

# PARTNER

## SOIL MANAGEMENT PLAN

### **Maninder Singh - Expansion**

8701 Greenwood Ave North  
Seattle, Washington 98103

March 9, 2021

Partner Project Number: 20-293062.2

Prepared for:

### **8701 Greenwood LLC**

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## 1.0 INTRODUCTION

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Partner Engineering and Science, Inc. (Partner) was retained by 8701 Greenwood LLC to prepare the following Soil Management Plan (SMP) for the property located at 8701 Greenwood Ave North, Seattle, King County, Washington.

### 1.1 Purpose

The purpose of the SMP is to outline protocol for ensuring the proper handling and/or disposal of impacted soil and/or subsurface features of concern that may be encountered during site redevelopment activities. The SMP was prepared to minimize potential exposure to impacted soil by construction, facility, and maintenance personnel; tenants; contractors and vendors; and the general public. This SMP only applies to the soil and/or subsurface features that may be encountered at the subject property.

### 1.1 Limitations

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

### 1.2 User Reliance

Partner was engaged by 8701 Greenwood LLC (the Addressee), or their authorized representative, to perform this management plan. The engagement agreement specifically states the scope and purpose of the investigation, as well as the contractual obligations and limitations of both parties. This report and the information therein, are for the exclusive use of the Addressee. This report has no other purpose and may not be relied upon, or used, by any other person or entity without the written consent of Partner. Third parties that obtain this report, or the information therein, shall have no rights of recourse or recovery against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, the Addressee and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such use. Unauthorized use of this report shall constitute acceptance of, and commitment to, these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted Partner's standard Terms and Conditions, a copy of which can be found at <http://www.partneresi.com/terms-and-conditions.php>.

## 2.0 SITE BACKGROUND

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### 2.1 Site Description

The subject property consists of one parcel of land comprising 0.75 acre located on the northwest corner of the Greenwood Avenue North and North 87<sup>th</sup> Street intersection within a mixed commercial and residential area of Seattle, King County, Washington. The subject property is currently developed with one 14,707-square foot building, which was constructed in 1997 and is currently vacant. In addition to the structure, the subject property is improved with asphalt-paved parking areas and associated landscaping.

The subject property is bound by residential properties to the north, commercial properties to the east across Greenwood Avenue North, residential properties to the south across North 87<sup>th</sup> Street, and residential properties to the west across the Alley. Refer to Figure 1 for a site vicinity map showing site features and surrounding properties.

### 2.2 Site History

Partner completed a *Phase I Environmental Site Assessment Report* (Phase I) for the subject property, dated September 29, 2020, on behalf of Live Oak Bank and The U.S. Small Business Administration. According to the reviewed historical sources, the subject property was formerly undeveloped as early as 1894; developed with commercial and residential buildings between 1917 and circa 1994 including various gasoline stations on the southern portion of the property between 1940 and 1994; and developed with the current structure in 1997. Tenants on the subject property include residential occupants (1917-1967); Olmstead Realty (1920-1935); Owl Drug Co (1925-1930); medical and dental building, electric repair shop, laundry (1930); Texaco (1951-1994); Vanity Cleaners (1951-1955); Tea Garden, Slate Insulating Co (1951); Greenwood Cycle (1955-1960); Kellogg R E Co (1955); Forty Fifth Democratic Headquarters, Allied Crafts furniture manufacturers (1960); Bys All Beef Burgers restaurant (1964-1970); Greenwood Electric Motors (1964-1994); Short Stop Drive Inn (1975); Greenwood Burger Co (1980-1994); and Walgreens (1996-2009).

The following recognized environmental conditions (RECs) were identified in the Phase I:

- The subject property was previously several individual lots which included 8715 Greenwood Avenue. Vanity Cleaners occupied this property as a cleaners and dyers between 1951 and 1955. Dry cleaning operations typically use chlorinated solvents, particularly tetrachloroethylene (PCE), during the dry-cleaning process. These solvents, even when properly stored and disposed of, can be released from these facilities in small, frequent releases through floor drains, cracked concrete, and sewer systems. Chlorinated solvents are highly mobile chemicals that can easily accumulate in the soil and migrate to the groundwater beneath a facility. Based on the lack of previous subsurface investigations in this area, and the nature of dry-cleaning chemicals, the former presence of the dry-cleaning business on the subject property is considered a REC.
- The adjacent property identified as SMI Inc. Trust at 8733 North Greenwood Avenue, is located adjacent to the north of the subject property and hydrologically cross- to up-gradient. According to Environmental Data Resources (EDR), this property is listed on several databases including the Hazardous Site List (HSL) and Confirmed and Suspected Contaminated Sites List (CSCSL). This property has a confirmed release of conventional contaminants, organics and metals which have impacted soil. In addition, it is suspected that halogenated organics and petroleum products have also impacted the property. The site status is currently awaiting cleanup. In addition, two documented spills of petroleum products occurred in 1999 and 2011. Based on the close proximity

to the subject property, active release file, and inferred groundwater flow direction, this site is expected to represent a REC.

The following controlled recognized environmental condition (CREC) was identified in the Phase I:

- The southern portion of the subject property was previously occupied by a gasoline and service station from at least 1940 to 1994. According to previous reports reviewed, the initial gasoline station was equipped with one 4,000-gallon; one 3,500-gallon; and one 2,000-gallon fuel storage tanks; and one 550-gallon waste oil underground storage tanks (USTs). These USTs were located on the eastern portion of the property. In 1967, Texaco purchased the property and constructed a new service station. The new service station included a two-bay garage/sales office building and two pump islands and two 10,000-gallon gasoline USTs; one 550-gallon waste oil UST; and one 1,000-gallon fuel oil UST. A 4,000-gallon gasoline UST was added in 1971. All USTs were single-walled carbon steel. The entire underground system was updated in 1986 and the steel tanks were removed and replaced with four 10,000-gallon single-walled fiberglass tanks including a diesel UST. The product lines, waste oil, and fuel oil USTs were replaced with fiberglass lines and tanks. The new tanks and lines were placed in approximately the same locations as the previous tanks and piping.

An initial site investigation was conducted in 1991 and consisted of a total of seven borings being drilled on site with five of them converted to monitoring wells. Borings were located around the USTs, pump islands, waste oil UST, and fuel oil UST. Borings were advanced to depths between 11 and 21 feet below ground surface (bgs). Groundwater was encountered between 2 and 5 feet bgs. A total of 11 soil samples were analyzed for hydrocarbons (gasoline, diesel, and oil), benzene, toluene, ethylbenzene, and xylenes (BTEX), metals, and/or halogenated volatiles. Total petroleum hydrocarbon (TPH) concentrations ranged from non-detect to 979 parts per million (ppm) with the greatest concentrations around the waste oil and fuel oil USTs. Detections of BTEX in soil samples were noted near a pump island and south of the existing UST basin. Three of the five monitoring wells had elevated concentrations of BTEX above the Model Toxics Control Act (MTCA) Method A Cleanup Levels for groundwater.

In 1994, all USTs and associated product lines were removed from the subject property. The UST decommissioning included the discovery of two 1,250-gallon concrete sumps/separators during the over excavation of petroleum hydrocarbon impacted soil south of the service station building. Approximately 600 cubic yards of petroleum impacted soils were excavated from the tank basins and dispenser islands and stockpiled for offsite disposal. Soil samples were collected and analyzed for TPH and BTEX. Soil samples collected from the gasoline, diesel, and heating oil USTs, pump island, and hoist areas following over excavation contained analyte concentrations below MTCA Method A Cleanup Levels. However, soil samples collected from the excavation sidewalls and from the peat layer of the waste oil/sump area contained analyte concentrations above the MTCA Method A Cleanup Levels. Groundwater samples were also analyzed for TPH and BTEX. Three groundwater samples had elevated concentrations of TPH-gasoline (G), benzene, and total xylenes above the MTCA Method A Cleanup Levels.

A combined air sparge/vapor extraction system was installed on the property in the area of the former gasoline and diesel UST excavation between March and December 1994. The groundwater treatment system operated between December 1994 and June 1995 recovering approximately 45.5 pounds of volatile hydrocarbons. The groundwater recovery system removed and discharged approximately 649,600 gallons of groundwater during this period. Groundwater sampling was conducted three times in 1995 and laboratory results indicated a general decline in dissolved concentrations from earlier levels. Laboratory results from the most recent groundwater sampling event indicated that the concentrations were below the MTCA Method A Cleanup Levels. Based upon the sampling data,

Washington Department of Ecology (Ecology) issued a closure letter for the subject property in July 1996. The closure was contingent on the recording of a restrictive covenant with the property deed. The restrictive covenant documents some residual impacted soil remains on the property. It also includes additional requirements for groundwater monitoring and for handling additional impacted soil if discovered during subsequent redevelopment of the property. Based on regulatory oversight and closure, removal of USTs, remedial activities, analytical results, and the property use restrictions currently in-place, the former gasoline station and USTs are considered a CREC.

Subsequent to the Phase I, Partner completed a Phase II Subsurface Investigation (Phase II) as documented in Partner's *Phase II Subsurface Investigation Report*, dated March 1, 2021, prepared on behalf of 8701 Greenwood LLC.

Partner conducted a Phase II Subsurface Investigation at the subject property to evaluate the potential impact of petroleum hydrocarbons and volatile organic compounds (VOCs) to soil gas, soil, and/or groundwater as a consequence of a release or releases from the former dry cleaning facility, former gasoline service station, and documented north-adjacent release. The scope of the Phase II Subsurface Investigation included five soil borings and three sub-slab soil gas probes. Five soil samples and five groundwater samples were analyzed for gasoline, diesel, and residual range organics (GRO, DRO, and RRO, respectively) and VOCs, and seven soil gas and sub-slab soil gas samples were analyzed for VOCs.

GRO was detected in soil sample B4-5 at a concentration exceeding the cleanup level. None of the remaining detections of GRO, DRO, and RRO exceeded applicable cleanup levels.

GRO was detected in groundwater sample B2-GW at a concentration exceeding the cleanup level. DRO and RRO were detected in groundwater sample B4-GW at concentrations exceeding the cleanup levels. RRO was detected in groundwater sample B5-GW at a concentration exceeding the cleanup level. None of the remaining detections of GRO, DRO, or RRO exceeded the applicable cleanup levels.

Benzene was detected in each of the five analyzed groundwater samples at concentrations exceeding applicable cleanup levels. Vinyl chloride was detected in one of the five analyzed groundwater samples (B2-GW) at a concentration exceeding applicable cleanup levels. None of the remaining detected VOC concentrations exceeded applicable cleanup levels.

Benzene was detected in six of the seven analyzed soil gas samples (B2-SG through B5-SG, SS1 and SS2) at concentrations exceeding applicable screening levels. m&p-Xylene was detected in two of the seven analyzed soil gas samples (B2-SG and B3-SG) at a concentration exceeding applicable cleanup levels. None of the remaining detected VOC concentrations exceeded applicable cleanup levels.

GRO, DRO, RRO, benzene, m&p-xylene, and vinyl chloride concentrations observed in soil, soil gas, and groundwater continue to negatively impact the subject property at concentrations exceeding applicable screening levels. It appears that impacts from the former gasoline service station and north adjacent release case are commingled and spread throughout the subject property. Impacts from the former gasoline service station appear to be attenuating since the last investigation with overall decreasing concentrations. It does not appear that the former dry-cleaning facility has impacted the subject property.

Based on the Subsurface Investigation, there is evidence of continued impacts of GRO, DRO, RRO, benzene, m&p-xylene, and vinyl chloride to the subsurface of the subject property and Partner recommends further investigation and/or remediation with respect to the former gasoline service station and documented north-

adjacent release at this time. Partner recommends no further investigation with respect to the former dry-cleaning facility at this time.

### 3.0 GEOLOGY AND HYDROGEOLOGY

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Review of the United States Geological Survey (USGS) *Seattle North, Washington* Quadrangle topographic map, indicates the subject property is situated approximately 260 feet above mean sea level.

According to the State of Washington Department of Natural Resources (WDNR), the subject property is situated within the Puget Lowland physiographic province of the State of Washington. The Puget Lowland physiographic province consists of a broad, low-lying region that is situated between the Cascade Range to the east, and the Olympic Mountains and Willapa Hills to the west. The Puget Lowland physiographic province owes its present-day geomorphic features to the last continental glacier that covered the region.

Based on borings advanced during the Phase II, the underlying subsurface consists predominantly of sandy silt with gravel (ML) silt (ML), organic peat (P), and silty sand (SM) from the ground surface to approximately 15 feet below ground surface (bgs). Groundwater was encountered between 6 and 11 feet bgs; however, the groundwater rose to 2 to 3 feet upon boring completion.



## 4.0 CHEMICALS OF CONCERN

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Based on the known on-site impacts, soil chemicals of concern (COCs) at the subject property include GRO, DRO, RRO, benzene, m&p-xylene, and vinyl chloride. Tables 1 through 6 list the COCs detected in soil, groundwater, and soil gas during the Phase II.

## **5.0 SOIL MANAGEMENT**

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This section outlines the protocol for the proper handling and/or disposal of impacted soil that may be encountered during site grading and/or other redevelopment activities. Partner understands that the Client intends to redevelop the subject property as a day care facility.

### **5.1 Applicability**

The SMP applies to soil-disturbing activities associated with the site redevelopment, including excavation, grading, trenching, utility installation, and/or other activities that could potentially generate impacted soil. Field personnel directly involved with soil-disturbing activities should be familiar with the contents of the SMP.

Implementation of the SMP is intended to coincide with the start of site grading activities.

### **5.2 Duration**

The SMP shall remain in effect from the start of grading activities and for the duration of the site redevelopment involving soil-disturbing activities.

### **5.3 Key Roles and Responsibilities**

The following is a list of key roles involved with the SMP and the respective general responsibilities:

- Client (8701 Greenwood LLC) – Responsible for selecting and engaging the main contractor(s) and environmental consultants(s) involved with the subject property redevelopment and/or implementation of the SMP;
- General Contractor (GC) – Responsible for overseeing the subject property grading/redevelopment/construction activities, managing the associated subcontractors (including the dewatering subcontractor, if necessary), and the initial soil screening (refer to Section 5.9 for additional details); and,
- Environmental Consultant (EC) – Responsible for implementing the SMP.

### **5.4 Work Area Control**

Control of the work area (e.g., perimeter fencing) will be the responsibility of the GC. In general, the work area should be secured as to limit access only to the personnel qualified and authorized to be on-site.

### **5.5 Health and Safety**

EC will prepare a separate site-specific health and safety plan (HASP) that will be implemented in conjunction with the SMP when handling soil with suspected or confirmed COC impacts. At a minimum, the HASP will identify the potential COCs and/or other hazards of concern and establish guidelines and/or procedures for controlling/minimizing exposures to potential COCs/hazards, including the appropriate level(s) of personal protective equipment (PPE). The GC will be responsible for non-COC-related health and safety concerns associated with the excavation (e.g., excavation stability, stockpile placement, heavy equipment operation, etc.).

## **5.6 Permitting**

If permits are required for specific tasks (e.g. stockpiling, disposal, onsite re-use), the GC will facilitate permits in accordance with applicable State and/or Federal regulations.

## **5.7 Soil Management**

Prior to grading/redevelopment/construction activities, site representatives should meet to review and discuss the contents of the SMP, roles and responsibilities, and the grading/redevelopment schedule. In the event suspected impacted soil is encountered, grading/excavation activities should cease, and staff should immediately contact the EC, at which point the EC should arrange for oversight activities. The EC will then conduct daily oversight and monitoring during grading and/or excavation until impacted soil has been sufficiently removed. Waste characterization samples will be collected and submitted for laboratory analysis and impacted soil will be transported under proper waste manifest documentation to an approved landfill or facility. Hazardous waste must be transported by a hauler licensed to transport hazardous waste.

## **5.8 Undocumented Subsurface Features of Concern**

The GC should cordon off and halt construction activities in the immediate area(s) of undocumented subsurface features of potential environmental concern [e.g., underground storage tanks (USTs), clarifiers, buried drums, residual impacted soil] if encountered during the course of ground cover removal and/or demolition, Site grading, and/or other earthmoving activities. The GC must promptly notify the Client and EC. The following general approach will be applied by the EC to address such subsurface features:

- 1) Notify the relevant regulatory oversight agency or agencies involved with the subsurface feature decommissioning / residual impacted soil and file the necessary permit(s), when applicable;
- 2) Decontamination and decommission the subsurface feature(s) via removal (if practical) in accordance with generally accepted industry practices and the requirements of the filed permit(s) (where applicable);
- 3) Collect and analyze soil samples to evaluate potential chemical impacts to the subsurface due to a historical release or releases from subsurface feature(s), and assess the lateral and vertical extent of residual impacted soil; and
- 4) Document the decommissioning activities and soil handling / removal activities and findings in a summary report.

EC will provide specific protocols to address encountered subsurface features on a case-by-case basis based on the Site conditions and the nature of the subsurface features.

## **5.9 Post Excavation/Confirmation Sampling**

In the event subsurface features of concern or impacted soil are encountered, the EC will collect an appropriate amount of confirmation samples for laboratory analysis following removal to ensure impacted soils have been removed to acceptable standards. As previously mentioned, waste characterization samples will also be collected from the excavated soil.

## **6.0 GROUNDWATER MANAGEMENT**

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Based on groundwater depth of between 1 and 11 feet below the ground surface and the identified GRO, DRO, RRO, benzene, and vinyl chloride impacts. The Groundwater Management section of this SMP has been developed to provide protocol for managing potentially impacted groundwater beneath the Site.

### **6.1 Presence of Groundwater**

Groundwater is anticipated to be encountered between 1 and 11 feet bgs beneath the Site, which may be encountered during development activities at the Site.

### **6.2 Protocol for Managing Potentially Impacted Groundwater**

Potentially impacted groundwater will require special handling if dewatering, removal, or extraction of groundwater is necessary during development activities. Special handling procedures for groundwater are presented below.

#### **6.2.1 Assessing Potential Groundwater Impacts**

If groundwater is removed / extracted during development activities grab groundwater samples shall be collected to assess the presence of gasoline related contaminant impacts. Groundwater samples will be collected and analyzed for COCs as deemed necessary and will be submitted to a state-certified laboratory for 24-hour turn around analysis.

Groundwater analytical results shall be submitted to an appropriate waste disposal facility for waste characterization.

##### **6.2.1.1 Storage of Contaminant Impacted Groundwater**

If contaminant impacts to groundwater that is being removed/extracted from beneath the Site are identified, results shall be submitted to an appropriate disposal facility for verification of waste characterization and disposal procedures. Contaminant impacted groundwater shall be temporarily stored on-Site in sealed containers (i.e., department of transportation approved drums, or if needed, larger storage totes). Impacted groundwater storage containers shall be sealed, labeled with appropriate waste characterization results and date of storage, pending disposal from the Site.

##### **6.2.2 Disposal of Contaminant Impacted Groundwater**

Contaminant impacted groundwater that is removed/extracted from beneath the Site as part of development activities shall be disposed of at an appropriate certified disposal facility under proper waste characterization protocol and including waste manifest documentation.

## 7.0 SUMMARY AND CONCLUSIONS

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The EC will prepare a summary report for submittal to the Client. At a minimum, the report will include a summary of field activities, laboratory analysis reports, and off-site disposal documentation (if soil was exported, excluding unrestricted soil). The Consultant will also be responsible for complying with regulatory agency reporting requirements if VOC-impacted soil was encountered.

## SIGNATURES OF PARTICIPATING PROFESSIONAL

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Thank you for the opportunity to be of service. If you have questions regarding this SMP, please contact Marshall Standclift at 801-783-2734.

Sincerely,

*Brian Godbois*

Brian T. Godbois  
Project Manager



*Marshall Standclift*

Marshall Standclift  
National Client Manager

*Martin Acaster*

Martin Acaster, LG  
Senior Geologist

## TABLES

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Table 1: Summary of Investigation Scope  
8701 Greenwood Avenue North  
Seattle, Washington 98103  
Partner Project Number 20-293062.2  
February 18, 2021

Boring Identification	Location	Terminal Depth (feet bgs)	Matrix Sampled	Sampling Depths* (feet bgs)	Target Analytes
<b>B1</b>	Central Portion of Proposed Play Area 3	10	Soil	<u>2</u> , 5, 7.5, 10	GRO/DRO/RRO, VOCs
			Groundwater	<b>0-10</b>	GRO/DRO/RRO, VOCs
<b>B2</b>	Central Portion of Proposed Play Area 2	15	Soil	<u>2</u> , 5, 10	GRO/DRO/RRO, VOCs
			Soil Gas	<u>1</u>	VOCs
			Groundwater	<b>5-10</b>	GRO/DRO/RRO, VOCs
<b>B3</b>	Central Portion of Former Dry Cleaning Facility	15	Soil	2, <u>5</u> , 10	GRO/DRO/RRO, VOCs
			Soil Gas	<u>2</u>	VOCs
			Groundwater	<b>0-10</b>	GRO/DRO/RRO, VOCs
<b>B4</b>	Central Portion of North Property Boundary	10	Soil	2, <u>5</u>	GRO/DRO/RRO, VOCs
			Soil Gas	<u>1</u>	VOCs
			Groundwater	<b>0-10</b>	GRO/DRO/RRO, VOCs
<b>B5</b>	Central Portion of Exterior Area of Suspected Impacted Soil	10	Soil	2, <u>5</u> , 10	GRO/DRO/RRO, VOCs
			Soil Gas	<u>2</u>	VOCs
			Groundwater	<b>0-10</b>	GRO/DRO/RRO, VOCs
<b>SS1</b>	South Portion of Interior Area of Suspected Impacted Soil	0.5	Sub-Slab Soil Gas	<u>0.5</u>	VOCs
<b>SS2</b>	Central Interior Area of Subject Property Building	0.5	Sub-Slab Soil Gas	<u>0.5</u>	VOCs
<b>SS3</b>	Northeast Interior Area of Subject Property Building	0.5	Sub-Slab Soil Gas	<u>0.5</u>	VOCs

Notes:

\*Depths in **bold** analyzed for gasoline range organics (GRO) in accordance with Washington Department of Ecology (Ecology) Method NWTPH-Gx, for diesel-range organics (DRO) and residual-range organics (RRO) in accordance with Ecology Method NWTPH-Dx/Extended. Underlined depths analyzed for volatile organic compounds (VOCs) in accordance with Environmental Protection Agency (EPA) Method 8260D (soil and groundwater) or TO-15 (soil gas).

bgs = below ground surface



Table 2: Soil Sample GRO/DRO/RRO Laboratory Results  
 8701 Greenwood Avenue North  
 Seattle, Washington 98103  
 Partner Project Number 20-293062.2  
 February 18, 2021

Method	GRO/DRO/RRO via NWTPH-Gx/Dx/Extended					
Units	(mg/kg)					
Analyte	MTCA Method A ULU	B1-2	B2-2	B3-5	B4-5	B5-5
<b>GRO</b>	<b>30</b>	<b>4.33</b>	1.92 J	1.94 J	<b>551</b>	2.53 J
<b>DRO</b>	<b>2,000</b>	<b>5.32</b>	<b>5.72</b>	<b>6.38</b>	<b>1,160</b>	<b>17.8</b>
<b>RRO</b>	<b>2,000</b>	6.54 J	<b>26.2</b>	<b>19.3</b>	<b>579</b>	<b>87.2</b>

Notes:

GRO = gasoline-range organics (Gx)

DRO = diesel-range organics (Dx)

RRO = residual-range organics (Extended)

NWTPH = Northwest Total Petroleum Hydrocarbons

mg/kg = milligrams per kilogram

MTCA Method A = Soil cleanup levels for unrestricted land use (ULU) (Washington State Department of Ecology [Ecology], Model Toxics Control Act [MTCA], 2020)

Values in **bold** exceed laboratory Reporting Detection Limits (RDLs)

J = trace detection (less than the laboratory RDL, but more than the Method Detection Limit (MDL) and is an estimated value)

Yellow highlighted values exceed applicable cleanup level

Table 3: Soil Sample VOCs Laboratory Results  
8701 Greenwood Avenue North  
Seattle, Washington 98103  
Partner Project Number 20-293062.2  
February 18, 2021

EPA Method	VOCs via 8260D							
Units	(mg/kg)							
Analyte	MTCA Method A ULU	MTCA Method B Noncancer	MTCA Method B Cancer	B1-2	B2-2	B3-5	B4-5	B5-5
<b>Benzene</b>	<b>0.03</b>	<b>320</b>	<b>18</b>	<0.00163	<0.00158	<0.00196	<0.0250	0.00143 J
<b>Ethylbenzene</b>	<b>6.0</b>	<b>8,000</b>	<b>NCL</b>	0.00216 J	0.00213 J	0.00387 J	0.0318 J	0.0024 J
<b>Isopropylbenzene</b>	<b>NCL</b>	<b>8,000</b>	<b>NCL</b>	<0.00407	<0.00394	<0.00490	0.02 J	<0.00421
<b>2-Butanone (MEK)</b>	<b>NCL</b>	<b>48,000</b>	<b>NCL</b>	<0.163	<0.158	0.126 J	<2.50	<0.168
<b>Naphthalene</b>	<b>5.0</b>	<b>1,600</b>	<b>NCL</b>	0.0138 J	<0.0197	<0.0246	0.212 J	<0.0211
<b>n-Propylbenzene</b>	<b>NCL</b>	<b>8,000</b>	<b>NCL</b>	<0.00813	<0.00788	<0.00980	0.0262 J	<0.00841
<b>Toluene</b>	<b>7.0</b>	<b>6,400</b>	<b>NCL</b>	0.00374 J	0.00603 J	0.00798 J	0.104 J	0.00606 J
<b>1,2,4-TMB</b>	<b>NCL</b>	<b>800</b>	<b>NCL</b>	0.00635 J	0.00587 J	0.00657 J	0.112 J	0.00606 J
<b>1,2,3-TMB</b>	<b>NCL</b>	<b>800</b>	<b>NCL</b>	0.00365 J	<0.00788	<0.00980	<0.125	<0.00841
<b>Total Xylenes</b>	<b>9.0</b>	<b>16,000</b>	<b>NCL</b>	0.0101 J	<b>0.0133</b>	<b>0.0135</b>	<b>0.218</b>	<b>0.0118</b>
<b>Other VOCs</b>	<b>Varies</b>	<b>Varies</b>	<b>Varies</b>	ND	ND	ND	ND	ND

Notes:

VOCs = volatile organic compounds

EPA = United States Environmental Protection Agency

mg/kg = milligrams per kilogram

MTCA Method A = Soil cleanup levels for unrestricted land use (Washington State Department of Ecology [Ecology], Model Toxics Control Act [MTCA], 2020)

MTCA Method B = Soil cleanup levels when a Method A cleanup level does not exist (Ecology, MTCA, 2020)

TMB = trimethylbenzene

< = not detected above indicated laboratory Reporting Detection Limit (RDL)

J = trace detection (less than the laboratory RDL, but more than the Method Detection Limit (MDL) and is an estimated value)

ND = not detected above laboratory MDLs

NCL = no cleanup level

Values in **bold** exceed laboratory RLs

Table 4: Groundwater Sample GRO/DRO/RRO Laboratory Results  
 8701 Greenwood Avenue North  
 Seattle, Washington 98103  
 Partner Project Number 20-293062.2  
 February 18, 2021

Method	GRO/DRO/RRO via NWTPH-Gx/Dx/Extended					
Units	(µg/L)					
Analyte	MTCA Method A ULU	B1-GW	B2-GW	B3-GW	B4-GW	B5-GW
GRO	800	290 B	1,630	454 B	444 B	226 B
DRO	500	334	265	159 J	1650 J	155 J
RRO	500	380	329	150 J	7,180	929

Notes:

GRO = gasoline-range organics (Gx)

DRO = diesel-range organics (Dx)

RRO = residual-range organics (Extended)

NWTPH = Northwest Total Petroleum Hydrocarbon

µg/L = micrograms per liter

ULU = unrestricted land use

MTCA Method A = groundwater cleanup levels for ULU (Washington State Department of Ecology [Ecology], Model Toxics Control Act [MTCA], 2020)

B = the same analyte is found in the associated blank

Values in **bold** exceed laboratory Reporting Detection Limit (RDL)

J = trace detection (less than the laboratory RDL, but more than the Method Detection Limit (MDL) and is an estimated value)

Yellow highlighted values exceed applicable cleanup level

Table 5: Groundwater Sample VOCs Laboratory Results  
8701 Greenwood Avenue North  
Seattle, Washington 98103  
Partner Project Number 20-293062.2  
February 18, 2021

EPA Method	VOCs via 8260D							
Units	(µg/L)							
Analyte	MTCA Method A ULU	MTCA Method B Noncancer	MTCA Method B Cancer	B1-GW	B2-GW	B3-GW	B4-GW	B5-GW
Acetone	NCL	7,200	NCL	6.95	16.7	9.21	4.54	4.16
Benzene	5.0	32	0.8	0.891	8.99	2.03	1.56	0.914
Chlorobenzene	NCL	160	NCL	0.054 J	<0.100	<0.100	<0.100	<0.100
1,4-Dichlorobenzene	NCL	560	8.1	0.101 J	<0.200	<0.200	<0.200	<0.200
cis-1,2-Dichlorobenzene	NCL	16	NCL	<0.100	0.25 J	<0.100	<0.100	<0.100
Ethylbenzene	700	800	NCL	8.61	60	16.5	13.9	9.49
Isopropylbenzene	NCL	800	NCL	0.203	1.25	0.335	0.343	0.211
2-Butanone (MEK)	NCL	4,800	NCL	<1.00	2.57 B	1.11 B	<1.00	<1.00
Methyl Tert-Butyl Ether	20	NCL	24	<0.0400	<0.0400	<0.0400	<0.0400	0.061
Naphthalene	160	160	NCL	0.313 J	2.39	0.839	46.5	3.69
n-Propylbenzene	NCL	800	NCL	1.31	7.61	2.12	1.98	1.48
Styrene	NCL	1,600	NCL	<0.500	<0.500	<0.500	0.253 J	<0.500
Toluene	1,000	640	NCL	20.9	66.8	43.6	34	22.6
1,2,4-TMB	NCL	80	NCL	9.12	55.5	15.5	14.3	6.57
1,2,3-TMB	NCL	80	NCL	1.46	10.1	2.59	2.38	1.12
Vinyl Chloride	0.2	24	0.029	<0.100	0.33 J	<0.100	<0.100	<0.100
1,3,5-TMB	NCL	80	NCL	2.47	13.8	3.7	3.69	1.33
Total Xylenes	1,000	1,600	NCL	60.6	194	113	93.7	56.7
Carbon Disulfide	NCL	800	NCL	<0.500	<0.500	0.189 J	<0.500	<0.500
n-Hexane	NCL	480	NCL	0.09 J	0.18 J	0.116 J	<0.200	0.137 J
Other VOCs	Varies	Varies	Varies	ND	ND	ND	ND	ND

Notes:

VOCs = volatile organic compounds

EPA = United States Environmental Protection Agency

µg/L = micrograms per liter

MTCA Method A = groundwater cleanup levels for unrestricted land use (ULU) (Washington State Department of Ecology [Ecology], Model Toxics Control Act [MTCA],

MTCA Method B = Soil cleanup levels when a Method A cleanup level does not exist (Ecology, MTCA, 2020)

PCE = tetrachloroethene

TMB = trimethylbenzene

NCL = no cleanup level

< = not detected above indicated laboratory Reporting Detection Limit (RDL)

J = detection is less than the laboratory RDL, but more than the Method Detection Limit (MDL) and is an estimated value

B = the same analyte is found in the associated blank

ND = not detected above laboratory RDLs

Values in **bold** exceed laboratory RDLs

Yellow highlighted values exceed MTCA Method B Cancer screening levels

Orange highlighted values exceed MTCA Method B Cancer and Noncancer screening levels, and Method A screening levels

Table 6: Soil Gas Sample VOCs Laboratory Results  
8701 Greenwood Avenue North  
Seattle, Washington 98103  
Partner Project Number 20-293062.2  
February 18, 2021

EPA Method Units	VOCs via TO-15 (µg/m <sup>3</sup> )								
	MTCA Method B Noncancer	MTCA Method B Cancer	B2-SG	B3-SG	B4-SG	B5-SG	SS1	SS2	SS3
Acetone	NSL	NSL	29	32.6	18.3	27.1	471	190	182
Benzene	460	11	425	770	164	98.1	22	12.7	5.69
Bromodichloromethane	NSL	2.3	2.95	<1.34	4.7	<1.34	<1.34	<1.34	<1.34
Carbon Disulfide	11,000	NSL	4.51	<0.622	<0.622	13.3	0.697	<0.622	1.15
Chloromethane	1,400	NSL	1.9	3.37	98.9	2.11	0.485	<0.413	0.448
Cyclohexane	NSL	NSL	50.3	228	185	83.7	6.65	11	3.24
Chlorodibromomethane	NSL	NSL	<1.70	2.95	2.81	<1.70	<1.70	<1.70	<1.70
1,4-Dioxane	NSL	NSL	<0.721	<0.721	<0.721	<0.721	0.843	<0.721	1.35
Ethanol	NSL	NSL	58.1	129	25.1	20.7	215	354	243
Ethylbenzene	15,000	NSL	902	949	219	114	1.24	4.68	1.41
4-Ethyltoluene	NSL	NSL	358	246	77.1	46.8	1.56	1.09	<0.982
Trichlorofluoromethane	11,000	NSL	1.56	1.55	1.43	1.48	3.37	5.84	2.69
Dichlorodifluoromethane	1,500	NSL	2.09	2.57	2.2	2.46	2.65	2.73	2.73
Heptane	NSL	NSL	285	822	328	84.3	8.34	10.6	2.74
N-Hexane	11,000	NSL	225	532	740	252	17.9	22.1	5.92
Isopropylbenzene	6,100	NSL	22.2	38.8	<0.983	<0.983	<0.983	<0.983	<0.983
Methylene Chloride	9,100	NSL	1.85	<0.694	<0.694	<0.694	<0.694	<0.694	<0.694
2-Butanone (MEK)	76,000	NSL	7.49	6.4	<3.69	7.96	4.9	6.05	8.11
2-Propanol	NSL	NSL	<3.07	9.73	4.35	4.03	59.2	38.1	41.3
Toluene	76,000	NSL	4,970	8,700	1,520	742	12.2	11.5	7.91
1,2,4-TMB	910	NSL	239	71.2	39.7	32.1	1.93	5.74	1.63
1,3,5-TMB	NSL	NSL	130	44.5	24.9	15.6	<0.982	1.72	<0.982
2,2,4-Trimethylpentane	NSL	NSL	124	738	417	176	<0.934	1.13	1.21
m&p-Xylene	1,500	NSL	4,250	3,260	789	486	5.72	16.2	6.07
o-Xylene	1,500	NSL	941	720	202	125	1.91	4.42	2.15
1,1-DFA (tracer gas)	NSL	NSL	5,380	174	<2.70	5.94	2.84	<2.70	3
Other VOCs	Varies	Varies	ND	ND	ND	ND	ND	ND	ND

Notes:

VOCs = volatile organic compounds

EPA = United States Environmental Protection Agency

MTCA Method B = Soil gas screening levels for cancer and noncancer risk (Washington State Department of Ecology [Ecology], Model Toxics Control Act [MTCA], 2020)

NSL = no screening level

Values in **bold** exceed laboratory reporting detection limit (RDL)

< = not detected above indicated RDL

TMB = trimethylbenzene

DFA = difluoroethane

ND = not detected above laboratory RDLs

Yellow highlighted values exceed MTCA Method B Cancer screening levels

Orange highlighted values exceed MTCA Method B Cancer and Noncancer screening levels

## FIGURES

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**PARTNER**



**PARTNER**  
 3607 1st Avenue NW  
 Seattle, Washington 98107  
 Project Number: 20-293062.2

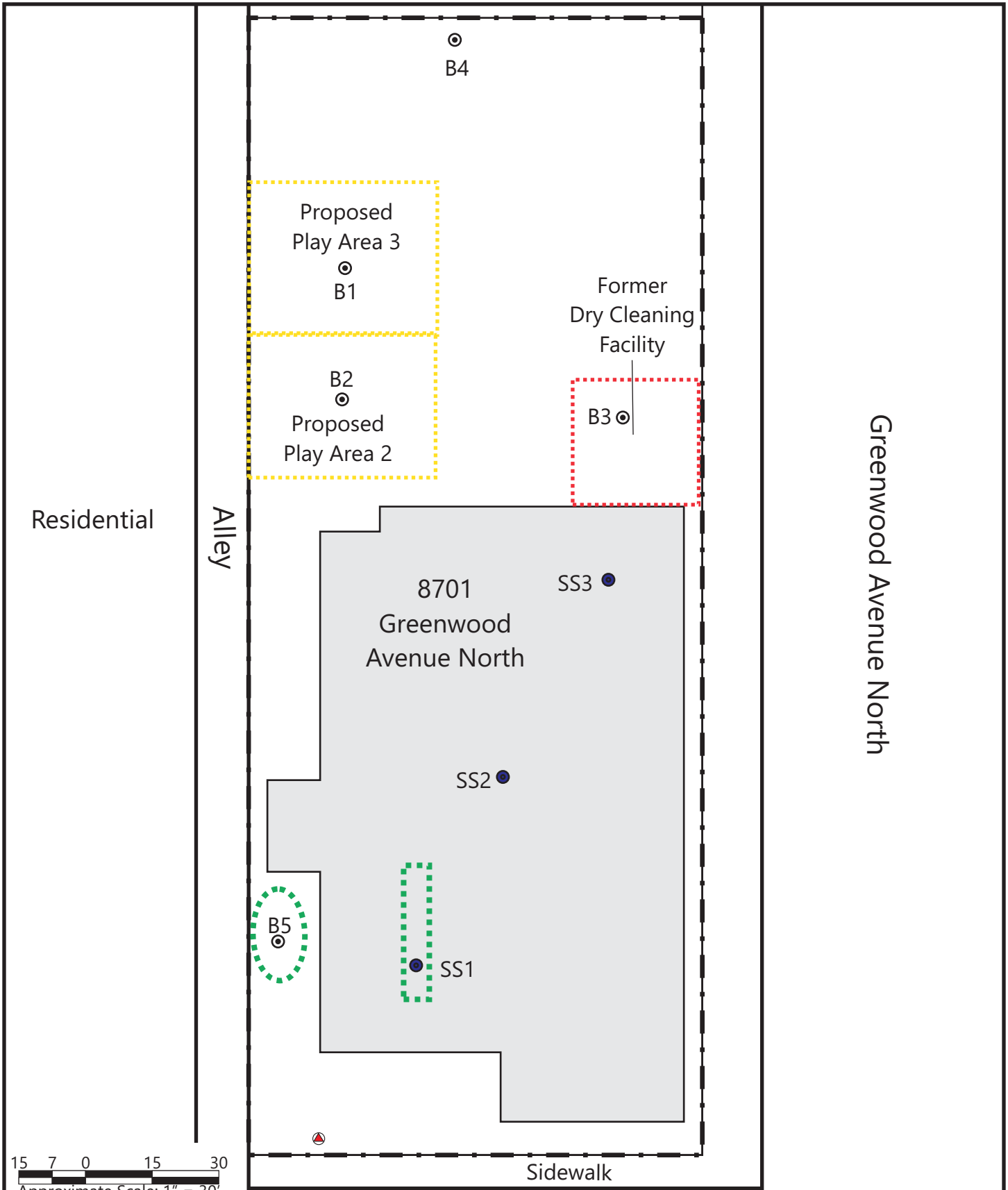


**Legend**

Subject Property 

**Site Vicinity Map**

Figure	Prepared By	Date
1	B. Godbois	March 2021
8701 Greenwood Avenue North Seattle, Washington 98103		





15 7 0 15 30  
 Approximate Scale: 1" = 30'

**PARTNER**  
 3607 1st Avenue NW  
 Seattle, Washington 98107  
 Project Number: 20-293062.2

-  Subject Property
-  Boring Location
-  Monitoring Well

**Legend**

-  Sub-Slab Soil Gas Probe Location
-  Areas of Suspected Impacted Soil

**Sample Location Map**

Figure	Prepared By	Date
2	B. Godbois	March 2021

8701 Greenwood Avenue North  
 Seattle, Washington 98103