MEMORANDUM

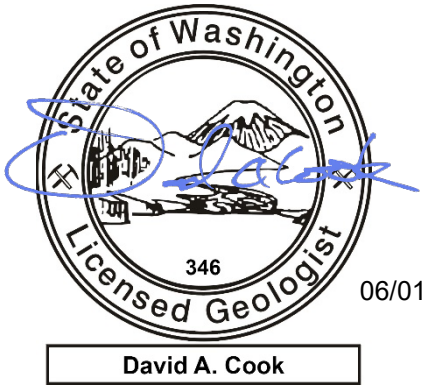
Project No. 160328-05

June 1, 2020

To: Dale Myers, Washington State Department of Ecology

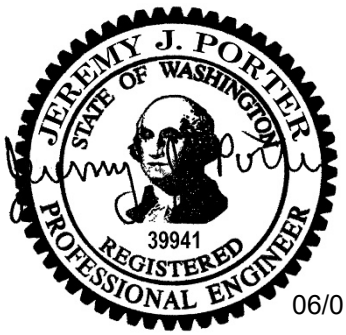
cc: Phil Carmody and Elton Lee, LMI – West Holdings, LLC

From:



06/01/2020

David A. Cook



06/01/2020

Dave Cook, LG, CPG
Principal Geologist
dcook@aspectconsulting.com

Jeremy Porter, PE
Principal Remedial Engineer
jporter@aspectconsulting.com

Re: **Evaluation of Proposed Scope for In Situ Chemical Oxidation Injections**
SKS Shell Station Site, 3901 SW Alaska Street, Seattle, Washington

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Aspect Consulting, LLC (Aspect), on behalf of LMI – West Seattle Holdings, LLC (LMI), has prepared this memorandum to evaluate the necessity and potential effectiveness of proposed in situ chemical oxidation (ISCO) injections at the SKS Shell Station Site located at 3901 SW Alaska Street in Seattle, Washington (the Site; Figure 1). Remedial work at the Site is being completed under Prospective Purchaser Consent Decree (PPCD) #13-2-27556-2, entered on July 29, 2013. To date, remedial work has included remedial excavation completed concurrently with construction of the Whittaker building in 2015, and post-excavation compliance groundwater monitoring is being completed quarterly on and around the Site in accordance with the PPCD and Washington Administrative Code (WAC) Chapter 173-340.

An ISCO injection program was outlined in the Cleanup Action Plan[1] (CAP) and Cleanup Action Report[2] (CAR) as a potential component of the cleanup action to meet the remedial alternative objectives. According to the CAR, ISCO injections will be considered "if concentrations of COCs

[1] SoundEarth Strategies, Inc. (SoundEarth), 2016, Cleanup Action Plan, SKS Shell Property, 3901 Southwest Alaska Street, Seattle, Washington, June 16, 2014.
[2] SoundEarth Strategies, Inc. (SoundEarth), 2016, Cleanup Action Report, SKS Shell Property, 3901 Southwest Alaska Street, Seattle, Washington, October 20, 2016.

persist at levels indicating that attenuation will not occur within two years" of the remedial excavation as a possible treatment for the remaining soil and groundwater contamination below adjoining rights-of-way (ROWs), beyond the practicable extent of the remedial excavation. The purpose of this memorandum is to present the findings of Aspect's initial review of the necessity and anticipated effectiveness of the ISCO injection program as outlined in the CAP and CAR in the context of the post-construction Site conditions.

Based on Aspect's review presented in the following sections of this memorandum, the ISCO injections program as described in the CAP and the CAR cannot be confidently anticipated to effectively support pursuit of the remedial action objectives for the Site (i.e. to degrade or destroy contaminants to meet groundwater cleanup levels for the remaining contaminant sources along Fauntleroy Way SW). This is primarily due to changes in Site conditions as a result of construction of the new Whittaker building. Additional evaluation of the ISCO injections program in the context of the post-construction conditions is recommended.

Background

Cleanup Action Activities and Status

Cleanup action activities, including ongoing post-cleanup compliance monitoring, have occurred at the Site in accordance with the PPCD and WAC Chapter 173-340 since 2015. As described in the CAP and CAR, the selected cleanup action alternative consisted of the following successive phases:

1. Source removal and remedial excavation to the property boundaries of the Site occurred concurrently with construction mass excavation for the Whittaker building. Excavation occurred between March 2015 and June 2015, extending from lot line to lot line and ranging from approximately 32 to 34.5 feet below ground surface (bgs; elevation 243 to 240.5 feet NAVD88[3]).
2. Dewatering, treatment, and disposal of contaminated groundwater in the immediate vicinity of the north and east Site property boundaries. A total of approximately 135,780 gallons of groundwater was removed from dewatering wells for treatment and disposal between March 2015 and June 2015.
3. Installation of an impermeable chemical vapor barrier along the exterior of the building foundation elements located on the Site. The vapor barrier, consisting of waterproof Voltex DS contaminant resistant material, VI-20 detailing fabric, and Liquid Boot spray-applied membrane, was installed just prior to pouring the concrete building foundation in 2015.
4. Chemical oxidation injections to address residual soil and groundwater contamination remaining beneath the ROWs, beyond the practicable extent of the remedial excavation, if appropriate. ISCO injections have not yet occurred at the Site—the proposed scope of the ISCO injections program, as outlined in the CAP and CAR, is discussed in the following sections of this memorandum.

Post-cleanup compliance and natural attenuation monitoring of groundwater began in March 2016 and is ongoing on a quarterly basis. To date, sixteen consecutive quarters of groundwater monitoring have been completed; the most recent was completed in December 2019, and the first quarter 2020 event sampling occurred in late April 2020 (data evaluation is in progress).

[3] Elevations presented in feet referenced to North American Vertical Datum of 1988 (NAVD88).

Groundwater monitoring data since March 2016 generally shows attenuating trends of contaminants of concern (COCs). However, the most recent four quarters of compliance sampling in 2019 continued to show periodic concentrations of COCs above applicable MTCA Method A cleanup levels in two wells located in the Fauntleroy Way SW ROW: diesel-range total petroleum hydrocarbons (TPH) in MW104 and gasoline- and diesel-range TPH in RW03 (Figure 1). A summary of groundwater analytical results for gasoline- and diesel-range TPH and benzene at RW03 and MW104 is included in Table 1.

Evaluation of ISCO Injections Program

Summary of Proposed Scope and Status

The proposed scope for an ISCO injections program at the Site is described in the CAP and CAR. Although a work plan was not submitted to Ecology, preliminary concepts were provided to us by the prior consultant as part of the consultant transition. We understand that the prior consultant was considering executing the scope as written in the CAP and CAR, to include injections of approximately 300 gallons of the chemical oxidizer Klozur® One by PeroxyChem into each of the five remaining remediation wells, RW01 through RW05 (Figure 1). These wells are located in the sidewalk within approximately five to ten feet of the foundation and east parking garage wall of the Whittaker building along Fauntleroy Way SW. They were selected for injections based on their proximity to remaining groundwater contamination at wells RW03 and MW104. The focus of the injection scope is the seasonal fluctuation in concentrations of gasoline- and diesel-range TPH in monitoring wells RW03 and MW104 (Figure 2).

Aspect understands that the ISCO injections program was discussed with Ecology during the October 1, 2019 meeting, at which time Ecology requested that the ISCO injections program be pursued, including development of a specific work plan for the scope and pursual of permits needed to complete the work. At the time of this memorandum, a work plan has not been submitted for Ecology review. The prior consultant attempted to obtain permits for completing the work in First Quarter 2020 by modifying existing Street Use Permits for partial closure of a 40-foot section of the Fauntleroy Way SW sidewalk extending south of the intersection with SW Alaska Street. However, the furthest south proposed injection well, RW02, lies more than 65 feet south of the intersection, outside of the area covered by the permit modifications. Additionally, the permitted area includes only a partial sidewalk closure, but access to the wells proposed for injections will also require closure of the bus stop lane to complete the ISCO injections program. The permits as written do not create sufficient space to ensure safety of passing pedestrians, for equipment staging, or for completing injections at RW01 to RW05, as proposed in the CAP and CAR and discussed with Ecology. After a work plan for injections has been developed and approved by Ecology, a new street use permit will be obtained based on the approved scope.

Evaluation of Proposed ISCO Injection Program and Post-Construction Conditions

The ISCO injections scope as described in the CAP and CAR does not appear to have been re-evaluated since publishing the CAP in 2014 and the CAR in 2016, or in the context of post-construction conditions at the Site. Based on Aspect's review of post-construction conditions and monitoring data, a number of post-construction conditions have been identified as likely impeding the effectiveness of the ISCO injection program as originally proposed in the CAP and CAR. These conditions require additional analysis and incorporation into development of a scope of work for

ISCO injections to ensure that the remedial action objectives for the Site are appropriately pursued by conducting ISCO injections. These uncertainties are described below and shown conceptually on Figure 2:

- ***Injection Area of Influence, Volume of Injection Solution, and Surrounding Formation:*** The distribution of oxidant in the subsurface, and the effectiveness of treating residual contamination, is influenced by the heterogeneity of the soil and the ability of the formation to accept the injection solution. Based on the assumptions stated in the CAP and CAR pertaining to the surrounding formation's acceptance rates for injection solution, the scoped injection volume of 300 gallons of solution is anticipated to saturate a radius of only approximately 2 feet around each remediation well. The remediation wells proposed for injections, RW-01 to RW-05 (Figure 1), are situated approximately 15 feet apart on average, and no closer than 12 feet apart; therefore, a significant portion of surrounding soil and groundwater is unlikely to be sufficiently affected by the ISCO injection program as proposed in the CAP and CAR. Further, review of boring logs for the remediation wells showed at least one well, RW-02, is screened almost entirely in silt, suggesting that the surrounding formation at the screened interval may not accept injection solution at the assumed rates stated in the CAP and CAR, resulting in a radius of influence even smaller than 2 feet.

  Additional analysis is required to determine whether the volumes, pressures, and injection locations as proposed in the CAP and CAR are sufficient to achieve the project goals and remedial action objectives in the context of post-construction conditions, or if an amended injection scope is necessary.

- ***Proximity to Whittaker Building Foundation and Subgrade Drainage System:*** The wells proposed for ISCO injections, RW01 to RW05, are located within 5 to 10 feet of the east subgrade wall of the new Whittaker building foundation and parking garage, which includes a subgrade drainage system for collection and discharge of groundwater, and lie within 50 feet of the building stormwater sump. The close proximity of RW01 to RW05 to the building raises a number of concerns for the effectiveness of injections at these locations. First, the top of the well screens of RW01 to RW05 (approximately elevation 245 feet NAVD88) is located only approximately one foot below the new building footing drain(s)(approximate elevation 246 feet NAVD88) and approximately 9 feet above the new building stormwater sump (approximately 236 feet NAVD88). Because injections would raise groundwater levels in the vicinity of RW01 to RW05, there is risk for groundwater containing injection solution to enter the building drainage system, especially in the vicinity of new post-construction preferential pathways (such as, higher permeability backfill below the foundation, backfill around footing drains, and potentially along the abandoned shoring wall tiebacks beneath Fauntleroy Way SW, among others).

  Additional analysis of the ISCO injection program, including a post-construction conditions pilot test at RW01 to RW05, is recommended to determine whether injection solution as proposed in the CAP and CAR will be collected by the Whittaker building drainage system and removed prior to having any remedial effect on residual contaminated groundwater and/or soil near the injection area(s).

- ***Injection Solution Chemical Interaction with Vapor Barrier:*** The portion of the foundation and parking garage walls of the Whittaker building occupying the Site was constructed with a chemical vapor barrier, consisting of waterproof Voltex DS contaminant resistant material, VI-20 detailing fabric, and Liquid Boot spray-applied membrane, to mitigate the vapor intrusion pathway from contaminated material left in place below ROWs to the east and north of the Site. The vapor barrier extends horizontally below the foundation (approximate elevation 247 feet NAVD88), and vertically on the exterior of the parking garage walls to within approximately 5 feet of ground surface (elevation 265 feet NAVD88). Following injections as proposed in the CAP and CAR, groundwater levels are anticipated to rise above the foundation elevation and groundwater containing injection solution may come in contact with the vapor barrier.

  Additional analysis is needed to understand the risk and potential for chemical reactivity between the vapor barrier materials and proposed injection solution (sodium persulfate).

Natural Attenuation Analysis

In addition to the conditions listed above, a focused analysis of natural attenuation of COCs in groundwater in RW03 and MW104 should be conducted to evaluate the necessity and effectiveness of the ISCO injection program as proposed in the CAP and CAR. Aspect's initial review of the groundwater monitoring data to date indicates the following:

- ***Analysis of Natural Attenuation in RW03 and MW104:*** There appear to be seasonal variations in concentrations of gasoline- and diesel-range TPH in the two targeted compliance wells, RW03 and MW104 (Figure 1). However, data collected to date do not suggest that concentrations have plateaued; rather, concentrations over successive Decembers (when concentrations peak) have continued to decrease, suggesting that natural attenuation is occurring.

  Additional analysis of natural attenuation trends at RW03 and MW104 should be completed to form the baseline for evaluation of the necessity and effectiveness of ISCO injections at the Site.

Evaluation Findings and Recommendation

Based on Aspect's review, the ISCO injections program as described in the CAP and the CAR cannot be confidently anticipated to effectively support pursuit of the remedial action objectives for the Site (i.e. to degrade or destroy contaminants to meet groundwater cleanup levels for the remaining contaminant sources along Fauntleroy Way SW). This is primarily due to changes in Site conditions as a result of construction of the new Whittaker building. The new below-grade building facilities, groundwater flow, and ongoing natural attenuation effects have not been evaluated related to the effectiveness of the ISCO injections program as described in the CAP and CAR.

Aspect recommends that the ISCO injections program be reevaluated in the context of the post-construction Site conditions and the natural attenuation trends specific to the compliance wells that continue to show exceedances of COCs in groundwater. Proposed next steps for completing this evaluation are presented in the following section.

Summary of Proposed Next Steps

Based on the uncertainties described above, Aspect proposes the following steps:

1. **Evaluation of MNA at RW03 and MW104 using existing data** to form the baseline for development of the scope for an ISCO injections program. If additional data is required for analysis, MNA parameters could be added to an upcoming groundwater sampling event.
2. **Prepare a pilot test work plan.** This effort will include evaluation of each of the technical uncertainties described in this memorandum, which will be incorporated into the scope design. This work plan will include, at a minimum, a pilot test consisting of injection of clean water with a chemical tracer at the selected wells, and concurrent monitoring of effluent from the Whittaker building drainage system to determine if injected solution will be removed from groundwater via the footing drains or sump. Hydraulic testing of the proposed injection wells may also be warranted in the unlogged wells, to gauge injection capacity.
3. **Implement the pilot test and evaluate feasibility of ISCO injections.** The pilot test will be conducted in accordance with the work plan developed under step 2. Pilot test results will be used to evaluate the feasibility of ISCO injections. If the testing indicates that ISCO is unlikely to be effective, based on 1) the appearance of tracer material in the footing drains or sump indicating short-circuiting, or 2) hydraulic testing and monitoring indicating that well injection capacity and/or solution distribution is inadequate to provide sufficient treatment in the target area, alternative approaches to meeting remedial objectives will be evaluated.
4. **Prepare a work plan for an ISCO injection program.** If the results of the pilot test indicate that ISCO is a viable and potentially effective remedial option, a work plan addendum outlining the scope of the ISCO injection program will be prepared for Ecology approval prior to implementation.
5. **Implement ISCO injection program work plan.** Following approval by Ecology for the full injection scope, street use permitting will be completed to allow for, at a minimum, closure of the bus lane on Fauntleroy Way SW, and potentially for full closure of the sidewalk along Fauntleroy Way SW. Due to the volume of daytime traffic on the sidewalk and the number of active businesses located in the Whittaker building next to the proposed injection wells, it is likely that injections will need to be completed during overnight shifts. After securing appropriate permits, the ISCO injection program will be implemented in accordance with the Ecology-approved work plan.

Limitations

Work for this project was performed for LMI – West Seattle Holdings, LLC (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Please refer to Appendix A titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

Attachments: Table 1 – Summary of Groundwater Analytical Results at Targeted Compliance Wells
Figure 1 – Site Plan
Figure 2 – Cross Section A–A'
Appendix A – Report Limitations and Guidelines for Use

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TABLES

Table 1. Summary of Groundwater Analytical Results at Targeted Compliance Wells

Project No. 160328, SKS Shell Station Site, 3901 SW Alaska Street, Seattle, WA

Analyte		Benzene	Toluene	Ethylbenzene	Total Xylenes	Gasoline Range Organics	Diesel Range Organics	Diesel Range Organics (SG)	Heavy Oil	Heavy Oil (SG)
Unit		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A Cleanup Level*		**5**	**1000**	**700**	**1000**	**800**	**500**	**500**	**500**	500
Location	**Date**									
MW104	03/17/2016	**1.2**	**1.8**	**2.2**	**5.7**	**480**	**1200 X**	--	< 300 U	--
	06/24/2016	**2.5**	**2**	**3**	**9.5**	**940**	**3200**	--	< 250 U	--
	09/28/2016	**7.2**	< 1 U	**3.7**	**7.4**	**940**	**4000 X**	--	**340**	--
	12/23/2016	**2.1**	**2.1**	**17**	**27**	**2000**	**16000**	**180 X**	**380**	< 250 U
	03/17/2017	< 1 U	< 1 U	**8.5**	**10**	**1400**	**7900**	**290 X**	< 400 U	--
	06/15/2017	< 1 U	< 1 U	**4**	**3.1**	**700**	--	**370 X**	--	< 250 U
	09/14/2017	< 1 U	< 1 U	**1.3**	< 3 U	**460**	**2200**	**230 X**	< 300 U	< 250 U
	12/12/2017	< 1 U	**1.1**	**1.3**	< 3 U	**340**	**780 X**	--	< 350 U	--
	03/2/2018	< 1 U	< 1 U	< 1 U	< 3 U	**460**	**590 X**	--	< 250 U	--
	06/21/2018	< 1 U	< 1 U	< 1 U	< 3 U	**130**	**720**	--	< 350 U	--
	09/17/2018	< 1 U	< 1 U	< 1 U	< 3 U	< 100 U	**480**	--	< 350 U	--
	12/18/2018	< 1 U	< 1 U	< 1 U	< 3 U	< 100 U	**390**	--	< 250 U	--
	03/14/2019	< 1 U	< 1 U	< 1 U	< 3 U	**170**	**690 X**	--	< 300 U	--
	06/06/2019	< 1 U	< 1 U	< 1 U	< 3 U	**210**	**750 X**	--	**290**	--
	9/18/2019	**DRY**								
	12/19/2019	< 1 U	< 1 U	< 1 U	< 3 U	< 100 U	**310**	--	**300**	--
RW03	03/17/2016	**41**	**6.9**	**51**	**260**	**2300**	**1400 X**	--	< 250 U	--
	06/24/2016	**27**	**4.4**	**27**	**59**	**1600**	**3600**	--	< 250 U	--
	09/28/2016	**6.7**	< 1 U	**20**	**45**	**1100**	**2400 X**	--	< 300 U	--
	12/23/2016	**470**	**16**	**380**	**750**	**9000**	**11000**	**720 X**	< 300 U	< 300 U
	03/02/2017	**150**	< 10 U	**220**	**190**	**4900**	**11000 X**	**880 X**	--	< 250 U
	06/14/2017	**7**	< 1 U	**32**	**11**	**1300**	**1500**	**320 X**	< 250 U	< 250 U
	09/14/2017	**2.8**	**1.3**	**15**	**4.5**	**560**	**690 X**	**140 X**	< 300 U	< 300 U
	12/12/2017	**8.8**	**17**	**39**	**170**	**2500**	**1000 X**	--	< 300 U	--
	03/23/2018	--	--	--	--	--	**760 X**	--	< 250 U	--
	06/22/2018	< 1 U	**2.3**	**31**	**34**	**730**	**740 X**	--	< 250 U	--
	09/17/2018	< 1 U	< 1 U	**11**	**15**	**370**	**430**	--	< 250 U	--
	12/18/2018	**6.5**	**5**	**75**	**250**	**2800**	**1600**	--	< 250 U	--
	03/15/2019	**1.9**	**1.7**	**46**	**140**	**1700**	**730 X**	--	< 250 U	--
	06/07/2019	< 1 U	< 1 U	**14**	**4.3**	**410**	**680 X**	--	< 250 U	--
	09/13/2019	< 1 U	< 1 U	**1.4**	**3**	**270**	**360 X**	--	< 250 U	--
	12/19/2019	**2.4**	< 1 U	**36**	**100**	**2200**	**1400 X**	--	< 250 U	--

Notes and Abbreviations

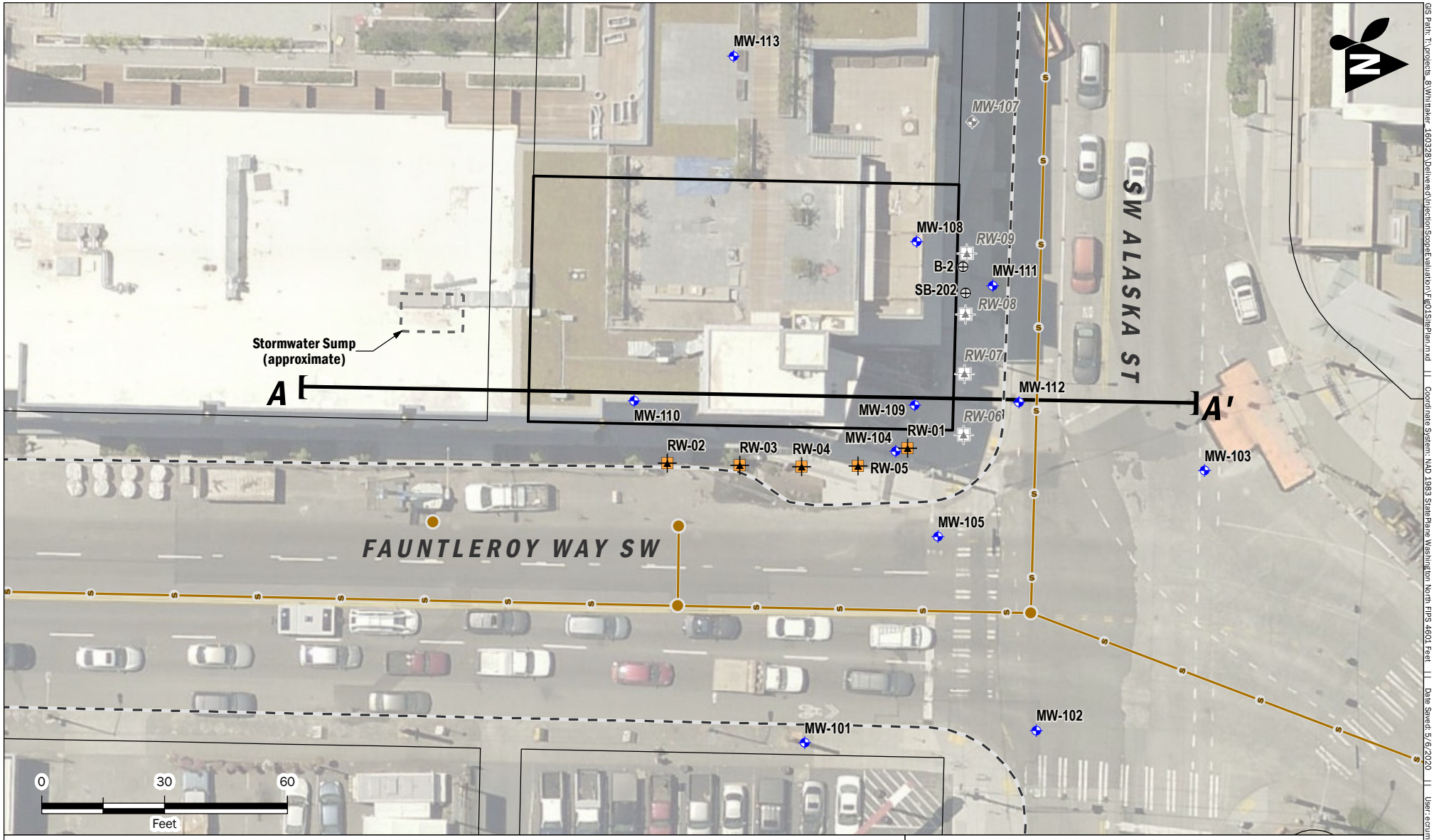
Bold - Analyte detected above the laboratory reporting limits

Purple - Detected concentration exceeds MTCA Method A Cleanup Levels

U - Analyte was not detected above the laboratory reporting limit

X - Chromatographic pattern did not match fuel standard

FIGURES



Boring
Monitoring Well
Existing Remediation Well/ Proposed Injection Well
Decommissioned Monitoring Well
Decommissioned Remediation Well
Cross Section
Sanitary Sewer
Sidewalk Edge
SKS Shell Property
King County Parcel (2020)

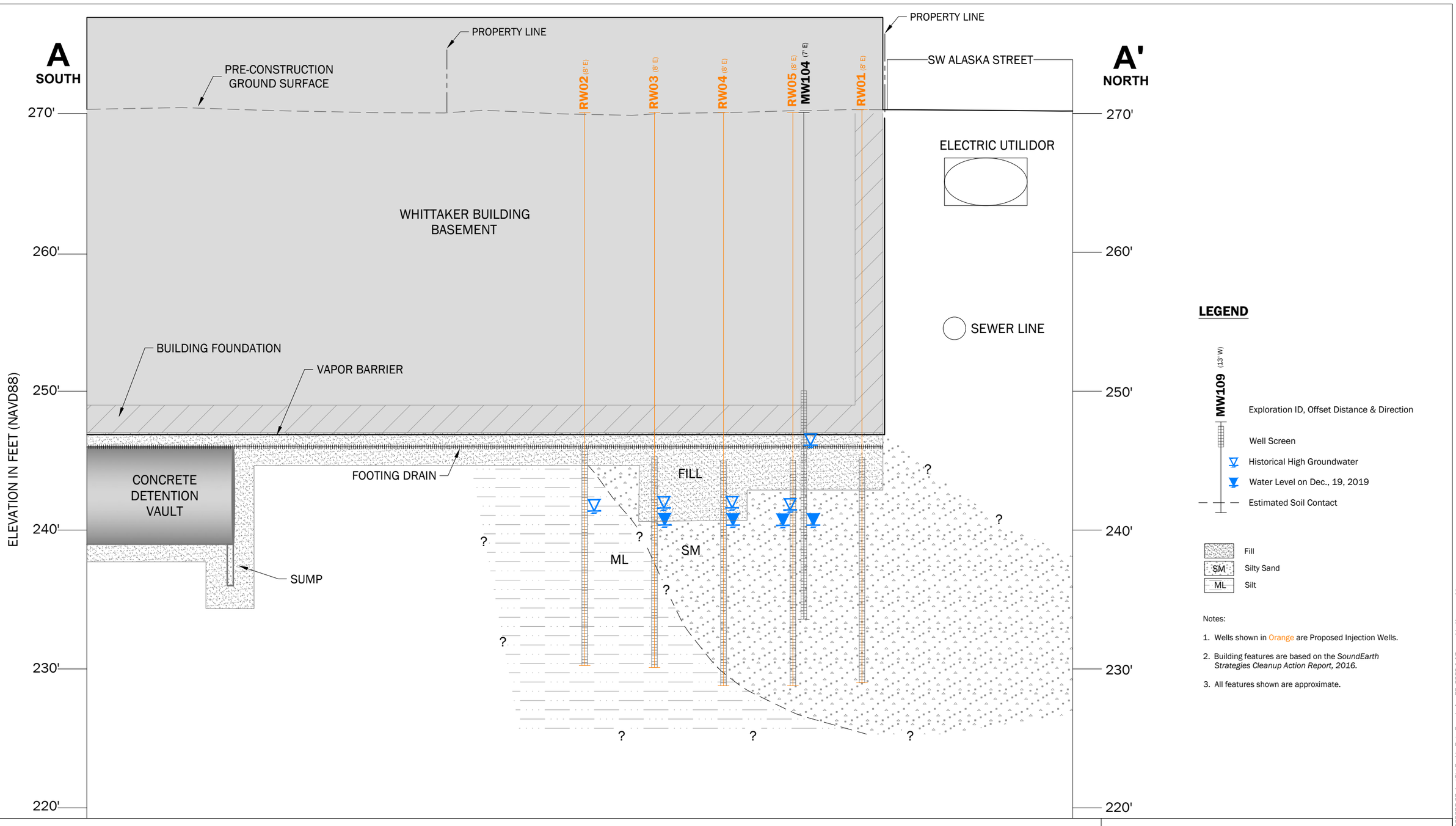
Note:
- All features shown are approximate
- Only select prior borings are shown, refer to the Cleanup Action Report for additional historical boring locations

Site Plan

Injection Scope Evaluation
SKS Shell Station Site
3901 Southwest Alaska Street
Seattle, Washington

Aspect Consulting	MAY-2020	BY: EAC / KB	FIGURE NO. 1
	PROJECT NO. 160328-003	REVISED BY: ---	

Basemap Layer Credits || Pictometry, King County



LEGEND

MW109 (13' W) — Exploration ID, Offset Distance & Direction

- Well Screen
- Historical High Groundwater
- Water Level on Dec., 19, 2019
- Estimated Soil Contact

- Fill
- SM — Silty Sand
- ML — Silt

Notes:

1. Wells shown in Orange are Proposed Injection Wells.
2. Building features are based on the *SoundEarth Strategies Cleanup Action Report, 2016.*
3. All features shown are approximate.

0 20 40 Feet

Horizontal Scale: 1" = 20'
Vertical Exaggeration 3x

Cross Section A-A'

Injection Scope Evaluation
SKS Shell Station Site
3901 Southwest Alaska Street
Seattle, Washington

Aspect Consulting	Apr-2020	BY: KB/CMV	FIGURE NO. 2
	PROJECT NO. 160328	REVISED BY: SCC	

APPENDIX A

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect’s services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect’s services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect’s services do not include an evaluation of radon or lead in drinking water, unless specifically requested.