SITE HAZARD ASSESSMENT
Worksheet 1: Summary Score Sheet

SITE NAME: Block 38 West **Rank: 3**

Cleanup Site ID: 15008

Facility/Site ID: 62773

Completed on 2/10/2020 for inclusion on the February 2020 Hazardous Sites List.

LOCATION OF SITE

520 Westlake Ave N

Seattle, King County, WA 98109

Township 25N, Range 4E, Section 30

Latitude, Longitude: 47.62390, -122.33803

Tax Parcel ID: 1983200170, 1983200180, 1983200196

SITE DESCRIPTION

Within Currently Defined Site Boundaries

Based on currently available information, the Block 38 West site (Site) includes the 3 tax parcels listed above. The Site includes approximately 1 acre of land zoned for mixed use (SM-SLU 175/85-280). The Site occupies one half of a city block in the South Lake Union neighborhood of Seattle, and is bordered by Mercer Street to the north, Westlake Avenue North to the west, Republican Street to the south, and an alley on the east.

The Site has historically been occupied by retail and commercial businesses. At the current stage of site characterization, the source of contamination on the Site is unclear.

The Site is currently undergoing redevelopment. Existing buildings on all 3 parcels were demolished in 2019. The planned new building on the Site will have 5 stories of retail and office space and 4 levels of underground parking.

Historical Owners and Operators

From	To	Owner/Operator	Site Uses
	1880s		undeveloped marshland along Lake Union
1890s	about 1920		lumber storage yard
early 1920s	2019	northern parcel (1983200196)	warehouse storage, commercial and retail including commercial printer
early 1900s	2019	central parcel (1983200180)	commercial business prior to 1954 (horse stable and wagon house, blacksmith, wagon shop, auto repair, veterinary hospital); 2 story retail building with rooftop parking built 1964 and remained until demolition in 2019
early 1900s	2019	southern parcel (1983200170)	small commercial buildings prior to 1919 (blacksmith, wagon shop); 2 story plus basement masonry retail/commercial building constructed in 1919 and present until 2019
1998-99	2019	City Investors IX LLC	redevelopment of the Site began in 2019

SITE HAZARD ASSESSMENT
Worksheet 1: Summary Score Sheet

Area Surrounding the Site

The area surrounding the Site is primarily occupied by office buildings, many of which also include retail spaces. Lake Union Park and Lake Union are located approximately 600 feet north of the Site.

There are 47 additional Ecology cleanup sites located within 1/4 mile of this Site. Sixteen have received a No Further Action determination, 23 are designated Cleanup Started, and 8 are designated Awaiting Cleanup. Three of these sites are of particular interest to the Block 38 West site, based on proximity or documented extent of contamination. Site reports for Block 38 include documented contamination off-property that may come from one of these other sources. To try to capture only Block 38 related contamination, this Site Hazard Assessment will only discuss in detail and consider for ranking contamination identified within the 3 tax parcels listed above.

The Tosco 25535330857 site (CSID 6134) is located north of the Site across Mercer Street. Contamination on this site includes petroleum hydrocarbons in the gasoline, diesel, and oil ranges and other petroleum associated chemicals (benzene, lead, polycyclic aromatic hydrocarbons (PAHs)) in soil and groundwater. It has a designation of Cleanup Started and is currently enrolled in the Voluntary Cleanup Program.

The Rosen Property site (CSID 5123) is located on the eastern half of Block 38. The site is contaminated with diesel and oil range petroleum hydrocarbons in soil and groundwater. The site received a property specific No Further Action determination through the Voluntary Cleanup Program, but has an overall status of Cleanup Started.

The American Linen Supply Co Dexter Ave site (CSID 12004) is located approximately 900 feet northwest of the Site. An interim cleanup action is currently being performed at the American Linen site under Ecology supervision. A large plume of groundwater contaminated with chlorinated solvents extends off of the American Linen property. Based on current information, the Site is an area where American Linen contaminants may be detected in groundwater at concentrations below MTCA Method A cleanup levels. Contaminants linked to the American Linen site are not considered for ranking in this Site Hazard Assessment.

SITE CHARACTERIZATION AND/OR REMEDIATION

Site characterization activities to date have primarily consisted of investigations by Farallon Consulting. These began in July 2014, when a boring was advanced and completed as MW-130. Soil was sampled at the time of the boring, as was a reconnaissance groundwater sample collected at 15-20 feet below ground surface (bgs). Groundwater was sampled in both 2014 and 2017, prior to any additional site characterization activities. In August 2018, 11 additional soil borings were done at the Site, 5 of which were completed as monitoring wells (FMW-132 through -136). The other locations are designated on the figures below as FB-01 through -06. Reconnaissance groundwater samples were collected from some of these locations at the time of boring. Monitoring wells MW-137 and -138 were installed in November 2018. Soil samples were collected from utility potholes in the alley adjacent to the Site in January 2019.

Three water bearing zones have been identified at the Site, referred to as the shallow water bearing zone (5-8 feet bgs), the intermediate water bearing zone (15-20 feet bgs), and the deep outwash aquifer (55-65 feet bgs). FMW-130 and -136 are located in the intermediate water bearing zone, FMW-137 and -138 are located in the deep outwash aquifer, and the remainder of the wells are located in the shallow water bearing zone. For most wells, groundwater was sampled twice in 2018 and once in 2019.

MTCA Method A cleanup levels for unrestricted land use are referenced below as a point of comparison for Site data. Cleanup levels for the Site have not yet been determined.

SOIL RESULTS
Gasoline and diesel range petroleum hydrocarbons were below Method A cleanup levels in all on-property samples analyzed, but above Method A in samples collected in the alley. Oil range petroleum hydrocarbons did exceed Method A in 2 on-property samples. Benzene, toluene, ethylbenzene, and xylenes were below laboratory reporting limits in all on-property samples analyzed, and were not analyzed in any alley samples. Carcinogenic PAHs (cPAHs) were above Method A cleanup levels in 5 on-property and 4 alley samples. Total

naphthalenes were also above Method A in 1 on-property sample. Soil was analyzed for other volatile and semivolatile compounds and metals, but none were present above Method A cleanup levels. On-property soil sampling locations with Method A exceedances were located on the eastern third of the property, as shown below in Figure 1A.

GROUNDWATER RESULTS
Groundwater flow in the shallow water bearing zone is to the southwest. Flow was not determined for the other water bearing zones due to the small number of wells in each.

Contamination above Method A cleanup levels has been identified in 3 on-property groundwater sampling locations. Diesel range petroleum hydrocarbons were present above the cleanup level in multiple samples collected from FMW-134 and in the reconnaissance groundwater sample collected from FB-3. Naphthalene was present above the cleanup level in a 2018 sample from FMW-134 and in the 2014 shallow groundwater (15-20 feet bgs) sample collected during the installation of FMW-130. These areas are shown below on Figure 1B.

NOVEMBER 2019 RELEASE
In late November 2019, a black oil liquid was discovered discharging from a side sewer originating on the Site into the eastern-adjacent alley. A sample of the liquid confirmed the presence of petroleum hydrocarbons in the gas, diesel, and oil range. The side sewer was capped following discovery and the portions that are currently accessible on Site were removed. Additional work is needed to determine the source of contamination and extent of impacts.

Figure 2 shows the approximate location of the side sewer. A heating oil underground storage tank is also noted on this figure, near the southern boundary of the Site along Republican St. This 1500 gallon tank was removed in 1989. No petroleum contaminated soil was noted during the removal, and groundwater was not encountered.

ADDITIONAL INFORMATION COLLECTED BY THE SITE HAZARD ASSESSOR

The Ecology site manager visited the Site on December 17, 2019 and provided a description of current conditions to the Assessor. Site conditions are consistent with what is described in other sections of this report. Rubble piles were present on some areas of the Site. Development activities underway on the Site include installation of shoring and drilling of dewatering wells.

SPECIAL CONSIDERATIONS

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

☐ **Surface Water**

☑ **Air**

Naphthalene, a volatile contaminant, is present in soil and the shallowest layer of groundwater.

☑ **Groundwater**

Documented contamination in groundwater.

The only volatile contaminant scored for the air route, naphthalene, does not have environmental toxicity data. Ranking was therefore only based on the human health scores.

DEPARTMENT OF ECOLOGY
State of Washington

SITE HAZARD ASSESSMENT
Worksheet 1: Summary Score Sheet

ROUTE SCORES

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	33.2	Air/ Environment:	
Groundwater/ Human Health:	31.0		

Overall Rank: 3

DEPARTMENT OF ECOLOGY
State of Washington

SITE HAZARD ASSESSMENT
Worksheet 1: Summary Score Sheet

REFERENCES

1 Email from Suzy Stumpf (Farallon) to Tena Seeds (Ecology) re: Block 38 West - Release Notification - Additional Information. December 26, 2019.

2 ESRI. Accessed 2019. World Annual Evapotranspiration Map. Accessed through https://www.esri.com/arcgis-blog/products/arcgis-online/mapping/world-average-annual-evapotranspiration-web-map-now-available/

3 Farallon Consulting. December 28, 2018. Subsurface Investigation Report and Environmental Media Management Plan, Block 38 West Property, 500 through 536 Westlake Avenue North, Seattle, Washington.

4 Farallon Consulting. December 9, 2019. Release Notification, Block 38 West Property, 500 through 536 Westlake Avenue North, Seattle, Washington.

5 Farallon Consulting. November 8, 2019. Interim Action Work Plan, Block 38 West Property, 500 through 536 Westlake Avenue North, Seattle, Washington.

6 King County. Accessed 2020. iMap. https://8 gismaps.kingcounty.gov/iMap/

7 Missouri Census Data Center. Accessed 2019. Circular Area Profiles – Version 10C. http://mcdc.missouri.edu/websas/caps10c.html

8 NOAA National Centers for Environmental Information. Accessed 2019. Global Summary of the Year 2000 - 2018 – Seattle Sand Point Weather Forecast Office. Requested from https://www.ncdc.noaa.gov/cdo-web/

9 WA Dept. of Ecology. Accessed 2020. What's in My Neighborhood. https://fortress.wa.gov/ecy/neighborhood/

10 WA Dept. of Health Office of Drinking Water. Accessed 2019. Find Water System. https://fortress.wa.gov/doh/eh/portal/odw/si/FindWaterSystem.aspx

DEPARTMENT OF ECOLOGY
State of Washington

SITE HAZARD ASSESSMENT
Worksheet 2: Route Documentation

SITE NAME: Block 38 West

Cleanup Site ID: 15008

Facility/Site ID: 62773

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Explain the basis for choice of substances to be used in scoring:

List those management units to be considered for scoring:

Explain basis for choice of unit to be used in scoring:

2. AIR ROUTE

List those substances to be considered for scoring:

Naphthalene

Explain the basis for choice of substances to be used in scoring:

Volatile contaminant present above Method A cleanup level in soil or shallow groundwater.

List those management units to be considered for scoring:

Soil, groundwater

Explain basis for choice of unit to be used in scoring:

Media confirmed to be contaminated.

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

TPH-D (as naphthalene), naphthalene, cPAHs

Explain the basis for choice of substances to be used in scoring:

Contaminants present above Method A in soil or groundwater.

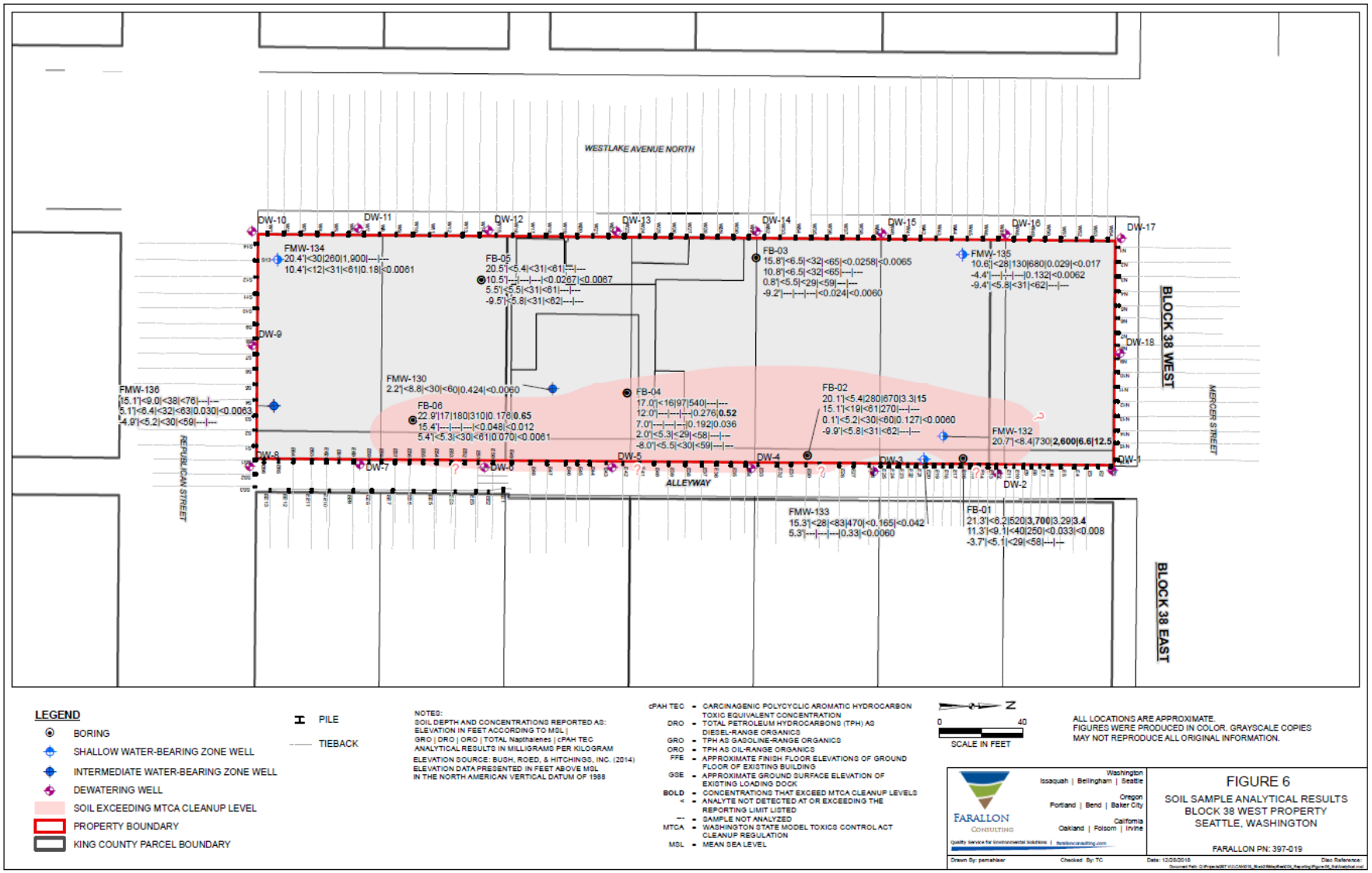
List those management units to be considered for scoring:

Soil, groundwater

Explain basis for choice of unit to be used in scoring:

Media confirmed to be contaminated.

A.



LEGEND

- BORING
- SHALLOW WATER-BEARING ZONE WELL
- INTERMEDIATE WATER-BEARING ZONE WELL
- DEWATERING WELL
- SOIL EXCEEDING MTCA CLEANUP LEVEL
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY
- PILE
- TIEBACK

NOTES:
SOIL DEPTH AND CONCENTRATIONS REPORTED AS:
ELEVATION IN FEET ACCORDING TO MSL |
GRO | DRO | ORO | TOTAL Napthalenes | cPAH TEC
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
ELEVATION SOURCE: BUSH, ROED, & HITCHINGS, INC. (2014)
ELEVATION DATA PRESENTED IN FEET ABOVE MSL
IN THE NORTH AMERICAN VERTICAL DATUM OF 1988

- cPAH TEC = CARCINAGENIC POLYCYCLIC AROMATIC HYDROCARBON TOXIC EQUIVALENT CONCENTRATION
- DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
- GRO = TPH AS GASOLINE-RANGE ORGANICS
- ORO = TPH AS OIL-RANGE ORGANICS
- FFE = APPROXIMATE FINISH FLOOR ELEVATIONS OF GROUND FLOOR OF EXISTING BUILDING
- GSE = APPROXIMATE GROUND SURFACE ELEVATION OF EXISTING LOADING DOCK
- **BOLD** = CONCENTRATIONS THAT EXCEED MTCA CLEANUP LEVELS
- < = ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
- --- = SAMPLE NOT ANALYZED
- MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
- MSL = MEAN SEA LEVEL

N
0 40
SCALE IN FEET

ALL LOCATIONS ARE APPROXIMATE.
FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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Washington
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Oregon
Portland | Bend | Baker City
California
Oakland | Folsom | Irvine

FIGURE 6
SOIL SAMPLE ANALYTICAL RESULTS
BLOCK 38 WEST PROPERTY
SEATTLE, WASHINGTON

FARALLON PN: 397-019

Drawn By: pemahler | Checked By: TC | Date: 12/26/2018 | Disc Reference:

B.

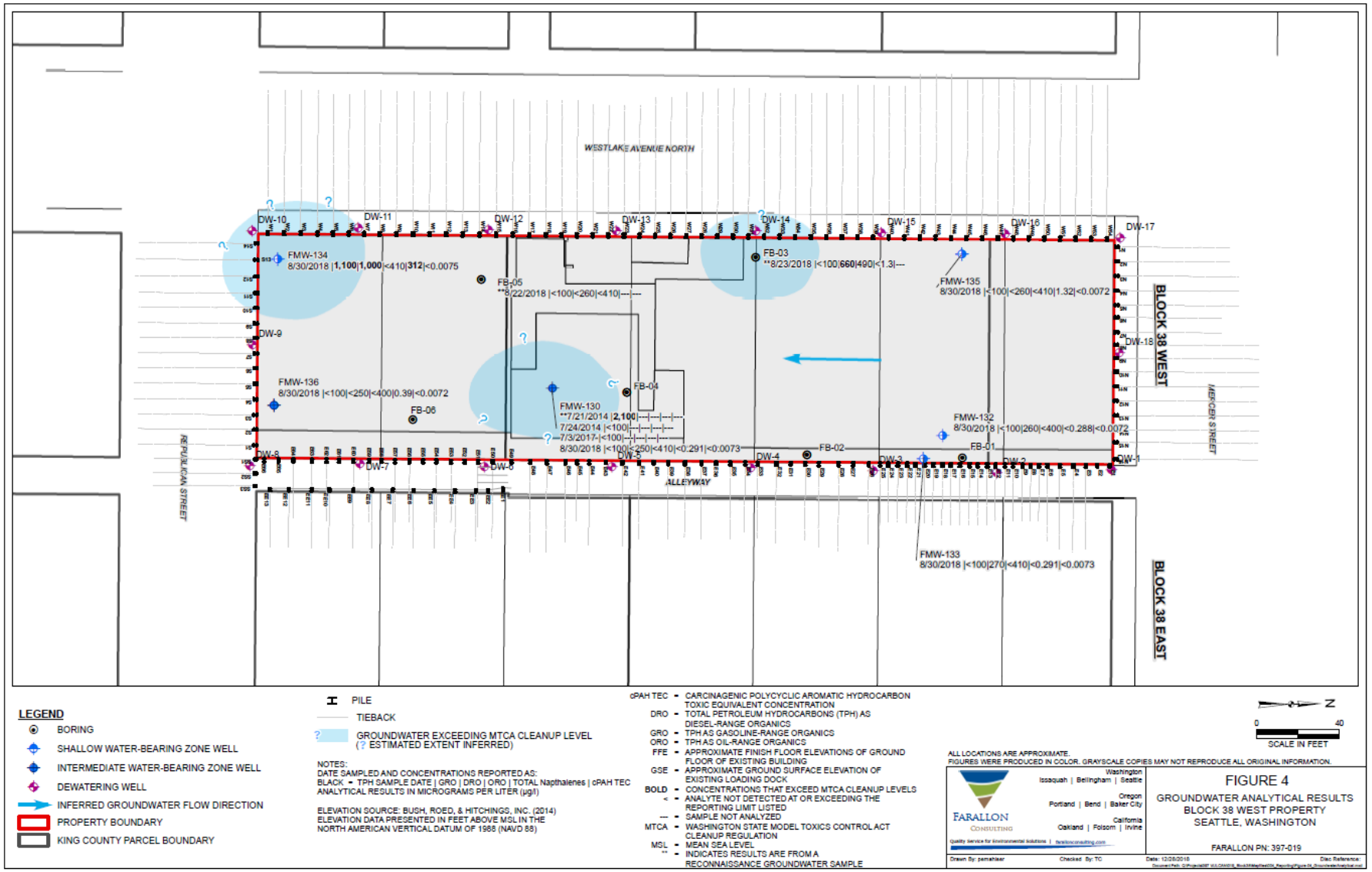

Figure 1. Areas of identified soil (A) and groundwater (B) contamination. The area of soil contamination does not include any potential impacted soil, either on-property or in the alley, from the 2019 side sewer release. For scoring, the area of contamination for the groundwater route was estimated as the area of soil contamination + area of groundwater contamination around FMW-134 + area of groundwater contamination around FB-03 + half the area of groundwater contamination around FWM-130 (adjusted to account for the overlap with area of contaminated soil). The area of contamination for the air route, just including samples with naphthalene above the Method A cleanup level, was estimated as the area of groundwater contamination around FMW-134 + area of groundwater contamination around FMW-130 + one quarter of the area of soil contamination (since naphthalene was only in exceedance at location FMW-132, on the northern end of the area of designated soil contamination). Figures from Farallon 2018 Subsurface Investigation Report.

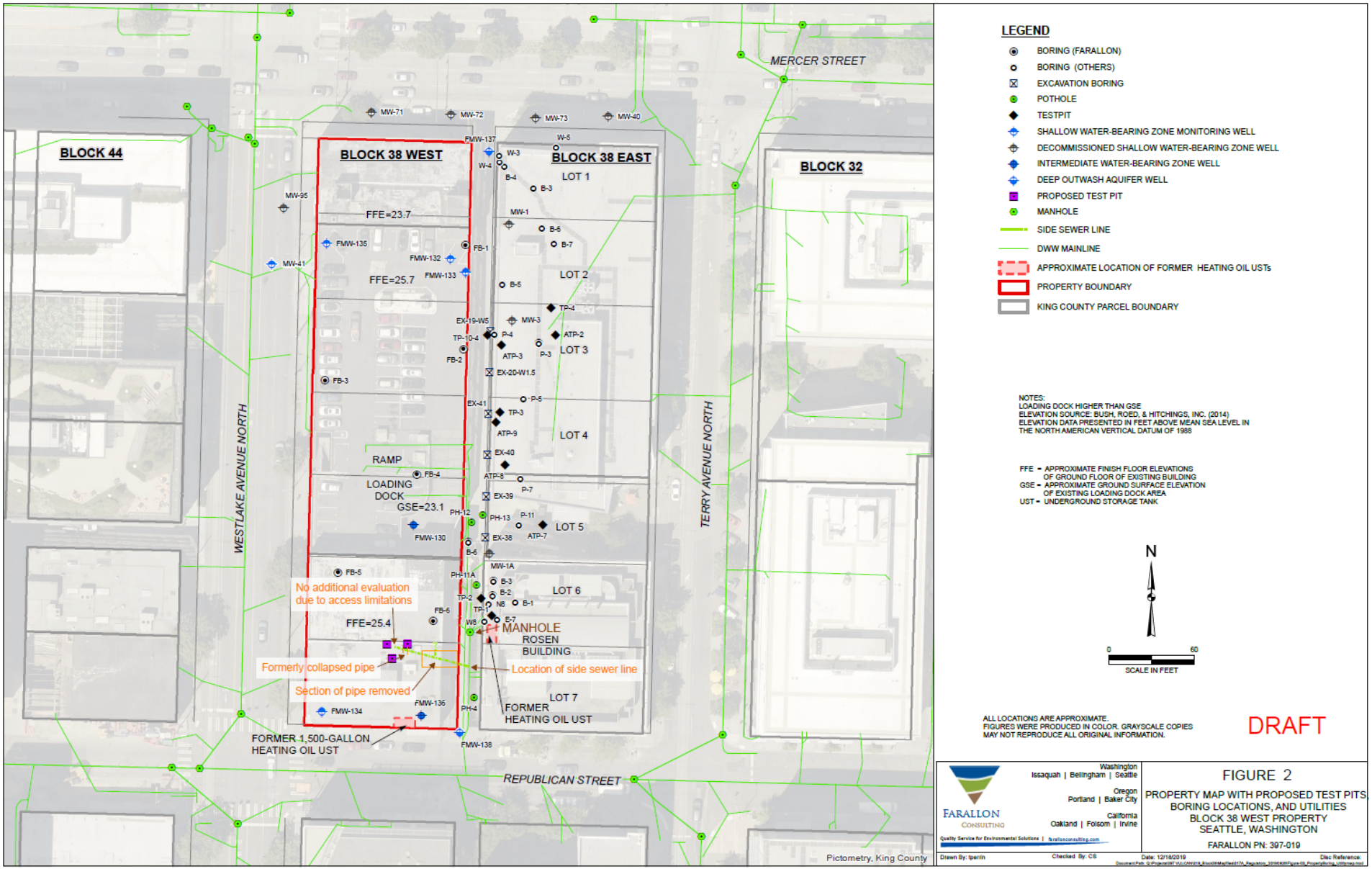

Figure 2. Location of November 2019 side sewer release and December 2019 investigation. Figure from December 2019 Release Notification – Additional Information email.

Worksheet 4
Surface Water Route

CSID: 15008

Site: Block 38 West

Not scored.

Worksheet 5
Air Route

CSID: 15008

Site: Block 38 West

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

No scoring in Section 1.1.

1.2 Human Toxicity

Substance	Amb. Air Stnd. Value (ug/m^3)	Score	Acute Toxicity Value (mg/m^3)	Score	Chronic Toxicity Value (mg/kg/day)	Score	Carcinogenicity Adj. CPFi (risk/mg/kg-day)	Score
naphthalene	2.94E-02	10	--	X	8.57E-04	10	5.95E-02	5

Maximum score: 10

Bonus points:

Human Toxicity Score: 10

Source: WARM Toxicity Database

Range: 1-12

1.3 Mobility

Gaseous Mobility

Substance	Vapor Pressure Value (mm Hg)	Score	Henry's Law Value (atm-m3/ mol)	Score
naphthalene	8.20E-02	3	4.83E-04	3

Maximum score: 3

Source: WARM Toxicity Database

Particulate Mobility

Soil type:

Erodibility factor:

Climatic factor:

Mobility value:

Mobility Score: 3

Source:

Range: 0-4

1.4 Human Toxicity/Mobility

Source: WARM Scoring Manual

Human Tox/Mobil Score: 15

Range: 1-24

1.5 Environmental Toxicity/Mobility

Substance	Acute Value (mg/m^3)	Score
naphthalene	--	X
Maximum score	0	

Source: WARM Toxicity Database

Environmental Toxicity Score: 0

Range: 1-10

Environmental Tox/Mobil Score: n/a

Range: 1-24

1.6 Substance Quantity

Quantity: 10,450 ft^2

Basis: see explanation on Figure 1 above

Source: site reports

Substance Quantity Score: 5

Range: 1-10

2.1 Containment

Description: cover >2' thick with no vapor collection system

Basis: site reports

Containment Score: 5

Range: 0-10

SUBSTANCE PARAMETER CALCULATIONS

Human Health Pathway

SUBh (Human Tox/Mobil + 5) x (Containment +1) + Substance Quantity: 125.0

Environmental Pathway

SUBe (Environ. Tox/Mobil + 5) x (Containment +1) + Substance Quantity: n/a

3.0 TARGETS

3.1 Nearest Population

Description: buildings across Westlake Ave to the west

Distance (ft): <100

Source: iMap

Nearest Population Score: 10

Range: 0-10

3.2 Nearest Sensitive Environment

Description:	Lake Union Park		
Distance (ft):	575	Nearest Sensitive Environment Score:	7
Source:	iMap	Range:	0-7

3.3 Population within One-Half Mile

Number:	6,440	Population within Half Mile Score:	75.0
Source:	MO CDC	Range:	0-75

TARGET PARAMETER CALCULATIONS

Human Health Pathway

TARh: Nearest Population + Population within Half Mile **85.0**

Environmental Pathway

TARe Nearest Sensitive Environment **7.0**

4.0 RELEASE

Evid. of release?	no air sampling data in site file		
Source:	site reports	Release Score (REL):	0.0
		Range:	0 or 5

AIR ROUTE CALCULATIONS

Human Health Pathway

AIRh = (SUBh x 60/329) x {REL + (TARh x 35/85} / 24 **33.2**

Environmental Pathway

AIRe = (SUBe x 60/329) x {REL + (TARe x 35/85} / 24 **n/a**

Range: 0-100

Worksheet 6
Groundwater Route

CSID: 15008

Site: Block 38 West

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human toxicity

	Drink. Wat. Stnd		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
Substance	Value (ug/L)	Score	Value (mg/kg)	Score	Value (mg/kg/day)	Score	Adj. CPFo (risk/mg/kg-day)	Score
naphthalene	--	X	4.90E+02	5	2.00E-02	1	--	X
benzo(a)pyrene	2.00E-01	10	5.00E+01	10	3.00E-04	5	8.00E-01	5

Maximum score: 10

Bonus points:

Human Toxicity Score: 10

Source: WARM Toxicity Database

Range: 1-12

1.2 Mobility

Substance	Solubility Value (mg/L)	Score
naphthalene	3.10E+01	1
benzo(a)pyrene	1.62E-03	0

Maximum value: 1

Mobility Score: 1

Source: WARM Toxicity Database

Range: 1-3

1.3 Substance quantity

Quantity: 2178 yd^3

Basis: 19,600 ft^2 approximate horizontal extent x 1 yd approximate depth; see explanation on Figure 1 above

Source: site reports

Substance Quantity Score: 4

Range: 1-10

2.1 Containment

Description: groundwater is contaminated

Source: site reports

Containment Score: 10

Range: 0-10

SUBSTANCE PARAMETER CALCULATION

SUB = (Human Toxicity + Mobility + 3) x (Containment + 1) + Substance Quantity | 158.0

2.0 MIGRATION POTENTIAL

2.2 Net precipitation

Amount (in.):	17.9	Net Precipitation Score:	2
Source:	NOAA NCEI, ESRI	Range:	0-5

2.3 Subsurface Hydraulic Conductivity

Description:	fill - organics, sandy silt, and silty sand		
Source:	site reports	Hydraulic Conductivity Score:	3
		Range:	1-4

2.4 Vertical Depth to Aquifer

Depth (ft):	groundwater is contaminated	Depth to Aquifer Score:	8
Source:	site reports	Range:	1-8

MIGRATION PARAMETER CALCULATION

MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity | 13.0

3.0 TARGETS

3.1 Aquifer Usage

Description:	not used but usable		
Source:	iMap, WDOH Water System Database	Aquifer Use Score:	2
		Range:	1-10

3.2 Distance to Nearest Drinking Water Well

Distance (ft):	>2 mi	Well Distance Score:	0
Source:	iMap, WDOH Water System Database	Range:	0-5

3.3 Population Served by Drinking Water Wells within Two Miles — Population Served Score: 0.0

No. of people:	0	Range:	0-100
Source:	WDOH Water System Database, Well Log Viewer		

3.4 Area Irrigated by Wells within Two Miles — Area Irrigated Score: 0.0

Area (acres):	0	Range:	0-50
Source:	Water Resources Explorer		

TARGET PARAMETER CALCULATION

2.0

TAR = Aquifer Use + Well Distance + Population Served + Area Irrigated

4.0 RELEASE

Evid. of release? groundwater is contaminated

Release Score (REL): 5.0

Source: site reports

Range: 0 or 5

GROUND WATER ROUTE CALCULATION

31.0

GW = (SUB x 40/208) x {(MIG x 25/17) + REL + (TAR x 30/165)} / 24

Range: 0-100

Washington Ranking Method
Route Scoring Summary and Ranking Calculation

CSID: **15008**

Site: **Block 38 West**

Human Health Route Scores

Pathway	Score	Quintile
Surface water	0.0	
Air	33.2	4
Groundwater	31.0	2

Quintile	Value
High (H)	4
Middle (M)	2
Low (L)	

Human Health Pathway Quintiles - based off August 2019 HSL

Quintile	Surface Water		Air		Groundwater	
1	<=	7.8	<=	8.6	<=	24.1
2	7.9	15.1	8.7	16.3	24.2	33.1
3	15.2	21.3	16.4	25.4	33.2	40.3
4	21.4	29.8	25.5	40.1	40.4	49.3
5	>=	29.9	>=	40.2	>=	49.4

$(H^2 + 2M + L) / 8$

Human Health Priority Bin Score: 2.5

Environmental Route Scores

Pathway	Score	Quintile
Surface water	0.0	
Air	n/a	

Quintile	Value
High (H)	
Low (L)	

Environmental Pathway Quintiles - based off August 2019 HSL

Quintile	Surface Water		Air	
1	<=	11.3	<=	1.2
2	11.4	24.1	1.3	1.5
3	24.2	32.0	1.6	13.8
4	32.1	50.0	13.9	26.5
5	>=	50.1	>=	26.6

$(H^2 + 2L) / 7$

Environmental Priority Bin Score: n/a

FINAL MATRIX RANKING

Human Health Priority	Environmental Priority 5	4	3	2	1	n/a
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
n/a	3	4	5	5	5	NFA

n/a - not applicable

NFA - no further action

Site Rank: 3