpelier, VT 05620-3704

RE: Monitoring Well Abandonment and Sump Restoration / Site Closure Request
Young Residence
28 North Williams Street (SMS #2013-4436)
Burlington, VT, 05401

Dear Rob:

On April 8, 2020 and September 23, 2020, Waite-Heindel Environmental oversaw and conducted work related to site closure at the 28 North Williams Street (SMS #2013-4436). All was completed in accordance with WHEM's October 28, 2019 work plan for Monitoring Well Abandonment and June 28, 2020 work plan for GAC System Decommissioning. Both plans were approved by the VTDEC with the following WPCE IDs: 27719 (Well Closure) and 29067 (GAC system disassembly). This summary report describes work completed under both of these work plans. All work described herein is eligible for PCF reimbursement under the above WPCEs.

Monitoring Well Abandonment

On April 8, 2020, WHEM field staff formally abandoned the two (2) remaining and active monitoring wells at the site: MW-1 and MW-3. MW-1 was installed at the southern edge of the former UST grave, and had historically been the only well on the site to regularly report petroleum VOC impacts; it was also the only well on site to have ever reported a VGES exceedance. MW-3 is located just north of the driveway, to the southwest of the home at 28 N Williams. Refer to the attached Site Plan for a depiction of monitoring well locations.

Since neither monitoring well exceeded 20 ft bgs in total depth, WHEM was able to complete well abandonment without the assistance of a VT-licensed well driller. At both locations, monitoring well abandonment followed these steps:

1. Removal of well box via rock bar
    a. Neither well box had a concrete grout collar, so both well boxes were easily removed with minimal footprint.
2. Removal of well casing and screen via rock bar/plyers.
    a. Both monitoring wells were successfully removed in their entirety.
3. Backfilling of annular space with bentonite chips, sand, and clean topsoil.

4. Finishing with clean soil and sod. In the case of MW-3, sod was replaced over the well. In the case of MW-1, where no sod was present, the filled borehole was topped with mulch and clean soil.

There were no problems encountered during abandonment. Groundwater was present in both wells, but no evidence of relict petroleum contamination (odor, sheen) was identified. Well materials (PVC) and well boxes were properly disposed as rubbish. Photographs of the well abandonment are included in the attached Photolog.

System Disassembly and Sump Restoration

The Sump Treatment System at 28 N Williams was disassembled on September 23, 2020, and the home's sump dewatering system was restored to its original state. This work was completed by Vermont Water, Inc., with oversight and assistance provided by WHEM project manager Christopher Page. The sump treatment system comprised a "treatment loop" which pumped incoming groundwater from Sump N and Sump S through two granular activated carbon (GAC) filters, in series. Treated sump water would then flow by gravity to a Liberty laundry pump, which would activate when full to pump treated water to the sanitary sewer. To maintain compliance with the system's discharge permit and City of Burlington statute, a radio-read totalizing flow meter was also installed in-line on the influent side of the treatment loop. The process for treatment system disassembly and sump restoration is described stepwise below.

1. Existing 1.5" PVC line cut at sump outlet and laundry pump outlet, thereby disconnecting treatment loop.
2. Sump outlet re-plumbed via 1.5" PVC to totalizing flow meter and re-connected via 1.5" PVC to sanitary sewer (thus restoring original sump connection).
3. Treatment loop disassembled by Vermont Water, Inc.; PVC cut into manageable lengths, GAC filters drained and removed. Recycling of filters and disposal of PVC and other waste was managed by Vermont Water.

Photographs of finished plumbing with the restored sump pump connection are included in the attached Photolog.

While discharge sampling will no longer be required, untreated groundwater will continue to be discharged to the City sanitary system. The City allowed groundwater discharge from this residence prior to implementation of the corrective action plan, and should continue to allow it in to the future as flow metering continues.

Conclusions and Recommendations

It is WHEM's opinion that this work concludes all sites management-related activities at the property, making it eligible for closure via SMAC designation. Because of persisting groundwater standards exceedances of Naphthalene beneath a portion of the property and the presence of residual soil contamination immediately north of the former UST grave, site closure may require a notice to the land records that meets the requirements of §35-902 of the IRULE (July 2019). Refer to the attached Site Plan for a depiction of the assumed limits of residual petroleum contamination to soil.

Do not hesitate to contact us if you have any questions about the work conducted. Please contact myself cpage@waiteenv.com or Miles Waite at mwaite@waiteenv.com.

Sincerely,

Christopher Page
Project Scientist

Miles E. Waite, Ph.D., P.G.
Senior Hydrogeologist

CC: Bill and Sally Young

ATTACHMENT

Site Plan
Photo Log

GARAGE

GROUNDWATER TREATMENT SYSTEM - DEMISED SEPTEMBER 2020

AS OUTDOOR

JANUARY 2014 EXCAVATION LIMITS

ASPHALT DRIVEWAY

ADDITION: SLAB ON GRADE

RELICT U.S.T. REMOVED SEPTEMBER 2013

20 N. WILLIAMS STREET

HUDDLE RESIDENCE
34 N. WILLIAMS STREET
SITE #2011-4316

SIDEWALK

SEPTEMBER 2013 EXCAVATION LIMITS

HA-5 HA-6 HA-3 HA-8 HA-9 HA-2 HA-7 HA-4 HA-1

CRAWL SPACE

MW-1

FRENCH DRAIN

SUMP SOUTH

ASSUMED LIMITS OF RESIDUAL SOIL CONTAMINATION

SUMP NORTH

DISCHARGE TO SANITARY SEWER

AS BASEMENT

BASEMENT
FLOOR ELEV. APPROX: 92 FT

AS FIRST FLOOR

YOUNG RESIDENCE
28 N. WILLIAMS STREET
SITE #2013-4436

UNUSED A.S.T. REMOVED IN JANUARY 2014

MW-2 ABANDONED

MW-3

WATER LINE (APPROX)

SEWER LINE (APPROX)

ASPHALT DRIVE

SIDEWALK

N. WILLIAMS STREET

LEGEND

- PROPERTY LINE FROM TAX MAP (APPROX)
- SUMP PUMP INSTALLED BY OWNER
- MW-1 MONITORING WELL - ABANDONED MAY 2020
- AS AIR SAMPLE LOCATION (NOVEMBER 2014)
- HA-1 HAND AUGER SOIL SAMPLE BY WHEM (APRIL 2017)

0 5 10 20

GRAPHIC SCALE: 1"=10'

NOTES:
1. BASE PLAN IS ORIGINAL BLUEPRINT OF HOUSE PROVIDED BY OWNER.
2. ALL LOCATIONS APPROXIMATE. THIS IS NOT A SURVEYED PLAN.

Waite - Heindel Environmental Management

• Hydrogeology • Environmental Services •
• Water and Wastewater Design •
Burlington, Vermont • (802) 860-9400

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DATE: 10/12/20
PROJECT NO.
DRAWN BY: D.W.F.
PROJ. MGR: C.P.
APPROVED: M.E.W.

☐ DRAFT ☒ FINAL

YOUNG
28 NORTH WILLIAMS STREET
BURLINGTON, VERMONT

SITE PLAN

FILE: Young Williams Street.dwg

SCALE: 1" = 10'

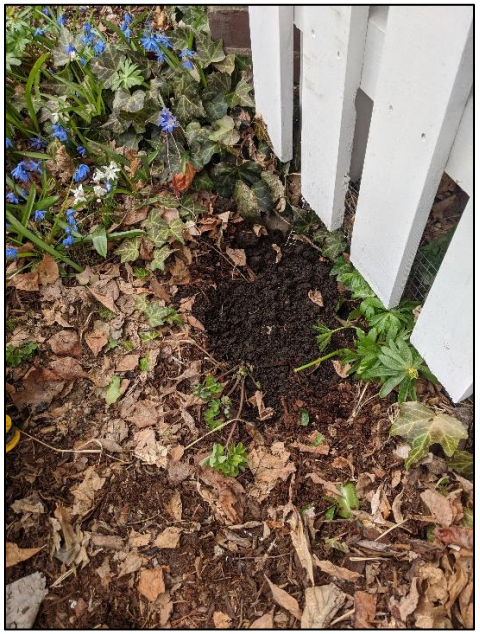

Photo #1: Finished MW-1 after formal abandonment.

Photo #2: Well materials removed at MW-3, before backfilling.

Photo #3: Totalizing flow-meter installed in-line with 1.5” PVC.

Photo #4: Full system restored, showing connection to sanitary sewer (black pipe)