State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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April 16, 2019

DARCI THOMAS
GLASS VAULT LLC
PO BOX 44046
INDIANAPOLIS IN 46244

Subject: Response to Site Investigation Summary and Remedial Action Report for Barb & Ron's Cleaners (Former), 1700 S. Lawe St., Appleton, WI
DNR BRRTS # 02-45-297744

Dear Ms. Thomas:

On October 22, 2018, the Wisconsin Department of Natural Resources (DNR) received a *Site Investigation Summary and Remedial Action Report* dated October 15, 2018 (SI/RA Report) for the above-named site for property located at 1700 South Lawe Street, Appleton, Outagamie County, Wisconsin (the "Property"). EnviroForensics, LLC ("EnviroForensics") submitted the SI/RA Report on your behalf. The DNR also received the $1,050 review fee in accordance with Wis. Admin. Code ch. NR 749. The Property boundaries and sample locations referenced in this letter are located on the attached Figure 2, *Site Layout and Sample Location Map*, by EnviroForensics, dated 1/9/18.

Brief Background

DNR received report of a release to the environment of chlorinated volatile organic compounds (CVOCs) from historical dry cleaner operations in 2002. The dry cleaner operated from 1968-2001. Between 2002 and 2010, property owner Ron Van Asten worked with environmental consultants to investigate the release and perform numerous phases of remedial action until alternative funding needed to be pursued. In the interim, air (vapor) samples were collected at adjacent residences by DNR and the Department of Health Services (DHS) or the City of Appleton Health Department (AHD) in 2010 and 2011 and DNR inspected and sampled the groundwater monitoring well network in 2012.

Mr. Van Asten later began to pursue an insurance policy and work with EnviroForensics to resume the investigation and cleanup efforts. The on-site building was demolished in 2016 with the building slab and asphalt parking lot left intact to continue to serve as the impermeable cover. In February 2018, the Property was transferred to Glass Vault, LLC. In 2018, the building slab was removed, the source area beneath the building excavated and an impermeable clay cap installed. The SI/RA Report documented investigation and cleanup work performed by EnviroForensics since 2010 and included a summary of historical soil, groundwater and air data collected since 2002.

Determination

After review of the SI/RA Report, the DNR makes the following determinations with respect to Wis. Admin. Code chs. NR 716, 724 and 726:

- Additional investigation is needed to define the degree and extent in soil, groundwater and air;

- Additional post-remedial action monitoring is necessary to evaluate the effectiveness of the remedial action excavation performed in 2018, verify plume stability and verify natural attenuation is an appropriate remedy for residual contamination; and
- Documentation of the 2018 remedial action is approved.

Additional Investigation (Wis. Admin. Code ch. NR 716)

Soil
DNR reviewed the water elevation data for this site, the definition for "soil" under Wis. Admin. Code § NR 700.03(58) and the fact sheet, *Smear Zone Contamination*, RR-712. As a result of this review, DNR requests EnviroForensics update their tables and figures for future submittals to indicate any soil data from 8 feet (ft) below ground surface (bgs) or above be labeled as "unsaturated" and therefore interpreted as "soil". Therefore, residual contaminant levels (RCLs) will apply to any soil data collected to 8 ft bgs. This will be especially important when drafting the request for closure.

The extent of soil contamination in South Lawe Street is not yet defined. Soil samples should be collected within the backfill of the storm and sanitary sewer mains at 0-2 ft bgs and 6-8 ft bgs in the following three locations:

1. North of SB-1 but south of East Dennison Street;
2. West of B1900/B1500; and
3. South of SB-3 but north of SB-2.

If soil at 6-8 ft bgs is impacted, groundwater sampling will also be necessary.

Based on DNR review of the SI/RA Report, the extent of soil is defined to the east, southeast and south. Soil to the north is relatively defined. No additional soil investigation to the north is needed if the extent of soil contamination is inferred into East Dennison Street. Alternatively, additional soil investigation can be performed to determine if the limits of soil contamination extend into East Dennison Street.

Groundwater
The vertical extent of groundwater contamination is not yet defined as required in Wis. Admin. Code § NR 716.11(3)(a). A piezometer nested with monitoring well, MW4100R, or slightly adjacent, is needed to define the vertical extent of residual groundwater contamination. The piezometer may need to be double-cased depending on soil data to prevent drawdown of contamination.

A groundwater sample at the location of the former soil boring, SB-5, in South Lawe Street needs to be collected and analyzed for CVOCs to confirm the March 2016 exceedance of the preventive action limit (PAL) for tetrachloroethylene (PCE). If the enforcement standard is exceeded, additional investigation will be necessary.

Air/Vapor
Additional information and likely vapor investigation are needed to fully investigate vapor intrusion from preferential pathways (i.e., sewers) based on data from SG-4, SG-5 and the vapor data obtained from 1631, 1709 and 1713 South Lawe Street. A discussion of the remedial actions performed along and adjacent to the sewers, the status of the historical sewer laterals and upgrades to utility mains along with a conceptual site model should be presented to specifically address the concern for migration of vapors within the utility pipes from the source area(s) to neighboring residences.

It is also unclear if a historical sanitary or storm sewer lateral was present on the north side of the Property adjacent to the water lateral and should be researched as well. Specifically, the vapor data from SG-4 within East Dennison Street needs further evaluation as the vapor data does not appear to correspond with soil or groundwater data.

Additional Post-Remedial Action Monitoring (Wis. Admin. Code chs. NR 724 and 726)

Significant residual contamination remains in groundwater. Groundwater monitoring over time for contaminants of concern and natural attenuation parameters is needed to meet the closure criteria under Wis. Admin. Code § NR 726.05(6). In order to assist with evaluation of residual groundwater contamination, DNR recommends screened intervals be added to the groundwater data table along with the dates for injections (2004 pilot scale, 2005 active full scale, 2006 passive full scale) and excavations (2003 exterior excavation and 2018 interior excavation).

The full monitoring well network will need to be sampled at least once to verify groundwater data last collected more than a decade ago prior to requesting closure. Any wells found to be destroyed or unable to be repaired will need to be abandoned in accordance with Wis. Admin. Code § NR 141.25.

Documentation (Wis. Admin. Code chs. NR 716 and 724)

Vapor data should be submitted to property owners and the DNR within 10 business days after receipt in accordance with Wis. Admin. Code § NR 716.14(2). However, it is not necessary to report results from the additional soil and groundwater investigation within this time frame. As allowed under Wis. Admin. Code § NR 716.14(3), it is appropriate at this site for the supplemental investigation results to be reported within a supplemental site investigation report within 60 days from completion of the delineation in accordance with Wis. Admin. Code § NR 716.15.

Additional information needs to be included on maps for future evaluation of data or the vapor pathway:

- The residential building footprints for 1623, 1631, 1709 and 1713 South Lawe Street;
- Sanitary, storm and water laterals for the listed residences;
- Note on maps that there is an active radon mitigation system at 1631 South Lawe Street and the month/year it was verified as being operated;
- Indicate where wells have been destroyed or abandoned;
- Cross sections should clarify that "clay fill" was used to backfill the excavation beneath the building; and
- If applicable, historical laterals should also be added to the maps.

As stated above, tables and figures in future submittals will need to be revised to indicate soil data collected at or above 8 ft bgs as "unsaturated" or subject to RCLs.

The soil analytical data table needs to be revised to include current RCLs and updated to reflect current exceedances. Information in text conflicts with the data table that indicates the following samples were excavated/removed: B3800 at 6-7.5 ft bgs, B3900 from 6-7.5 ft bgs and S14 at 7 ft bgs.

The groundwater analytical table should be revised to include the December 2018 groundwater sampling date for MW1600 and indicate any wells that have been destroyed or abandoned. Data collected by Stantec (historically Bonestroo and Northern Environmental) on 05/24/2006, 09/19/2006, 12/29/2006, 04/05/2007, 07/11/2007, 10/03/2007, 01/04/2008, 04/04/2008, 07/11/2008, 10/21/2008, 01/07/2009, 07/08/2009, 01/12/2010 and by DNR on 11/29/2012 also needs to be added to the table.

The vapor analytical table needs to:

- Include the vapor sample collected on site by Northern Environmental in 01/29/2009;
- include the vapor samples collected at 1631 South Lawe Street by Northern Environmental on 02/12/2010;
- Include the limits of detection for the vapor samples collected at 1631 South Lawe Street by AHD on 02/16/ 2010;
- Update the data table to reflect that DHS sampled 613 East Dennison Street (basement indoor air and *sump crock headspace*) on 02/18/2011;
- Remove BRDC-01 by AHD from the sub-slab vapor data at 1631 South Lawe Street. This data is from the sump crock headspace sample collected at 613 East Dennison Street by DHS on 02/18/2011; and
- Indicate there is an active radon mitigation system at 1631 South Lawe Street and the status of the system prior to sampling (e.g., shut down 24 hours in advance sampling), as appropriate, if known.

Additional Considerations

Based on data presented in the SI/RA Report, the following should be taken into consideration during drafting of the closure request once the site investigation is complete and post-remedial action groundwater monitoring supports natural attenuation as the remaining remedy for residual contamination:

1. Off-site notifications will be needed prior to submitting a request for closure in accordance with Wis. Admin. Code ch. NR 725 for the following:
    a. Soil, groundwater and vapor contamination in the right-of-way for South Lawe Street;
    b. Soil and vapor contamination in the right-of-way for East Dennison Street; and
    c. Soil, groundwater (due to SB-8) and potential for vapor contamination with future development at 1724 South Lawe Street but no cap requirement.

    Additional notifications may be necessary dependent upon the additional investigation.
2. Monitoring well, MW2100, was destroyed (i.e., "not abandoned" on the Case Closure Form 4400-202, Continuing Obligations / not properly filled and sealed in accordance with Wis. Admin. Code § 141.25) and therefore a continuing obligation will apply for South Lawe Street/East Dennison Street. If additional wells cannot be properly abandoned in accordance with NR 141, these well(s) will be continuing obligations for the respective properties as well.
3. An impermeable cover for exceedances of the groundwater pathway RCLs in residual soil contamination will require development of a Cover Maintenance Plan at 1700 South Lawe Street.
4. Residual CVOCs in soil and/or groundwater will pose a future risk of vapor intrusion at 1700 South Lawe Street, within South Lawe Street, within East Dennison Street and at 1724 South Lawe Street and will be a continuing obligation at the time of closure.

Future Actions

A long-term groundwater monitoring plan ("LTMP") must be submitted per Wis. Admin. Code § NR 714.17(2) to evaluate the effectiveness of the remedial action excavation and capping performed in 2018, to verify groundwater plume stability and verify natural attenuation as an appropriate remedy for residual contamination. The LTMP must include a proposed schedule for reporting the data to the DNR.

A site investigation work plan (SIWP) must be submitted prior to performance of the additional soil, groundwater and vapor investigation in accordance with Wis. Admin. Code § NR 716.09. The SIWP must be submitted within the next 60 days, **by June 14, 2019**. The LTMP can be combined with the SIWP or submitted separately. The DNR requests the LTMP be submitted within the same time frame to keep this site moving toward closure. If a written response to the SIWP and/or LTMP is requested, the appropriate review fee must accompany the report(s) in accordance with Wis. Admin. Code ch. NR 749.

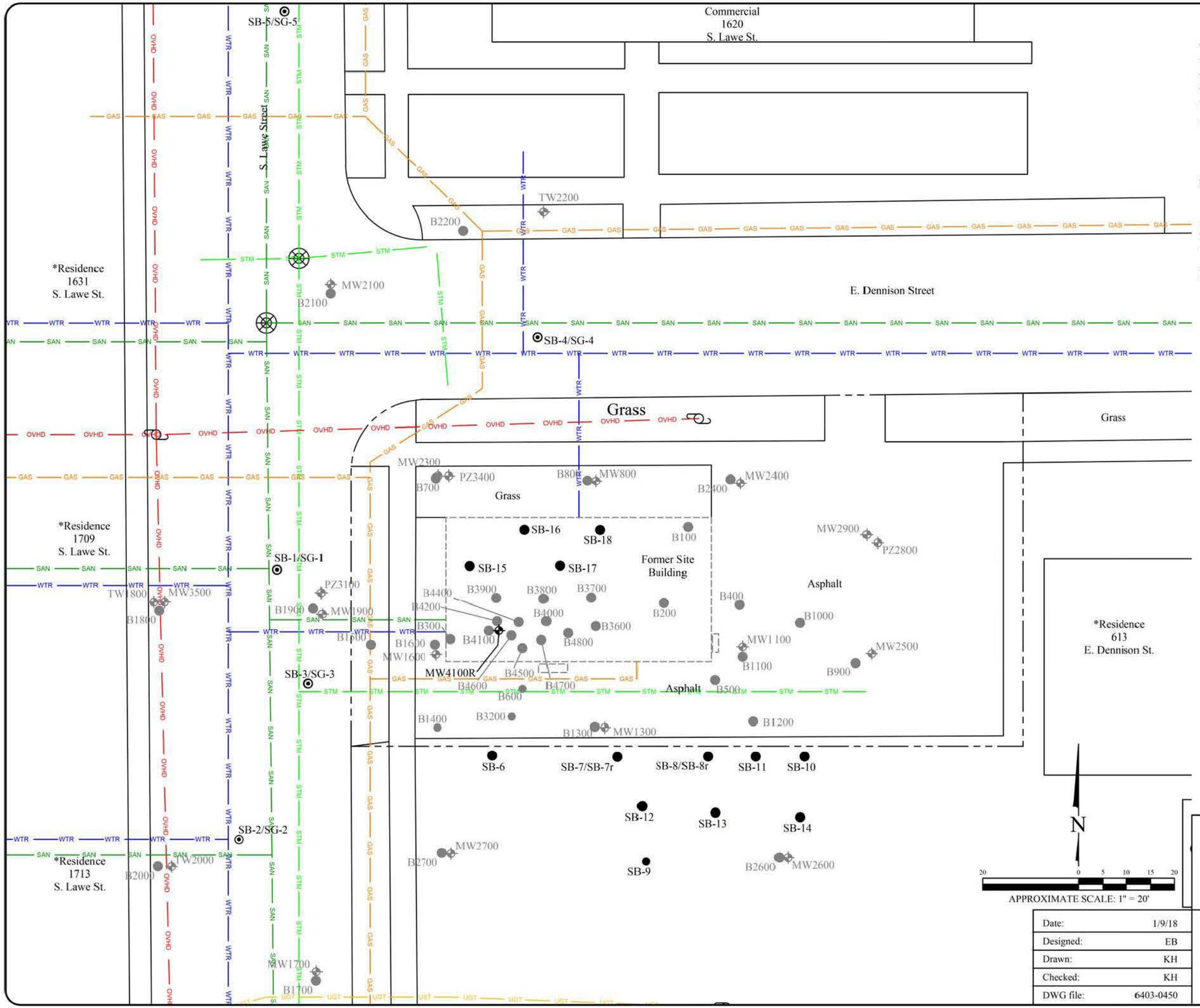
Thank you for the opportunity to review the SI/RA Report. I look forward to receipt of a SIWP and LTMP by June 14, 2019 as discussed above. Please contact me with any questions in Oshkosh by phone at 920-424-7887 or by email at jennifer.borski@wisconsin.gov.

Sincerely,

Jennifer Borski
Hydrogeologist
Remediation & Redevelopment Program

Attachments:
Figure 2, *Site Layout and Sample Location Map*, by EnviroForensics, 1/9/18

cc: Darci Thomas, Glass Vault, LLC, dthomas@stratifiedmgmt.com
Ron Van Asten, rvanasten@new.rr.com
Rob Hoverman, EnviroForensics, rhoverman@enviroforensics.com



Legend

- Property boundary
- Underground gas utility line
- Underground water utility line
- Underground sanitary utility line
- Underground storm utility line
- Over head electrical utility line
- B100 — Soil boring location (By Others)
- MW1100 — Monitoring well location (By Others)
- SB-1 — Soil boring location
- MW4100R — Monitoring well location
- SG-1 — Soil Gas sample location

Notes:

1. MW4100 was abandoned during 2018 excavation and replaced by EnviroForensics with MW4100R
2. * = Indicates vapor intrusion assessment has been performed at the property

SITE LAYOUT AND SAMPLE LOCATION MAP

Former Barb and Ron's Cleaners
1700 South Lawe Street
Appleton, Wisconsin

Date:	1/9/18
Designed:	EB
Drawn:	KH
Checked:	KH
DWG file:	6403-0450

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
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Figure 2

Project 6403