STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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March 21, 2016

Ms. Cindy Schmid
Schmid Family Limited Partnership I, LLC
Post Office Box 719
Washougal, Washington 98671

Re: No Further Action at the following Site:

- **Site Name:** George Schmid & Sons, Inc.
- **Site Address:** 1411 32nd Street, Washougal
- **Cleanup Site ID:** 12445
- **Facility/Site No.:** 53281319
- **VCP Project No.:** SW1430

Dear Ms. Schmid:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the George Schmid & Sons, Inc. facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Arsenic, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), Total Petroleum Hydrocarbons Diesel-Range and Heavy Oil-Range (TPH-D/HO), Total Petroleum Hydrocarbons Gasoline-Range (TPH-G), and associated constituents into the Soil and/or Groundwater.
- Benzene & Vinyl Chloride into the Air.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Maul, Foster, and Alongi, *Remedial Investigation and Feasibility Study 32nd Street Property*, October 17, 2014.
2. Maul, Foster, and Alongi, *Soil Remedial Action Completion Draft Report Schmid 32nd Street Property-Remedial Action*, May 26, 2015.
3. Maul, Foster, and Alongi, *Soil Remedial Action Completion Final Report Schmid 32nd Street Property-Remedial Action*, October 29, 2015.
4. Maul, Foster, and Alongi, *Soil Remedial Action Completion Final Report,* January 21, 2016.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at 360.407.6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in detail in **Enclosure A.**

The Site is informally divided into an upland and lowland section. A 30-foot escarpment divides the two sections of the Site (Enclosure B, Exhibit B).

The Site is currently unimproved, with the exception of a gravel parking area and an asphalt-paved egress. George Schmid & Sons, Inc. (GSSI) acquired the property in the 1950s, and developed the upland section of the Site for light-industrial use. Prior to 1950, the Site was used for agricultural purposes. On-Site activities that likely contributed to contamination included sandblasting, power washing, vehicle storage, maintenance, and repair. GSSI discontinued the use of the Site for light-industrial purposes in 2010, and subsequently demolished all structural improvements at that time.

In 2010, PBS Engineering & Environmental (PBS) conducted a Phase I Environmental Site Assessment, as well as a Phase II Subsurface Investigation. PBS identified several Recognized Environmental Conditions, which warranted additional investigation.

GSSI contracted Maul, Foster, & Alongi (MFA) from April 2012 to March 2014 to conduct subsurface investigations in an effort to accurately characterize the Site, which included the following:

- Advancement of 31 soil borings to facilitate soil and groundwater sample collection and analysis.
- Advancement of seven monitoring wells (MWs).
- Collected soil gas samples from areas of impact as well as the Site perimeter to assess ambient air.

Following the aforementioned investigations, MFA identified and delineated a total of five areas of concern:

- Water cistern.
- Storm water outfall.
- Wash pad settling tanks.
- Former diesel UST.
- Fill area.

Figure 1 depicts the location of the above-referenced areas of concern (MFA October 2014 & MFA, May 2015).

Groundwater is impacted above MTCA Method A cleanup levels (CULs) near and down-gradient of the former diesel underground storage tank (UST) area (Figure 1). MW-01 and MW-03 are reportedly impacted, however MW-7, which is located down-gradient of the former diesel UST is not impacted.

Groundwater is also impacted in the immediate vicinity of the former fill area (Figure 1). MW-4 is situated within the fill area and is impacted with arsenic above MTCA Method A CULs. MW-5 & -6 are located down-gradient from the fill area/arsenic source, and are impacted with arsenic, but not exceeding MTCA Method A CULs.

Below is a list of exposure pathways.

Exposure Pathways:

Soil-Direct Contact:
This pathway is **incomplete**. MFA removed residual petroleum contaminated soil (PCS) above 15 feet below ground surface (bgs) determined to be above the respective MTCA Method A CULs.

Soil-Leaching:
This pathway is **incomplete**. MFA removed residual PCS, as such, leaching to groundwater is no longer a complete pathway.

Soil-Vapor:
This pathway remains **complete**. The fill area of the Site (Figure 1), has exhibited soil gas (benzene, methane, and vinyl chloride) in excess of the respective CULs.

An environmental covenant / institutional control requires all future structural improvements to be constructed with a vapor barrier, preventing the accumulation of soil vapors in any future building interiors.

Groundwater:
This pathway remains **complete**. MWs sampled during the last four groundwater monitoring events have exhibited contaminants of concern (CoCs) detections above the laboratory reporting limits or MTCA Method A CULs.

An environmental covenant / institutional control restricts groundwater use in the vicinity of the fill area and former diesel UST area.

Surface Water:
This pathway **incomplete**. The Washougal River defines the western perimeter of the Site – lowland area. MWs advanced in the lowland portion have exhibited non-detect results for CoCs. Additionally, MFA indicated the lowland portion of the Site was not used for industrial purposes.

Ecological:
This pathway is **incomplete**. MFA conducted a Site-specific terrestrial ecological evaluation (TEE). MFA identified locations where CoCs in soil exceeded the Ecological Indicator Concentrations (EICs). MFA identified five sample locations where CoCs exceeded soil-biota EICs. MFA reportedly excavated these areas (MFA, October 2014).

2. Establishment of cleanup standards.

Ecology has determined the CULs and points of compliance you established for the Site meet the substantive requirements of MTCA.

MFA used MTCA Method A CULs for unrestricted land use for soil and groundwater. MFA used MTCA Method B carcinogenic CULs for soil gas/vapors.

The soil MTCA Method A CULs are:

TPH-Gx	2,000 mg/Kg
TPH-D/HO	2,000 mg/Kg
cPAHs	0.1 mg/Kg
Naphthalenes	5 mg/Kg

The groundwater MTCA Method A CULs are:

Arsenic	5 µg/L
Lead	15 µg/L
TPH-D/HO	500 µg/L

The soil-gas indoor air MTCA Method B CULs are:

Benzene	0.321 $\mu g/m^3$
Vinyl Chloride	0.28 $\mu g/m^3$

Ecology determined the following points of compliance apply to the Site:

Soil - Direct Contact: For soil cleanup levels based on human exposure via direct contact: "*...throughout the Site from ground surface to 15 feet below the ground surface.*" (WAC 173-340-740(6))
Soil - Leaching: For Sites where soil cleanup levels are based on the protection of groundwater: "*...soils throughout the Site.*" (WAC 173-340-740(6)).

Soil - Vapor: For Sites where soil cleanup levels are based on the protection from vapors: "*...in the soils throughout the Site from the ground surface to the uppermost saturated zone (WAC 173-340-740(6))*

Ecological Receptors: For ecological receptors, "*...an institutional control is not required form soil contamination that is at least 15 feet below the ground surface.*"

Groundwater:
Since the extent of groundwater impact is limited to within the boundaries of the GSSI property, in the immediate vicinity of the former diesel UST and fill area, Ecology approved the following conditional points of compliance (COPCs):

- MW-2, -3, & -7 is the CPOC for the diesel release to groundwater.
- MW-4, -5, & -6 is the CPOC for the arsenic-impacted groundwater.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

MFA generated a Feasibility Study that screened five cleanup alternatives for the Site. MFA proposed the use of ICs and long-term groundwater monitoring to achieve cleanup standards at the Site. More specifically, the proposal included the following:

- ICs to prevent installation of future drinking water wells within the groundwater restricted use area of the Site. Groundwater can only be extracted for monitoring, construction dewatering, investigation, or remediation purposes in the groundwater restricted use area (Enclosure B, Exhibit C).

- Long-term groundwater monitoring must be conducted to confirm the CoCs in on-Site groundwater attenuate. In summary, long-term groundwater monitoring would consist of collecting groundwater samples from the six MWs comprising the two on-Site COPCs. Samples will be collected quarterly for the first year. If declining trends of CoCs are observed during the initial quarterly sampling events, Ecology will consider reducing the sampling frequency.
- Storm water infiltration facilities shall not be constructed on the Site in the area of groundwater restricted use to minimize the potential for mobilization of contaminants in groundwater. All storm water conveyance systems shall be designed with water-tight construction.
- Any building or other enclosed structure constructed on the Site shall be constructed with a sealed foundation and a vapor/soil gas control system installed to prevent the migration of soil gas into enclosed structures.

Despite the residual impacts to soil vapor and groundwater at the Site, Ecology has determined the Site meets cleanup standards through the use and implementation of the ICs specified throughout this letter.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site. This determination is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

Cleanup actions conducted at the Site to date include the following:

- Source removal and excavation of PCS from four areas of concern identified in the remedial investigation/feasibility study. MFA removed a total of 1,560 tons of PCS.
- Removal of on-Site structures & asphalt.
- Decommissioning of three gasoline and diesel USTs in the 1980s.
- Decommissioning of two USTs in 2010.
- In-Situ Chemical Oxidation (ISCO) injections in the vicinity of the former diesel UST (MFA, October 2014 & MFA, October 2015).

The excavated areas and their corresponding approximate excavation limits are illustrated in Figure 2 (MFA, May 2015).

Post-Cleanup Controls and Monitoring

Post-cleanup controls and monitoring are remedial actions performed after the cleanup to maintain compliance with cleanup standards. This opinion is dependent on the continued performance and effectiveness of the following:

1. **Compliance with institutional controls.**

   ICs prohibit or limit activities that may interfere with the integrity of engineered controls or result in exposure to hazardous substances. The following institutional controls are necessary at the Site:

   - Restriction on groundwater extraction and use in the groundwater restricted use area.
   - Restriction of storm water infiltration facility construction within the groundwater restricted use area.
   - Restriction on enclosed structures, requiring construction with vapor/gas control system and a sealed foundation.
   - Conduct monitoring of three on-Site MWs associated with the former diesel UST area (MW-2, -3, &, -7) and three on-Site MWs associated with the arsenic-impacted fill area of the Site (MW-4, -5, &, -6) to assess the performance of the remedial action (CPOCs).

   To implement those controls, an Environmental Covenant has been recorded on the following parcel of real property in Clark County:

   - Clark County Tax Lot no. 131880000.

   Ecology approved the recorded Covenant. A copy of the Covenant is included in **Enclosure B**.

2. **Performance of confirmational monitoring.**

   Confirmational monitoring is necessary at the Site to confirm the long-term effectiveness of the cleanup. The monitoring data will be used by Ecology during periodic reviews of post-cleanup conditions. Ecology has approved the monitoring plan you submitted. A copy of the plan is also included in **Enclosure B**.

Periodic Review of Post-Cleanup Conditions

Ecology will conduct periodic reviews of post-cleanup conditions at the Site to ensure that they remain protective of human health and the environment. If Ecology determines, based on a periodic review, that further remedial action is necessary at the Site, then Ecology will withdraw this opinion.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List and Leaking Underground Storage Tank List.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (SW1430).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 360.407.6528 or e-mail at ASCO461@ecy.wa.gov.

Sincerely,

J.G. Cook, LG
SWRO Toxics Cleanup Program

JGC:ANF

Enclosures (2): A – Description and Diagrams of the Site
B – Environmental Covenant & Groundwater Monitoring Plan

By Certified Mail: [91710821333939703942 80]

cc: Alan Hughes, Maul Foster Alongi
Matt Alexander, Ecology
Steve Teel, Ecology
Richelle Perez, Ecology
Nick Acklam, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

Site:
The George Schmid & Sons, Inc. (GSSI) Site is located at 1411 32nd Street in Washougal, Washington, and situated on Clark County tax lot no. 131880000. The Site is informally partitioned into two areas, the upland former operational area and the lower pasture area. The Site is 17.88 acres and is currently unimproved, with the exception of an asphalt-paved access egress and a gravel parking area located in the upland portion of the Site.

Topographically, the Site slopes towards the west. A steep slope/escarpment with an elevation of approximately 30-feet, divides the upland and lowland portions of the Site.

Property History and Current Use:
The Site was part of a large agricultural property prior to the 1950s, when George Schmid & Sons, Inc., developed the upland portion of the Site for light-industrial use. On-Site operations reportedly included heavy equipment maintenance and repair, power washing, sandblasting, heavy equipment storage, and miscellaneous business operations. All on-Site structures were reportedly demolished in 2010.

The Site is currently zoned R1-10, single-family with 10,000 square-foot lots. The use of the Site is slated to change. The current property owner has entered into a purchase agreement with the City of Washougal, requiring the city to redevelop the Site for use as a public park, with access to the Washougal River in the lowland portions of the Site. The upland portion of the Site is proposed to be used for parking, a playground, picnic area, and improved with a public restroom.

Property Vicinity:
The Site is bounded on the west by the Washougal River, and to the north, south, and east by a mixture of single-family residences and agricultural land improved with small farm-related structures.

Soils and Geology:
Subsurface soils underlying the Site are reportedly comprised of intermittent layers of silts, sands, and gravels, deposited during the Pleistocene Flood Events (Missoula Floods).

Groundwater:
Depth to groundwater measurements ranged from approximately 18 to 26 feet bgs in the upland portion to 6 to 8 feet in the lowland portion of the Site. Groundwater generally flows to the west, toward the Washougal River.

Surface/Storm Water System:
No surface water features are located on the Site. The Washougal River defines the western Site boundary, along the lowland portion of the Site. Currently, there are no surface water drainage features or facilities on-Site.

Source of Contamination & Contamination Extent:

In 2010, George Schmid & Sons, Inc. (GSSI) retained PBS Engineering & Environmental, Inc. (PBS) to conduct environmental assessments and investigations. PBS conducted a Phase I Environmental Site Assessment (PhI) and identified several recognized environmental conditions (RECs) including:

- Petroleum surface staining.
- Historical vehicle and equipment repair.
- Septic systems that may have received chemicals.
- An outfall that discharged storm water from the upland operational area to the lowland area.
- Three historical gasoline and diesel underground storage tanks (USTs).
- Two heating oil USTs, reportedly decommissioned form the Site in the 1980s.
- Significant amounts of fill material deposited in the upland area of the Site.

All of the RECs were confined to the upland area of the Site.

Also in 2010, PBS conducted construction oversight for GSSI, including the decommissioning of two additional USTs located to the west and east of the former shop and office building, and the demolition of several on-Site structures. PBS reportedly only supplied text referencing these investigations, with no supporting analytical data or diagrams (Maul Foster Alongi [MFA], October 2014). During demolition activities, PBS reportedly collected a total of 31 soil samples from conspicuously impacted areas identified in the PhI. TPH-D/HO and TPH-G were reportedly detected at concentrations exceeding the MTCA Method A cleanup levels (CULs).

GSSI subsequently contracted MFA to conduct environmental investigations in April 2012, October 2013, and March 2014. MFA conducted these investigations in a tiered approach, to assess the magnitude and extent of environmental impacts to the aforementioned areas on the Site. PBS or MFA identified a total of ten areas of potential environmental concern on the Site.

A total of 18 surface soil samples were collected from areas which may pose surficial impacts:

- Pipe storage area.
- Sandblasting area.
- Above-ground storage tanks (ASTs).
- Storm water outfalls discharging to the surface.

MFA advanced a total of 31 soil borings (GP-1 to GP-31) to assess potential subsurface impacts in additional areas of concern, including on-Site USTs, the fill material area, and the drywell area (Figure 1). Groundwater was also collected from GP-08 through GP-24, GP-26, and GP-27. A total of seven monitoring wells (MWs) were also advanced (MW-1 through MW-7).

MFA field screened borings located in the presumed fill area of the Site for soil gases, and collected soil gas from SP-9, which exhibited the highest soil gas reading. Benzene and vinyl chloride were detected in soil gas collected from GP-9 in excess of the MTCA Method B screening levels. Methane was also detected, and since there is no current screening level for

methane, the result was compared to the lower explosive limit (LEL) of 5%. MFA also collected soil gas samples along the Site perimeter (GP-28 through GP-31), to evaluate any off-Site soil gas concerns, none of which exceeded the MTCA Method B screening levels.

Following the aforementioned investigations, MFA identified and delineated a total of five areas of concern:

- Water cistern.
- Storm water outfall.
- Wash pad settling tanks.
- Former diesel UST.
- Fill area.

MFA determined the ***water cistern area*** was impacted with TPH-D/HO in shallow soil. Groundwater was reportedly not impacted in this area. In February 2015, MFA removed approximately 380-tons of PCS from this area. Confirmation soil samples collected from the excavation side walls and base exhibited CoC concentrations below their respective MTCA Method A CULs and/or laboratory minimum reporting level (MRL). MFA excavated soil to an approximate depth of 5 feet below ground surface (bgs).

MFA determined the ***storm water outfall area*** was impacted with TPH-D/HO in surface soils above the MTCA soil biota screening level. In February 2015, MFA excavated a total of 15-tons of PCS. MFA identified the outfall area as the only area where human health criteria were not exceeded, but an ecological concern was identified in the TEE, (MFA, October 2014). Confirmation soil samples collected from the excavation side walls and base exhibited CoC concentrations below their respective MTCA Method A CULs and/or laboratory MRLs. MFA excavated soil to an approximate depth of 1.5 feet bgs.

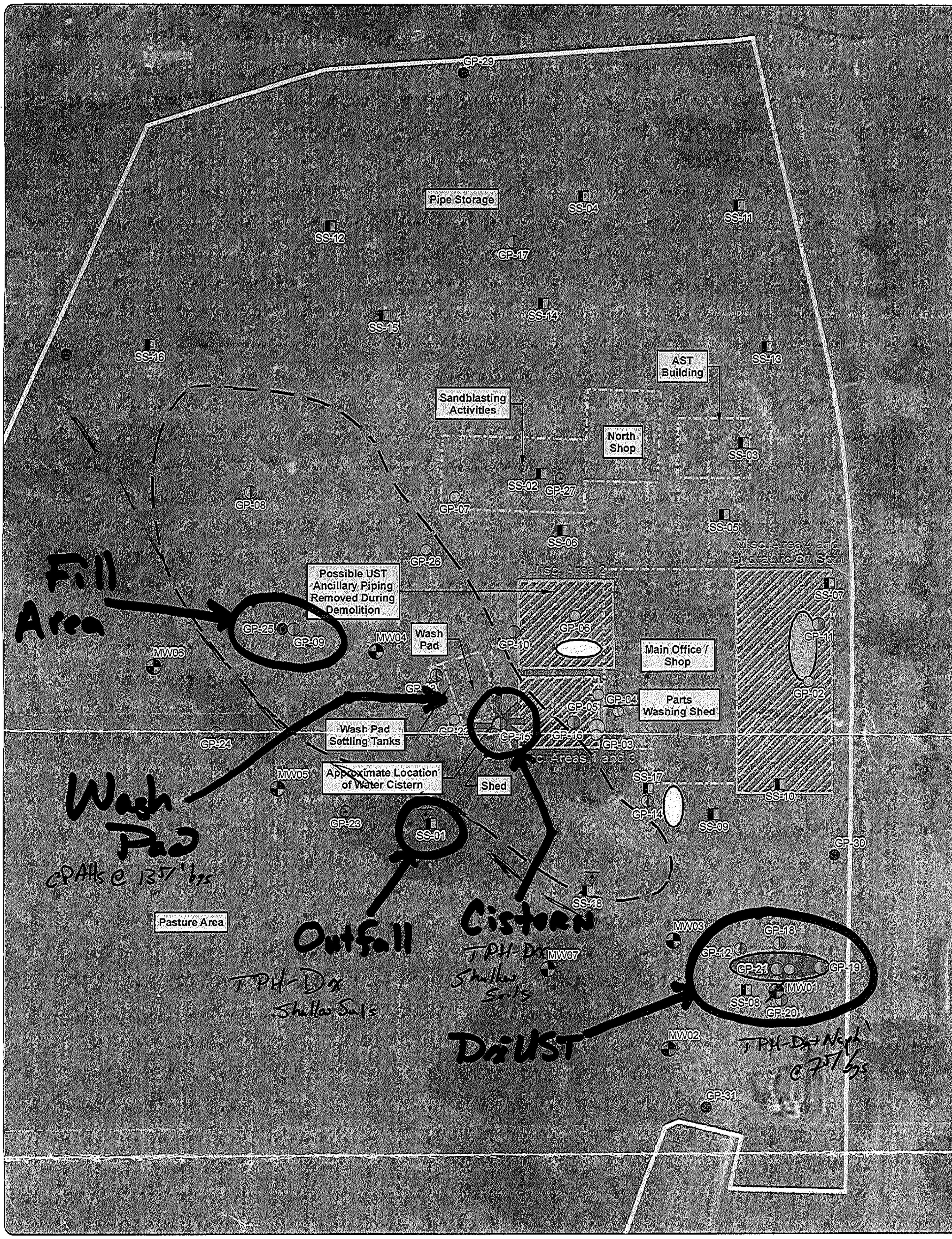
MFA determined the ***wash pad/settling tank area*** was impacted with carcinogenic polycyclic aromatic hydrocarbons (cPAHs) at a depth of approximately 13.5 feet bgs. Groundwater was reportedly not impacted in this area. In February 2015, MFA excavated approximately 450-tons of PCS. Initial confirmation soil samples collected from the excavation base and side walls exhibited CoC concentrations in excess of MTCA A CULs, as such, further excavation was conducted. Confirmation soil samples in the final excavation exhibited CoC concentrations below their respective MTCA Method A CULs and/or laboratory MRLs. MFA excavated soil to an approximate depth of 17 feet bgs.

MFA determined the ***former diesel UST area*** was impacted with TPH-D/HO, TPH-G, and naphthalenes above MTCA A CULs. The limits of the impacts to soil are reportedly limited to the immediate vicinity of the former UST and at a depth of approximately 7.5 feet bgs. In February 2015, MFA excavated a total of 715-tons of PCS. Confirmation soil samples collected from the excavation side walls and base exhibited CoC concentrations below their respective MTCA Method A CULs and/or laboratory MRLs. MFA excavated soil to an approximate depth of 16.5 feet bgs.

MFA concluded the soil gas impacts are contained within the ***fill area*** of the Site, and likely do not extend beyond the Site boundaries (MFA, October 2014). The results of the soil gas investigation determined that methane is above the lower explosive limit (LEL) and benzene and vinyl chloride levels are above the associated screening levels at GP-9 and GP-25.

From August 10 to 12, 2015, MFA conducted in-situ chemical oxidation (ISCO) injections to further remediate TPH-D/HO impacts to groundwater in the vicinity of the former diesel UST (MFA, October 2015). The August 2015 ISCO event consisted of 18 injection points covering an area of approximately 1,800 ft^2. MFA advanced each injection point to 26 feet bgs, with treatment intervals ranging from 12 to 26 feet bgs.

MFA conducted a site-specific terrestrial ecological evaluation (TEE) (MFA October 2014). Five sample locations were identified to exceed ecological indicator concentrations (EICs) outlined in MTCA Table 749-3. All areas identified that exceed the respective EICs have been excavated, therefore eliminating unacceptable risks to ecological receptors (MFA, October 2014).



Source: Aerial photograph obtained from Esri ArcGIS Online; sample locations collected using GeoXH 6000 Series GPS unit.

Notes:
1. All feature locations are historical, approximate, and based on general site descriptions.
2. AST = Aboveground storage tank
UST = Underground storage tank
GPS = Global positioning system

Legend

- Soil Boring
- Groundwater Boring
- Soil & Groundwater Boring
- Surface Soil Sample Location
- Soil Gas Boring
- Monitoring Wells
- Drywell (Approximate)
- Outfall (Approximate)
- Oil UST Pit
- Gasoline UST Pit
- Diesel UST Pit
- Trench Location
- Miscellaneous Areas
- Fill Material (Approximate)
- Approximate Historical Features
- Subject Property

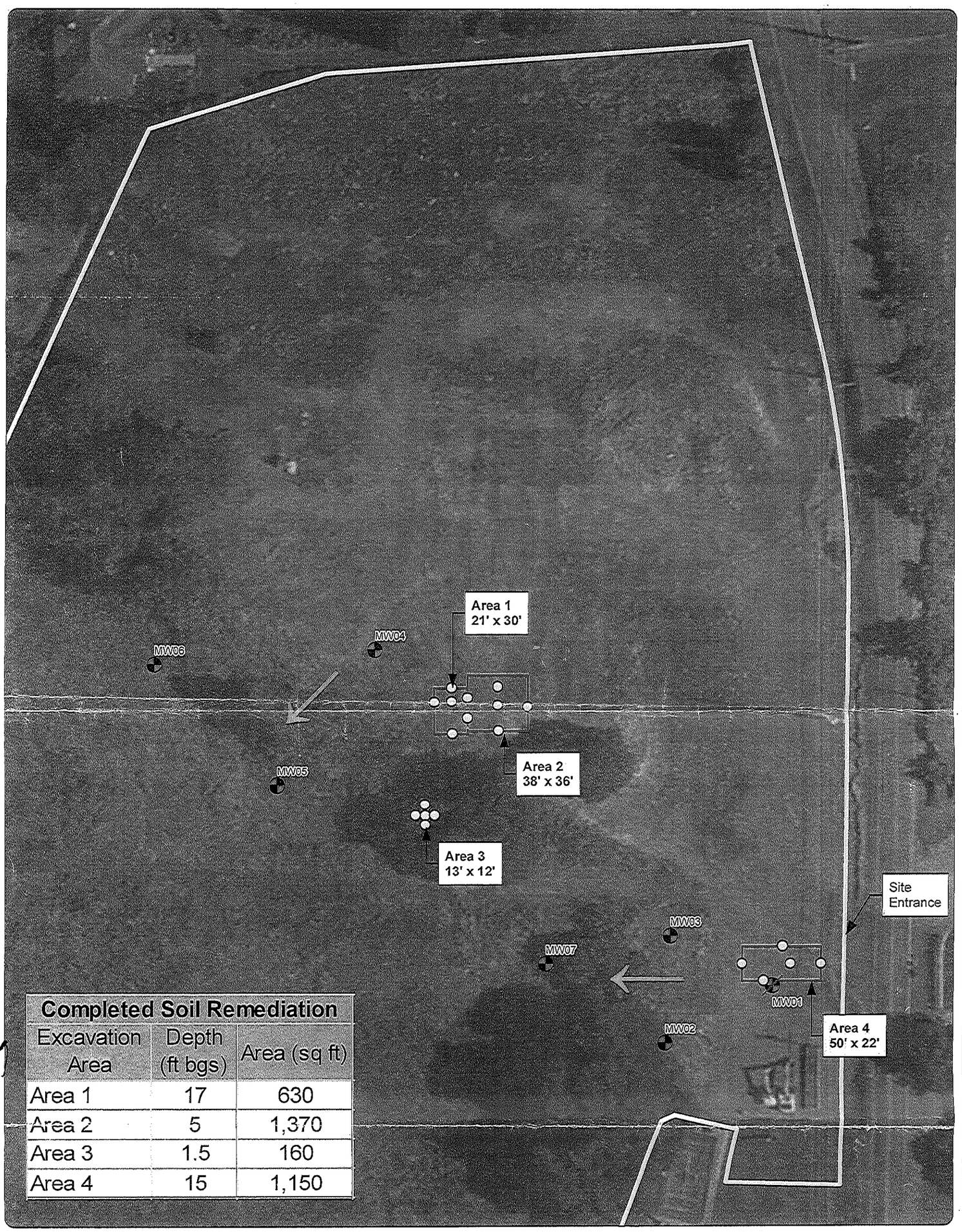
0 30 60
Feet

Figure 2
Site Features
32nd Street Property

George Schmid and Sons, Inc.
Washougal, Washington

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Project 0564.02.01-04 Produced By: rmarion Approved By: jbounds Print Date: 8/18/2014 Path: X:\0564.02 ACP\01\04\Projects\Fig2 Site Features.mxd



Completed Soil Remediation		
Excavation Area	Depth (ft bgs)	Area (sq ft)
Area 1	17	630
Area 2	5	1,370
Area 3	1.5	160
Area 4	15	1,150

Source: Aerial photograph obtained from Esri ArcGIS Online.

Notes:
ft bgs = feet below groundsurface
sq ft = square feet

Legend

- Sample Location
- Monitoring Well
- Decommisioned Well (2/17/2015)
- Outfall (Approximate)
- Excavation Areas
- Subject Property
- Groundwater Flow Direction

Figure 2
Completed Soil Remediation

32nd Street Property
George Schmid & Sons, Inc.
Washougal, Washington

0 30 60
Feet

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Path: X:\0684.02 ACP\01\04\Project\VF\g2_Completed Soil Remediation.mxd
Print Date: 9/11/2015
Approved By: jlounds
Produced By: jkshane
Project: 0684.02.01.04

Enclosure B

Environmental Covenant
&
Groundwater Monitoring Plan

After Recording Return
Original Signed Covenant to:
Jason G. Cook, LG
Toxics Cleanup Program
Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

Environmental Covenant

Grantor: Schmid Family Limited Partnership I.
Grantee: State of Washington, Department of Ecology (hereafter "Ecology")
Brief Legal Description: A portion of the tract of land conveyed to The Schmid Family Limited Partnership I, by boundary line adjustment quit claim deed reordered under Auditor's File No. 3358804, records of said county, lying in the Northeast quarter and Southeast quarter of Section 8, Township 1 North, Range 4 East of the Willamette Meridian.
Tax Parcel Nos.: 131880-000 (Tax Lot 160)
Cross Reference: VCP Identification Number: SW1430

RECITALS

a. This document is an environmental (restrictive) covenant (hereafter "Covenant") executed pursuant to the Model Toxics Control Act ("MTCA"), chapter 70.105D RCW, and Uniform Environmental Covenants Act ("UECA"), chapter 64.70 RCW.

b. The Property that is the subject of this Covenant is part or all of a site commonly known as George Schmid & Sons, Inc., Facility Identification Number 53281319. The Property is legally described in Exhibit A, and illustrated in Exhibit B, both of which are attached (hereafter "Property"). If there are differences between these two Exhibits, the legal description in Exhibit A shall prevail.

c. The Property is the subject of remedial action conducted under MTCA. This Covenant is required because residual contamination remains on the Property after completion of remedial actions. Specifically, the following principal contaminants remain on the Property:

Medium	Principal Contaminants Present
Soil Vapors	Vinyl chloride, benzene, and methane
Groundwater	Arsenic, diesel-range and lube-oil-range petroleum hydrocarbons

d. It is the purpose of this Covenant to restrict certain activities and uses of the Property to protect human health and the environment and the integrity of remedial actions conducted at the site. Records describing the extent of residual contamination and remedial actions conducted are available through Ecology.

1. Maul, Foster, and Alongi, Remedial Investigation and Feasibility Study 32nd Street Property, October 17, 2014.
2. Maul, Foster, and Alongi, Soil Remedial Action Completion Draft Report Schmid 32nd Street Property-Remedial Action, May 26, 2015.

3. Maul, Foster, and Alongi, Soil Remedial Action Completion Final Report Schmid 32nd Street Property-Remedial Action, October 29, 2015.

e. This Covenant grants Ecology certain rights under UECA and as specified in this Covenant. As a Holder of this Covenant under UECA, Ecology has an interest in real property, however, this is not an ownership interest which equates to liability under MTCA or the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq.* The rights of Ecology as an "agency" under UECA, other than its' right as a holder, are not an interest in real property.

f. The Grantor has entered a purchase and sale agreement with the City of Washougal to purchase the Property for development of a park.

COVENANT

Schmid Family Limited Partnership I, as Grantor and fee simple owner of the Property hereby grants to the Washington State Department of Ecology, and its successors and assignees, the following covenants. Furthermore, it is the intent of the Grantor that such covenants shall supersede any prior interests the GRANTOR has in the property and run with the land and be binding on all current and future owners of any portion of, or interest in, the Property.

Section 1. General Restrictions and Requirements.

The following general restrictions and requirements shall apply to the Property:

a. **Interference with Remedial Action.** The Grantor shall not engage in any activity on the Property that may impact or interfere with the remedial action and any operation, maintenance, inspection or monitoring of that remedial action without prior written approval from Ecology.

- In-situ chemical oxidation injections were completed in the former diesel underground storage tank area (UST) from August 10 to 12, 2015. No development shall occur in the groundwater restricted area (Exhibit C) that would prevent additional injections and monitoring well sampling prior to meeting cleanup levels without prior approval from Ecology.

b. **Protection of Human Health and the Environment.** The Grantor shall not engage in any activity on the Property that may threaten continued protection of human health or the environment without prior written approval from Ecology. This includes, but is not limited to, any activity that results in the release of residual contamination that was contained as a part of the remedial action or that exacerbates or creates a new exposure to residual contamination remaining on the Property.

- There is no containment activities associated with the selected remedy. Until such time as cleanup levels are met in groundwater, groundwater use is not allowed within the groundwater restricted area shown on Exhibit C.
- No storm water infiltration facilities will be constructed in the area of groundwater restriction (see Section 2a).
- Any enclosed buildings will include construction of a vapor barrier (see Section 2b).

c. **Continued Compliance Required.** Grantor shall not convey any interest in any portion of the Property without providing for the continued adequate and complete operation, maintenance and monitoring of remedial actions and continued compliance with this Covenant.

d. Leases. Grantor shall restrict any lease for any portion of the Property to uses and activities consistent with this Covenant and notify all lessees of the restrictions on the use of the Property.

e. Preservation of Reference Monuments. Grantor shall make a good faith effort to preserve any reference monuments and boundary markers used to define the areal extent of coverage of this Covenant. Should a monument or marker be damaged or destroyed, Grantor shall have it replaced by a licensed professional surveyor within 30 days of discovery of the damage or destruction.

Section 2. Specific Prohibitions and Requirements.

In addition to the general restrictions in Section 1 of this Covenant, the following additional specific restrictions and requirements shall apply to the Property.

a. Stormwater facilities.

To minimize the potential for mobilization of contaminants remaining in the groundwater on the Property, no stormwater infiltration facilities or ponds shall be constructed within the area of the Property illustrated in Exhibit C for groundwater restrictions. All stormwater catch basins, conveyance systems, and other appurtenances located within the area illustrated on Exhibit C for groundwater restrictions shall be of water-tight construction, to eliminate the potential for storm water infiltration to influence groundwater flow velocity or direction on the on the Property.

b. Vapor/gas controls.

Any building or other enclosed structure constructed within the area of the Property illustrated in Exhibit C for vapor intrusion restrictions shall be constructed with slab-on-grade or perimeter raised foundations including a sealed foundation (vapor barrier) and with a vapor/gas control system installed and maintained to prevent the migration of vapors/gas into the building or structure. Prior to construction, engineering plans of the proposed vapor barrier and vapor/gas control system must be submitted to Ecology for review and approval.

c. Groundwater use.

Groundwater in the groundwater restricted area shown on Exhibit C remains contaminated and shall not be extracted for any purpose other than temporary construction dewatering, investigation, monitoring, or remediation until such time that Ecology confirms that groundwater monitoring shows that the groundwater in the groundwater restricted area meets MTCA Cleanup Levels. Drilling of a well for any water supply purpose is strictly prohibited in the groundwater restricted area. Groundwater extracted from the groundwater restricted area shown on Exhibit C for any purpose shall be considered potentially contaminated and any discharge of this water shall be done in accordance with state and federal law.

The wells required for monitoring as described in Exhibit D will not be removed until and unless Ecology confirms that groundwater monitoring shows that the groundwater in the groundwater restricted area meets MTCA Cleanup levels. If these wells are damaged or the surface completion requires alteration, the construction will be completed by a Washington State licensed Resource Protection Well Operator.

d. Monitoring.

Six groundwater monitoring wells are located on the Property to monitor the performance of the remedial action, or used to assess groundwater flow direction and gradient. The Grantor shall maintain clear access to these devices and protect them from damage. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to any monitoring device. Unless Ecology approves of an alternative plan in writing, the Grantor shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs. Monitoring shall be conducted in accordance with the Ecology-approved Groundwater Monitoring Plan included as Exhibit D.

Section 3. Access.

a. The Grantor shall maintain clear access to all remedial action components necessary to construct, operate, inspect, monitor and maintain the remedial action.

b. The Grantor freely and voluntarily grants Ecology and its authorized representatives, upon reasonable notice, the right to enter the Property at reasonable times to evaluate the effectiveness of this Covenant and associated remedial actions, and enforce compliance with this Covenant and those actions, including the right to take samples, inspect any remedial actions conducted on the Property, and to inspect related records.

c. No right of access or use by a third party to any portion of the Property is conveyed by this instrument.

Section 4. Notice Requirements.

a. Conveyance of Any Interest. The Grantor, when conveying any interest within the area of the Property illustrated in Exhibit C, including but not limited to title, easement, leases, and security or other interests, must:

i. Provide written notice to Ecology of the intended conveyance at least thirty (30) days in advance of the conveyance.

ii. Include in the conveying document a notice in substantially the following form, as well as a complete copy of this Covenant:

NOTICE: THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTED TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY ON [_____] AND RECORDED WITH THE CLARK COUNTY AUDITOR UNDER RECORDING NUMBER [_____]. USES AND ACTIVITIES ON THIS PROPERTY MUST COMPLY WITH THAT COVENANT, A COMPLETE COPY OF WHICH IS ATTACHED TO THIS DOCUMENT.

iii. Unless otherwise agreed to in writing by Ecology, provide Ecology with a complete copy of the executed document within thirty (30) days of the date of execution of such document.

b. Reporting Violations. Should the Grantor become aware of any violation of this Covenant, Grantor shall promptly report such violation in writing to Ecology.

c. Emergencies. For any emergency or significant change in site conditions due to Acts of Nature (for example, flood or fire) resulting in a violation of this Covenant, the Grantor is authorized to respond to such an event in accordance with state and federal law. The Grantor must notify Ecology in writing of the event and response actions planned or taken as soon as practical but no later than within 24 hours of the discovery of the event.

d. Notification procedure. Any required written notice, approval, reporting or other communication shall be personally delivered or sent by first class mail to the following persons. Any change in this contact information shall be submitted in writing to all parties to this Covenant. Upon mutual agreement of the parties to this Covenant, an alternative to personal delivery or first class mail, such as e-mail or other electronic means, may be used for these communications.

Schmid Family Limited Partnership I Carolyn A. Simms PO Box 169 Washougal, WA 98671 (360) 833-2174 City Administrator City of Washougal 1701 C Street Washougal, WA 98671 (360) 835-8501	Environmental Covenants Coordinator Washington State Department of Ecology Toxics Cleanup Program P.O. Box 47600 Olympia, WA 98504 – 7600 (360) 407-6000 ToxicsCleanupProgramHQ@ecy.wa.gov

Section 5. Modification or Termination.

a. Grantor must provide written notice and obtain approval from Ecology at least sixty (60) days in advance of any proposed activity or use of the Property in a manner that is inconsistent with this Covenant. For any proposal that is inconsistent with this Covenant and permanently modifies an activity or use restriction at the site:

i. Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal; and

ii. If Ecology approves of the proposal, the Covenant must be amended to reflect the change before the activity or use can proceed.

b. If the conditions at the site requiring a Covenant have changed or no longer exist, then the Grantor may submit a request to Ecology that this Covenant be amended or terminated. Any amendment or termination of this Covenant must follow the procedures in MTCA and UECA and any rules promulgated under these chapters.

c. By signing this agreement, per RCW 64.70.100, the original signatories to this agreement, other than Ecology, to the extent that they subsequently transfer their rights in the Property to another, agree to waive all rights to sign amendments to and sign termination of this Covenant.

Section 6. Enforcement and Construction.

a. This Covenant is being freely and voluntarily granted by the Grantor.

b. Within ten (10) days of execution of this Covenant, Grantor shall provide Ecology with an original signed Covenant and proof of recording and a copy of the Covenant and proof of recording to others required by RCW 64.70.070.

c. Ecology shall be entitled to enforce the terms of this Covenant by resort to specific performance or legal process. All remedies available in this Covenant shall be in addition to any and all remedies at law or in equity, including MTCA and UECA. Enforcement of the terms of this Covenant shall be at the discretion of Ecology, and any forbearance, delay or omission to exercise its rights under this Covenant in the event of a breach of any term of this Covenant is not a waiver by Ecology of that term or of any subsequent breach of that term, or any other term in this Covenant, or of any rights of Ecology under this Covenant.

d. The Grantor shall be responsible for all costs associated with implementation of this Covenant. Furthermore, the Grantor, upon request by Ecology, shall be obligated to pay for Ecology's costs to process a request for any modification or termination of this Covenant and any approval required by this Covenant.

e. This Covenant shall be liberally construed to meet the intent of MTCA and UECA.

f. The provisions of this Covenant shall be severable. If any provision in this Covenant or its application to any person or circumstance is held invalid, the remainder of this Covenant or its application to any person or circumstance is not affected and shall continue in full force and effect as though such void provision had not been contained herein.

g. A heading used at the beginning of any section or paragraph or exhibit of this Covenant may be used to aid in the interpretation of that section or paragraph or exhibit but does not override the specific requirements in that section or paragraph.

The undersigned Grantor warrants he/she holds the title to the Property and has authority to execute this Covenant.

EXECUTED this 1st day of February, 2016.

Signature: Emma M. Schmid
By (printed): Emma M. Schmid
Title: Schmid Family Limited Partnership I

CORPORATE ACKNOWLEDGMENT

STATE OF Washington
COUNTY OF Clark

On this 1st day of February, 2016 I certify that Emma M. Schmid personally appeared before me, acknowledged that **he/she** is the General Partner of the corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that **he/she** was authorized to execute said instrument for said corporation.

CAROLYN SIMMS
STATE OF WASHINGTON
NOTARY — PUBLIC
My Commission Expires Sept. 01, 2017

Carolyn Simms
Notary Public in and for the State of Washington [15]
Residing at Clark County
My appointment expires 9-1-2017

The Department of Ecology, hereby accepts the status as GRANTEE and HOLDER of the above Environmental Covenant.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Signature: Rebecca S. Lawson
by: Rebecca S. Lawson, P.E., LHG
Title: Section Manager
Toxics Cleanup Program
Southwest Regional Office

Dated: 2/18/2016

STATE ACKNOWLEDGMENT

STATE OF Washington
COUNTY OF Thurston

On this 18th day of February, 2016 I certify that Rebecca S. Lawson personally appeared before me, acknowledged that **he/she** is the Environmental Covenant Coordinator of the state agency that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed, for the uses and purposes therein mentioned, and on oath stated that **he/she** was authorized to execute said instrument for said state agency.

Lorna L. Gadwa
Notary Public in and for the State of Washington

LORNA L. GADWA NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES SEPTEMBER 17, 2019

Residing at Olympia

My appointment expires September 17, 2019

Exhibit A

LEGAL DESCRIPTION

Title Order No.: **00151602**

EXHIBIT "A"

Real property situated in the City of Washougal, Clark County, Washington, being a portion of that tract of land conveyed to The Schmid Family Limited Partnership I, by boundary line adjustment quit claim deed recorded under Auditor's File No. 3358804, records of said county, lying in the Northeast quarter and Southeast quarter of Section 8, Township 1 North, Range 4 East of the Willamette Meridian, described as follows:

Commencing at the Northeast corner of the C.C. Stiles Donation Land Claim; thence South 01°09'41" West along the East line of said C.C. Stiles Donation Land Claim a distance of 955.55 feet to the Easterly projection of the North line of that parcel conveyed to Peter Hasselberg by warranty deed recorded under Volume 88, page 466, records of said county; thence North 88°18'19" West along said Easterly projection a distance of 30.00 feet to the Northeast corner of said Volume 88, page 466, being a point on the westerly right of way line 32nd Street; thence continuing North 88°18'19" West along said North line a distance of 158.98 feet to the Northwest corner thereof, said point being the Point of Beginning; thence along the West line of said Hasselberg parcel the following courses:

South 38°23'41" West a distance of 62.10 feet; thence South 40°36'41" West a distance of 100.00 feet; thence South 27°48'41" West a distance of 195.00 feet; thence South 45°35'41" West, a distance of 50.00 feet; thence South 57°55'41" West a distance of 150.00 feet; thence South 69°33'41" West a distance of 201.10 feet to the Southwest corner thereof, also being a point on the North line of Riverside Addition to Washougal recorded in Book C of plats, page 46, records of said county; thence North 88°50'19" West along said North line a distance of 121.17 feet to an angle point on the East line of Lot 4 as shown on short plat recorded in Book 1 of plats, page 785, records of said county; thence North 01°27'41" East along said East line a distance of 85.00 feet to the Northeast corner thereof; thence North 88°50'19" West along the North line of said Lot 4 a distance of 84.66 feet to the West line of said Schmid Family Limited Partnership I parcel; thence North 01°27'41" East along said West line a distance of 1002.84 feet to the Northwest corner thereof, also being a point on the South line of that tract of land conveyed to George W. Charters and Christine Charters by gift quit claim deed recorded under Auditor's File No. G 494545, records of said county; thence South 89°23'57" East along said South line and the South line of that tract land conveyed to Emma M. Schmid by quit claim deed recorded under Auditor's File No. 3781370, records of said county, a distance of 350.01 feet to the Southeast corner of said Emma M. Schmid tract; thence North 24°04'45" East along the East line of said Schmid tract a distance of 236.61 feet to an angle point therein; thence North 72°16'37" East along the South line of said Schmid parcel and the South line of that tract of land conveyed to Mary F. Hargrave and Alan F. Hargrave, recorded under Auditor's File No. 3848057, records of said county, a distance of 117.01 feet to an angle point therein; thence North 85°45'23" East along said South line a distance of 255.32 feet to the westerly right of way line of 32nd Street and being a point on an arc of a 984.88 foot radius non-tangent curve; thence along said westerly right of way line the following courses:

From a tangent bearing of South 08°03'26 " East, along said curve to the left, through a central angle of 06°47'54", an arc distance of 116.86 feet; thence South 14°51'19" East a distance 96.70 feet to the point of curvature of a 925.30 foot radius curve; thence along said curve to the right through a central angle of 16°01'00", an arc distance of 258.66 feet; thence South 01°09'41" West a distance of 267.47 feet to the North line of Auditor's

File No. 9801270217;

Thence leaving said Westerly right of way line North 88°18'19" West along said North line distance of 73.11 feet; thence North 11°55'10" East a distance of 34.29 feet; thence North 76°33'08" West a distance of 40.42 feet; thence South 66°41'30" West a distance of 9.40 feet; thence South 20°16'09" West a distance of 185.30 feet; thence South 51°36'19" East a distance of 20.65 feet to the Point of Beginning.

EXCEPT that portion lying within the lines of ordinary high water of Washougal River.

Clark County Title

1400 Washington St., Suite 100
P.O. Box 1308 • Vancouver, WA 98660
Telephone (360) 694-4722 • Fax (360) 694-4734 • www.clarkcountytitle.com

Supplemental No. 1
to Title Order No. 00151602

Escrow Officer: **Tamara Barrett**
Title Officer: **Jerry Rock**

Property Address:
1407 32nd Street
Washougal, WA 98671
Re: Schmid/City of Wash

Supplemental dated: September 10, 2015

The following matters affect the title to the property covered by the above referenced Preliminary Commitment, but is not intended to represent a complete report to date:

- Special Exception No. 8 of Schedule B, has been amended to read as follows:

EASEMENT and the terms and conditions thereof:

Grantee:	Public Utility District No. 1 of Clark County, including joint users
Purpose:	Electric transmission and distribution
Area Affected:	Said premises
Recorded:	July 13, 1955
Auditor's File No:	G 174140

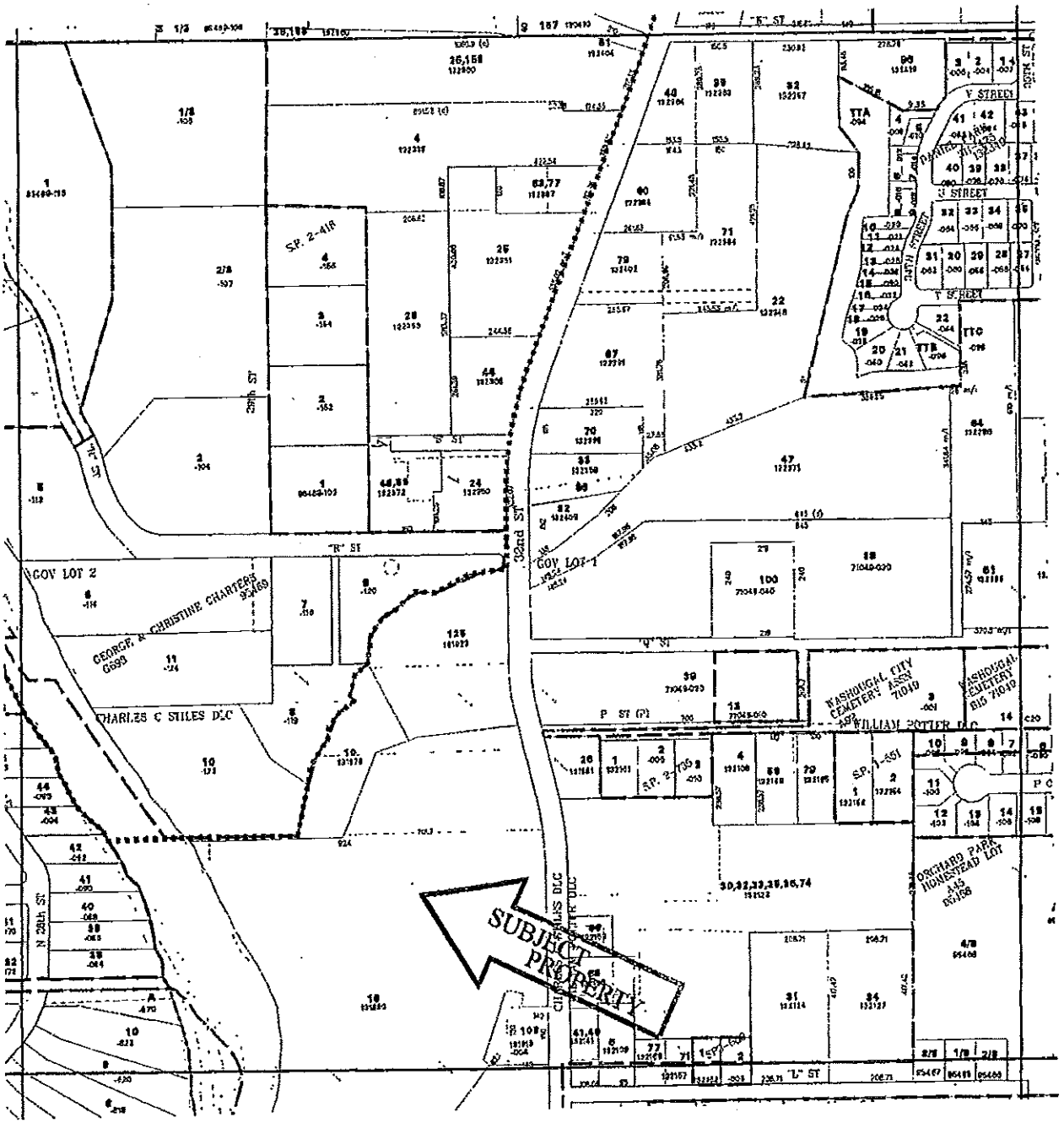
This supplemental is made a part of said Commitment including any prior Supplemental, and is subject to the schedules, terms and provisions and the conditions and stipulations therein, except as modified by the provisions herein, it does not extend the effective date of said Commitment.

Clark County Title Co

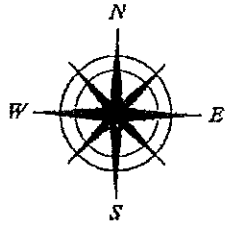
By _____
Jerry Rock, Title officer

Clark County Title

1400 Washington St., Suite 100
P.O. Box 1308 • Vancouver, WA 98660
Telephone (360) 694-4722 • Fax (360) 694-4734 • www.clarkcountytitle.com



THIS SKETCH IS PROVIDED, WITHOUT CHARGE FOR YOUR INFORMATION. IT IS NOT INTENDED TO SHOW ALL MATTERS RELATED TO THE PROPERTY, INCLUDING BUT NOT LIMITED TO AREA, DIMENSIONS, EASEMENTS, ENCROACHMENTS OR LOCATIONS OF BOUNDARIES. IT IS NOT A PART OF, NOR DOES IT MODIFY, THE COMMITMENT OR POLICY TO WHICH IT IS ATTACHED. THE COMPANY ASSUMES NO LIABILITY FOR ANY MATTER RELATED TO THIS SKETCH, UNLESS SUCH COVERAGE IS SPECIFICALLY PROVIDED BY THE COVERED RISKS OF THE POLICY. REFERENCE SHOULD BE MADE TO AN ACCURATE SURVEY FOR FURTHER INFORMATION



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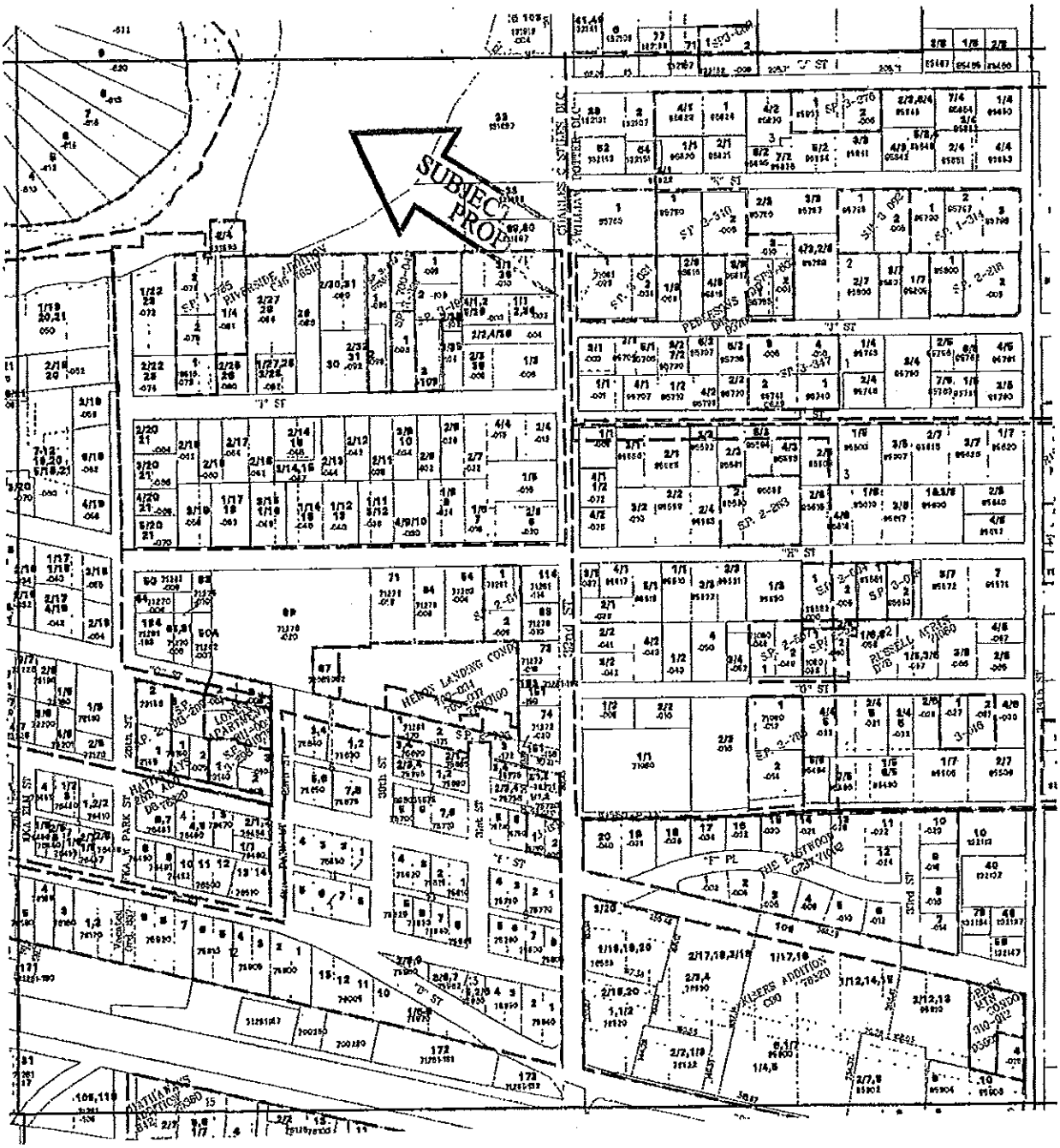

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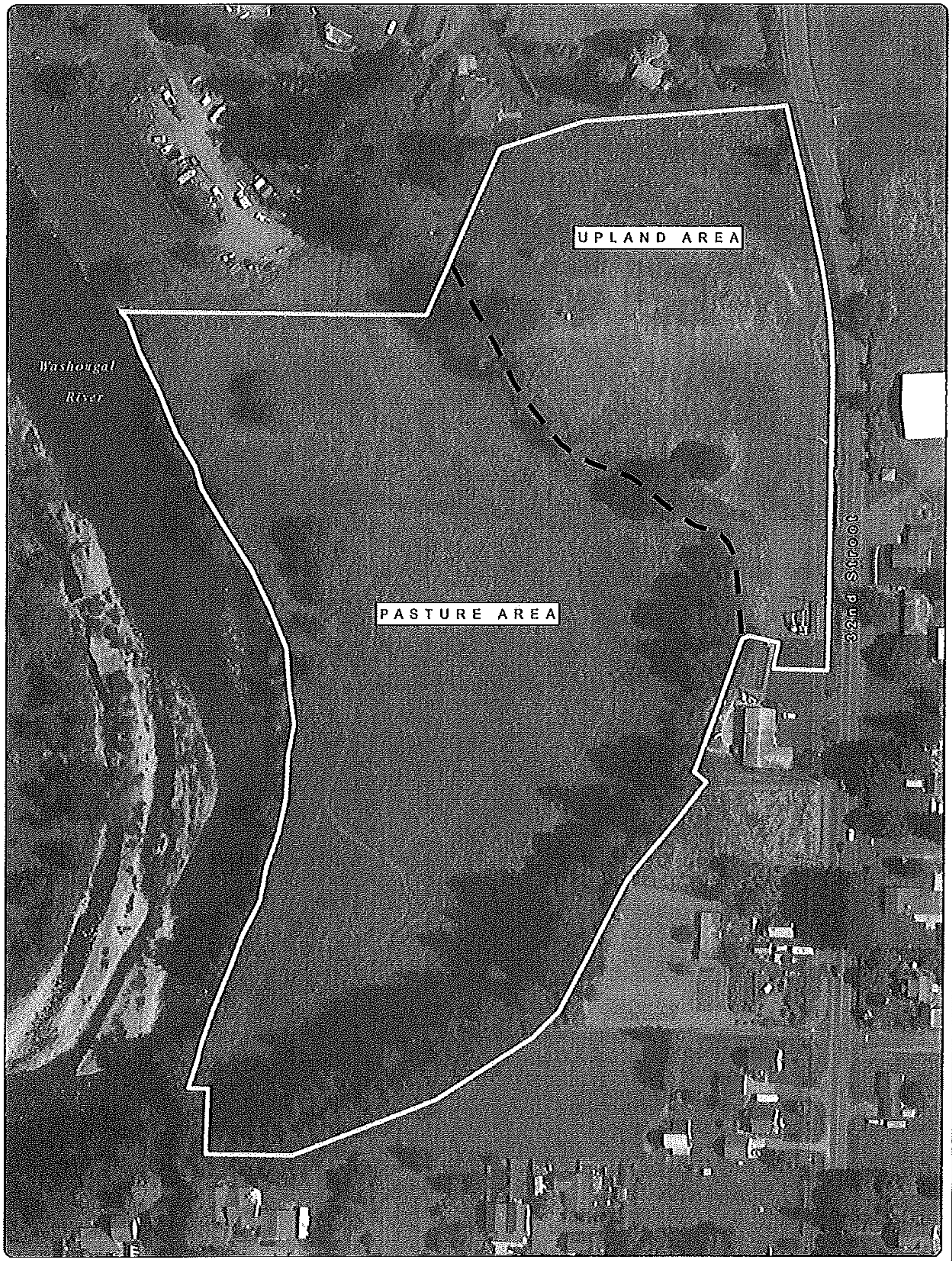
Exhibit B

PROPERTY MAP



Source: Aerial photograph obtained from Esri ArcGIS Online.

Exhibit B
Property Overview

32nd Street Property
George Schmid and Sons, Inc.
Washougal, Washington

Legend

Subject Property

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

0 75 150
Feet

Exhibit C

MAP ILLUSTRATING LOCATION OF RESTRICTIONS

Source: Aerial photograph obtained from Esri ArcGIS Online.

- Monitoring Wells
- Groundwater Intrusion Restrictions
- Vapor Intrusion Restrictions
- Subject Property
- PUD Easement
- Donation Land Claim (DLC)
- PLSS Section

0 75 150
Feet

Exhibit C
Location of Restrictions

32nd Street Property
George Schmid and Sons, Inc.
Washougal, Washington

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Source: Aerial photograph obtained from Esri ArcGIS Online.

Exhibit C
Location of Restrictions

32nd Street Property
George Schmid and Sons, Inc.
Washougal, Washington

Legend

- Monitoring Wells
- Groundwater Intrusion Restrictions
- Vapor Intrusion Restrictions
- Subject Property

0 30 60
Feet

MAUL FOSTER ALONGI
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Exhibit D

GROUNDWATER COMPLIANCE MONITORING PLAN

MAUL FOSTER ALONGI

400 East Mill Plain Blvd., Suite 400 | Vancouver, WA 98660 | 360 694 2691 | www.maulfoster.com

October 29, 2015
Project No. 0564.02.03

Jason Cook
Washington State Department of Ecology
PO Box 47600
Olympia, Washington 98504-7600

Re: Groundwater Compliance Monitoring Plan for George Schmid & Sons, Inc. 32nd Street Property

Dear Mr. Cook:

On behalf of George Schmid & Sons, Inc. (GSSI), Maul Foster & Alongi, Inc., has prepared this groundwater compliance monitoring plan (CMP) for the 32nd Street Property located at 1141 32nd Street, Washougal, Washington (the Property). GSSI completed the soils portion of a remedial action for the Property in early 2015. Groundwater in situ injections were completed in August 2015, completing the remedial actions for the Property.

BACKGROUND

The Property was part of a large agricultural property until the mid-1930s and contained some residential buildings and outbuildings near its southeast portion. Starting in the mid-1930s, the Property was used for agricultural and residential purposes. Light industrial use of the Property by GSSI started in the 1950s, with the main shop/office building constructed in the 1970s. Most of the remaining structures were constructed in the 1990s. On-site operations included heavy-equipment maintenance and repair, power washing, sandblasting, equipment storage, and administrative business operations. All structures were removed from the Property by 2010.

The owner completed a remedial investigation and feasibility study for the Property. Soil and groundwater impacts on the Property were identified. Impacted soil was removed at four locations on the Property. Groundwater impacts identified near the location of a former diesel underground storage tank (UST) have recently been treated using in situ injections.

GROUNDWATER REMEDIAL ACTION

From August 10 to 12, 2015, in situ groundwater treatment by injection of an oxidizing agent was applied to the contaminant plume, located in the vicinity of the former diesel UST. In total, there were 18 injection points covering an area of 1,800 square feet near the former diesel UST. The injection points were advanced to a depth of 26 feet, with the treatment interval from 12 to 26 feet. Regenesis Advanced Oxygen Release Compound (ORC Advanced®) were used to

enhance bioremediation of hydrocarbon contamination in groundwater. It is anticipated that one round of injections will be necessary. It is likely that after the injections, multiple years will be required for all groundwater contamination to reach levels below Model Toxics Control Act (MTCA) cleanup levels (CULs).

GROUNDWATER MONITORING PLAN

Groundwater monitoring will be conducted at and downgradient of two source areas (i.e., the former diesel UST and the former fill area) at conditional points of compliance. The diesel UST area has been established as MW02, MW03, and MW07, and the fill area as MW04, MW05, and MW06 (see the attached figure). The conditional points of compliance have been established to confirm that contaminant concentrations are stable or declining in both areas (see the attached figure).

Groundwater samples will be collected using industry standard, low-flow purge methodology, consistent with the attached Sampling and Analysis Plan. The groundwater samples will be analyzed for indicator hazardous substances: diesel-range organics (DRO), residual-range organics (RRO; e.g., lube-oil-range organics), and arsenic. Dissolved oxygen and the redox potential parameters in groundwater will be monitored to evaluate the aerobic conditions and the effectiveness of the in situ injections near the former diesel UST.

GROUNDWATER MONITORING SCHEDULE

Initially, groundwater monitoring will be conducted on a quarterly basis in the three wells associated with each area of the site (former diesel UST and fill areas). Ecology will consider reducing the monitoring frequency if stable or declining trends are observed. If the combined concentrations of DRO and RRO hydrocarbons[1] and arsenic in groundwater in either area are below the MTCA Method A CUL (500 micrograms per liter [ug/L] and 5.0 ug/L, respectfully) for four consecutive quarterly monitoring events, then groundwater compliance monitoring in that area will be discontinued. Quarterly samples will be collected in April, July, October, and January. The first scheduled sampling event is January 2016.

Depth-to-water measurements will be taken in all six monitoring wells to assess groundwater flow direction and gradient.

GROUNDWATER REPORTING

After each groundwater monitoring event, a brief letter report will be prepared and submitted to Ecology approximately 30 days after receipt of the final data from the analytical laboratory.

[1] T. Nord. Determining compliance with Method A cleanup levels for diesel and heavy oil. Implementation memorandum #4. Publication 04-09-086. Washington State Department of Ecology. June 2004.

The letter reports will summarize the groundwater analytical results and show the potentiometric groundwater surface. The analytical data will be uploaded to Ecology's Environmental Information Management database system.

If you have any questions regarding this proposed groundwater CMP, please contact me.

Sincerely,

Maul Foster & Alongi, Inc.

Alan R. Hughes, LG
Senior Geologist

Attachment: Figure
Sampling and Analysis Plan

cc: Cindy Schmid, George Schmid & Sons, Inc.

FIGURE

Figure
Monitoring Well Locations and Potentiometric Groundwater Surface (July 2014)

32nd Street Property
George Schmid & Sons, Inc.
Washougal, Washington

Legend

- Monitoring Well Location (with Groundwater Elevation)
- Abandoned Monitoring Well Location (with Groundwater Elevation)
- Groundwater Elevation Contour (in feet NAVD88)
- Former Diesel UST Pit
- Subject Property
- Groundwater Flow Direction

Note: Potentiometric surface was generated when monitoring well MW01 was still present.

0 25 50
Foot

Source: Aerial photograph obtained from Esri ArcGIS Online

MAUL FOSTER ALONGI
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ATTACHMENT

SAMPLING AND ANALYSIS PLAN

SAMPLING AND ANALYSIS PLAN

32ND STREET PROPERTY

Prepared for

GEORGE SCHMID & SONS, INC.

WASHOUGAL, WASHINGTON

Revised January 21, 2016

Project No. 0564.02.04

Prepared by

Maul Foster & Alongi, Inc.

400 E Mill Plain Blvd., Suite 400, Vancouver WA 98660

MAUL
FOSTER
ALONGI

SAMPLING AND ANALYSIS PLAN
32ND STREET PROPERTY

The material and data in this plan were prepared under the supervision and direction of the undersigned.

MAUL FOSTER & ALONGI, INC.

Emily Hess, GIT
Staff Geologist

Alan R. Hughes, LG
Senior Geologist

CONTENTS

TABLES AND ILLUSTRATIONS

FOLLOWING PLAN:

TABLES

ACRONYMS AND ABBREVIATIONS

COC	chain of custody
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
FSDS	field sampling data sheet
GSSI	George Schmid & Sons, Inc.
IDW	investigation-derived waste
IHS	indicator hazardous substance
LCS	laboratory control sample
MFA	Maul Foster & Alongi, Inc.
MS/MSD	matrix spike/matrix spike duplicate
MTCA	Model Toxics Control Act
NWTPH	Northwest Total Petroleum Hydrocarbons
ORP	oxygen-reduction potential
Property	1411 32nd Street, Washougal, Washington
QA	quality assurance
QC	quality control
RRO	residual-range organics
SA	Specialty Analytical, Inc.
SAP	sampling and analysis plan
SDG	sample delivery group
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
WAC	Washington Administrative Code

1 INTRODUCTION

Maul Foster & Alongi, Inc. (MFA) has prepared this sampling and analysis plan (SAP) consistent with the requirements of Washington Administrative Code (WAC) 173-340-820 for George Schmid & Sons, Inc. (GSSI) to guide the collection of groundwater samples during monitoring activities for the 32nd Street Shop/Office property, 1411 32nd Street, Washougal, Washington (the Property). The Property historically was used by GSSI for heavy equipment maintenance and repair, power washing, sandblasting, equipment storage, and administrative business operations. GSSI operated on the Property from approximately the 1950s until early 2000. The Property is owned by the Schmid Family Limited Partnership I.

The Property is listed on Washington State Department of Ecology's (Ecology) database as Facility Site ID 14687 and is site number SW1430 of Ecology's Voluntary Cleanup Program. GSSI completed a remedial action for soil on the Property in March 2015 and in situ injections for groundwater treatment in August 2015. This SAP describes procedures for collection, preservation, and analysis of groundwater samples at the Property for compliance monitoring.

This SAP has been prepared consistent with the requirements of Ecology's Guidance on Sampling and Data Analysis Methods (Ecology, 1995) and Guidance for Preparing Quality Assurance Project Plans for Environmental Studies (Ecology, 2004), and the 1993 Model Toxics Control Act (MTCA) (WAC Chapter 173-340).

1.1 Compliance Monitoring Objectives

The primary objective of this SAP is to establish procedures for the collection of data of sufficient quality to monitor groundwater quality at two areas of the Property—the fill area and the former diesel underground storage tank (UST) area. Indicator hazardous substances (IHSs) in groundwater are diesel-range organics (DRO) and residual-range organics (RRO; e.g., lube-oil-range organics) near the former diesel UST, and arsenic beneath the fill material.

This SAP is meant to facilitate collection of reliable data about physical, environmental, and chemical conditions at the Property in support of monitoring remedial actions implemented at the Property to protect human health and the environment. It provides a consistent set of sampling and analysis procedures. If an unforeseen change in methodology requires modification to this SAP, an addendum may be prepared that describes the specific revision(s). Procedures are provided that will direct the investigation process so that the following conditions are met:

- Data collected are of high quality, representative, and verifiable.
- Use of resources is cost effective.
- Data can be used by GSSI and Ecology to support groundwater compliance monitoring.

This SAP describes methods for sampling groundwater, decontaminating equipment, and managing investigation-derived waste (IDW). It also includes procedures for collecting, analyzing, evaluating, and reporting usable data. This SAP includes all currently foreseen methods for analysis of groundwater samples, as well as quality assurance (QA) procedures for field activities, sampling QA and quality control (QC) procedures, and data validation.

2 ACCESS AND SITE PREPARATION

MFA personnel will notify GSSI, the Schmid Limited Family Partnership I, and the Ecology project manager a minimum of 48 hours before beginning each sampling event at the Property. Access to the Property is allowed at all reasonable times for the purpose of overseeing work performed.

3 GROUNDWATER SAMPLING

3.1 Procedure

Sampling methods will be designed to collect samples representative of in situ groundwater. Groundwater samples will be collected from monitoring wells according to standard low-flow sampling techniques. Groundwater samples will be collected from the middle of the screened interval or, if the water level is below the top of the screen, from the middle of the water column. Table 1 provides information pertaining to the monitoring well locations and the corresponding measuring point elevation, depth to bottom, and approximate screened interval. Groundwater samples will be extracted using a peristaltic pump and dedicated tubing if head levels allow use of a suction lift pump. In the event that the head level falls below the peristaltic pump capability, a double-check valve disposable bailer will be used for purging and sample collection.

Before collection of groundwater samples, the water level will be measured and the well will be purged. Each well will be purged prior to sampling, using a peristaltic pump with new, disposable tubing at a flow rate of 0.1 to 0.4 liter per minute. Water levels will be monitored regularly during purging, and drawdown will be kept at a minimum (<0.3 foot), as applicable. Note that monitoring well MW03 has been purged dry in the past because of a slow recharge rate. If wells are purged dry, they will be sampled within 24 hours, during which time they will be allowed to recharge.

Groundwater parameters will be measured periodically (every five to ten minutes) during purging to evaluate conditions. The following water quality parameters will be measured with a multiparameter, handheld meter and will be recorded: temperature, pH, specific conductance, dissolved oxygen, oxygen-reduction potential (ORP), and turbidity. Groundwater samples will be collected after consecutive readings indicate that the system is stable, in that the parameters have stabilized as follows: temperature within 0.1 degree Celsius; pH within 0.1 standard units; specific conductance, dissolved oxygen, and ORP within 10 percent; and turbidity below 10 nephelometric turbidity units.

Groundwater will be pumped directly into laboratory-supplied containers specific to the analysis required.

3.2 Nomenclature

Groundwater samples will be labeled with a prefix to indicate the location identification number and a six-digit date. For example, a groundwater sample collected from MW03 with a screen from October 18, 2015, will have the sample number MW03-101815.

Duplicate groundwater samples will replace the location number with "DUP" and the sample will have the same sample time as the primary sample. A duplicate sample of the abovementioned sample would appear as MWDUP-101815.

Samples will be documented on a field sampling data sheet (FSDS) (see the appendix); documentation will include the equipment used, water parameters (i.e., temperature, specific conductance, pH, dissolved oxygen, redox potential, and turbidity), water levels, and the amount of water purged before sampling.

3.3 Laboratory Analyses for Groundwater Samples

Table 2 provides information pertaining to groundwater sampling and analysis methods and requirements. Groundwater samples from the six monitoring wells will be analyzed using the following methods:

- DRO and RRO by the Northwest Total Petroleum Hydrocarbons (NWTPH) Method NWTPH-Dx
- Total arsenic by U.S. Environmental Protection Agency (USEPA) Method 6020

3.4 Equipment Cleaning and Decontamination

Decontamination fluids will be transferred to 55-gallon drums approved by the Washington State Department of Transportation and will be managed according to the procedures outlined in Section 3.5. Monitoring equipment will be decontaminated on site and between sampling locations. Decontamination will consist of the following:

- Distilled-water rinse
- Nonphosphate detergent wash, consisting of a dilute mixture of Liqui-Nox and distilled water
- Final distilled-water rinse

Before the electronic meter used to measure water levels is used at the Property it will be decontaminated as described above, including the section of water-level line that will enter the well. The portion of the water-level detector that enters the water (the tip) will also be decontaminated after use in each well.

3.5 Management of Investigation-Derived Waste

IDW will include purged groundwater and decontamination fluids. IDW generated during monitoring well sampling will be contained in 55-gallon drums in a designated, secured area on the Property, pending analytical results. Analytical data from the groundwater sampling activities previously described will be used for waste characterization. Each drum will be properly labeled with a waste management drum number, the source of the water, the volume of material, and the date of collection. After the work is complete and analytical results are received, liquids will be evaluated and disposed of appropriately based on the analytical results from the groundwater samples.

4 ANALYTICAL METHODS

4.1 Chemicals of Interest

The following chemicals have been identified as IHSs: DRO and RRO in the former diesel UST area and arsenic in the fill area.

4.2 Laboratory Test Methods and Reporting Limits

In accordance with the QA/QC requirements set forth in this SAP, Specialty Analytical, Inc. (SA) of Clackamas, Oregon, will perform the following analyses using the methods specified: DRO and RRO by NWTPH-Dx and arsenic by USEPA Method 6020.

4.3 Quality Assurance and Quality Control Samples Generated in Field

To ensure that field samples and quantitative field measurements are representative of the media collected and conditions being measured, sample collection and measurement methods will follow procedures documented in Section 3. QC samples collected in the field include field duplicates. Duplicate field samples will be submitted blind to the laboratory. Field QC samples will be clearly identified on the FSDSs. Field duplicates indicate overall precision in both field and laboratory procedures.

Field equipment rinsate blanks will not be required, as all samples will be collected using dedicated, single-use equipment. Trip blanks will not be required because analytes do not include volatile organic compounds.

4.4 Laboratory Operations

In the laboratory, QC samples will include matrix spike/matrix spike duplicate (MS/MSD) samples, laboratory control samples (LCSs), surrogate spike samples, and method blanks, as well as other QC samples and procedures as required by the individual methods.

4.5 Sample Containers, Preservation, and Handling

4.5.1 Preservation

Groundwater samples for DRO and RRO will be collected in unpreserved, 1-liter, amber glass bottles. Water samples for arsenic analysis will be collected in sulfuric-acid-preserved, 500-milliliter, polyethylene bottles. The samples will be stored in iced coolers at 4 degrees ±2 Celsius. Sample containers will be supplied by the analytical laboratory.

4.5.2 Sample Packaging and Shipping

Samples will be stored in iced shipping containers or a refrigerator designated for samples, and then transported by courier to SA in iced shipping containers.

4.6 Sample Custody

Sample custody will be tracked from point of origin through final analysis and disposal, using a chain-of-custody (COC) form, which will be filled out with the appropriate sample and analytical information as soon as possible after samples are collected. For purposes of this work, custody will be defined as follows:

- In plain view of MFA field representatives
- Inside a cooler that is in plain view of MFA field representatives
- Inside any locked space such as a cooler, refrigerator (in MFA office), or MFA or SA vehicle to which the MFA or SA representatives have the only available key(s)

The following items will be recorded on the COC form:

- Project name
- Project number
- MFA project manager
- Sampler name(s)
- Sample number, date and time collected, media, number of bottles submitted
- Requested analyses for each sample
- Type of data package required
- Turnaround requirements
- Signature, printed name, organization name, date, and time of transfer of all persons having custody of samples

- Additional instructions or considerations that would affect analysis (e.g., nonaqueous layers, archiving)

Persons in possession of the samples will be required to sign and date the COC form whenever samples are transferred between individuals or organizations. The COC will be included in the shipping containers with the samples. The laboratory will implement its in-house custody procedures, which begin when sample custody is transferred to laboratory personnel.

At the analytical laboratory, a designated sample custodian will accept custody of the received samples and will verify that the COC form matches the samples received. The shipping container or set of containers is given a laboratory identification number, and each sample is assigned a unique sequential identification number that includes the original shipping container identification number.

4.7 Field Instrumentation

Field instruments will be used during the investigations. The following field equipment will require calibration before use and periodically during sampling activities:

- pH meter
- Conductivity meter
- Dissolved-oxygen meter
- ORP meter
- Turbidity meter
- Thermometer
- Electronic water-level probe

Field-instrument calibration and preventive maintenance will follow the manufacturers' guidelines, and any deviation from the established guidelines will be documented. Generally, field instruments will be calibrated daily before work begins. Field personnel may decide to calibrate more than once a day if inconsistent or unusual readings occur, or if conditions warrant more frequent calibration. Calibration activities will be recorded in instrument-specific logbooks or field notebooks.

4.7.1 Field Calibration

Calibration procedures, calibration frequency, and standards for measurement will be conducted according to manufacturers' guidelines. To ensure that field instruments are properly calibrated and remain operable, the following procedures will be used, at a minimum:

- Operation, maintenance, and calibration will be performed in accordance with the instrument manufacturers' specifications.
- All standards used to calibrate field instruments will meet the minimum requirements for source and purity recommended in the equipment operation manual. Standards will be used before any expiration dates that may be printed on the bottle.

- Acceptable criteria for calibration will be based on the limits set in the operations manual.
- All users of the equipment will be trained in the proper calibration and operation of the instrument.
- Field instruments will be inspected before they are taken to the Property.
- Field instruments will be calibrated at the start and end of each work period. Meters will be recalibrated, as necessary, during the work period.
- Calibration procedures (including time, standards used, and calibration results) will be recorded in a field notebook. Although not reviewed during routine QA/QC checks, the data will be available if problems are encountered.

4.7.2 Preventive Maintenance

Preventive maintenance of field instruments and equipment will follow the operations manuals. A schedule of preventive-maintenance activities will be followed to minimize downtime and ensure the accuracy of measurement systems.

4.8 Laboratory Instrumentation

Specific laboratory instrument calibration procedures, frequency of calibration, and calibration standards will be prepared according to the method requirements as developed by the USEPA, following procedures presented in SW-846 (USEPA, 1986).

4.9 Laboratory Calibration and Preventive Maintenance

The laboratory calibration ranges specified in SW-846 (USEPA, 1986) will be followed.

Preventive maintenance of laboratory equipment will be the responsibility of the laboratory personnel and analysts. This maintenance includes routine care and cleaning of instruments and inspection and monitoring of carrier gases, solvents, and glassware used in analyses. The preventive-maintenance approach for specific equipment will follow the manufacturers' specifications and good laboratory practices.

Precision and accuracy data will be examined for trends and excursions beyond control limits to determine evidence of instrument malfunction. Maintenance will be performed when an instrument begins to change, as indicated by the degradation of peak resolution, shift in calibration curves, decrease in sensitivity, or failure to meet any of the QC criteria.

4.10 Laboratory Quality Assurance and Quality Control Checks

USEPA Method 6020 and NWTPH-Dx include specific instructions for the analysis of QC samples and the completion of QC procedures during sample analysis. These QC samples and procedures verify that the instrument is calibrated properly and remains in calibration throughout the analytical sequence, and that the sample preparation procedures have been effective and have not introduced

contaminants into the samples. Additional QC samples are used to identify and quantify positive or negative interference caused by the sample matrix. The following laboratory QC procedures are required for most analytical procedures:

- **Calibration Verification**—Initial calibration of instruments will be performed at the start of the project or sample run, as required, and when any ongoing calibration does not meet control criteria. The number of points used in the initial calibration is defined in the analytical method. Continuing calibration will be performed as specified in the analytical method to track instrument performance. If a continuing calibration does not meet control limits, analysis of project samples will be suspended until the source of the control failure is either eliminated or reduced to within control specifications. Any project samples analyzed while the instrument was outside of control limits will be reanalyzed.
- **Method Blanks**—Method blanks are used to assess possible laboratory contamination of samples associated with all stages of preparation and analysis of samples and extracts. The laboratory will not apply blank corrections to the original data. A minimum of one method blank will be analyzed for every sample extraction group, or one for every 20 samples, whichever is more frequent.
- **MS/MSD Samples**—MS samples are analyzed to assess the matrix effects on the accuracy of analytical measurements. A minimum of one MS will be analyzed for each sample delivery group (SDG), or one for every 20 samples, whichever is more frequent. Because the spike is a duplicate sample, it measures the quality of laboratory preparatory techniques and the heterogeneity of the sample.
- **Surrogate Spike Compounds**—Surrogate spikes are used to evaluate the recovery of an analyte from individual samples. All project samples to be analyzed for organic compounds will be spiked with appropriate surrogate compounds as defined in the analysis method. Recoveries determined using these surrogate compounds will be reported by the laboratory; however, the laboratory will not correct sample results using these recoveries.
- **LCSs**—Although not required by the referenced methods, the laboratory will analyze LCSs. One LCS will be analyzed for every SDG, or one for every 20 samples, whichever is more frequent. The source of the LCS must be included in the data package.

4.11 Field Quality Control

Field duplicates are collected to measure sampling and laboratory precision. Field duplicates will be collected for groundwater samples collected from monitoring wells, and will be prepared by the sampling personnel in the field and submitted to the laboratory. At least one duplicate sample will be collected during each sampling event.

4.12 Data Reduction, Validation, and Reporting

The analytical laboratory will submit analytical data packages that include laboratory QA/QC results to permit independent and conclusive determination of data quality. Data quality will be determined

by MFA, using the data evaluation procedures described in this section. The results of the MFA evaluation will be used to determine if the project data quality objectives have been met.

4.12.1 Field Data Reduction

Daily internal QC checks will be performed for field activities. Checks will consist of reviewing field notes to confirm that the specified measurements, calibrations, and procedures are being followed. The need for corrective action will be assessed on an ongoing basis, in consultation with the project manager.

4.12.2 Laboratory Evaluation

Initial data reduction, evaluation, and reporting at the analytical laboratory will be carried out as described in USEPA SW-846 manuals for organic analyses (USEPA, 1986), as appropriate. Additional laboratory data qualifiers may be defined and reported to further explain the laboratory's QC concerns about a particular sample result. All additional data qualifiers will be defined in the laboratory's case narrative reports associated with each case.

4.12.3 Data Deliverables

Laboratory data deliverables are listed below. Electronic deliverables will contain the same data that are presented in the hard-copy report.

- Transmittal cover letter
- Case narrative
- Analytical results
- COC
- Surrogate recoveries
- Method blank results
- MS/MSD results
- Laboratory duplicate results

4.12.4 MFA Evaluation

4.12.4.1 Data Quality Assurance and Quality Control Review

MFA will evaluate the laboratory data for precision, completeness, accuracy, and compliance with the analytical method. MFA will review data and assign data qualifiers to sample results, following applicable sections of the USEPA procedures for organics data review (USEPA, 1986, 1994).

Data qualifiers, as defined by the USEPA, are used to classify sample data according to their conformance to QC requirements. The most common qualifiers are listed below:

- J—Estimate, qualitatively correct but quantitatively suspect.

- R—Reject, data not suitable for any purpose.
- U—Not detected at a specified reporting limit.

Poor surrogate recovery, blank contamination, or calibration problems, among other things, can cause the sample data to be qualified. Whenever sample data are qualified, the reasons for the qualification will be stated in the data evaluation report.

QC criteria not defined in the guidelines for evaluating analytical data are adopted, where appropriate, from the analytical method.

The following information will be reviewed during data evaluation, as applicable:

- Sampling locations and blind sample numbers
- Sampling dates
- Requested analysis
- COC documentation
- Sample preservation
- Holding times
- Method blanks
- Surrogate recoveries
- MS/MSD results
- Laboratory duplicates (if analyzed)
- Field duplicates
- LCSs
- Method reporting limits above requested levels
- Any additional comments or difficulties reported by the laboratory
- Overall assessment

The results of the data evaluation review will be summarized for each data package. Data qualifiers will be assigned to sample results on the basis of USEPA guidelines, as applicable.

4.12.4.2 Data Management and Reduction

MFA uses EQuIS to manage all laboratory data. The laboratory will provide the analytical results in electronic EQuIS-deliverable format. Following data evaluation, data qualifiers will be entered into the EQuIS database.

Data may be reduced to summarize particular data sets and to aid interpretation of the results. Statistical analyses may also be applied to results. Data reduction QC checks will be performed on all hand-entered data, any calculations, and any data graphically displayed. Data may be further reduced and managed using one or more of the following computer software applications:

- Microsoft® Excel® (spreadsheet)
- EQuIS (database)

- AutoCad and/or Arc GIS (graphics)
- USEPA ProUCL (statistical software)

5 REPORTING

After the data are received, MFA will generate a data report, which will summarize and screen the data against the MTCA Method A cleanup levels. Estimates of the groundwater potentiometric surface and extent of groundwater contamination will be provided, as well as work-product documentation (e.g., data validation reports).

Consistent with Ecology's Policy 840, the groundwater analytical data will be uploaded to Ecology's environmental information management system.

LIMITATIONS

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

REFERENCES

Ecology. 1995. Guidance on sampling and data analysis methods. Publication No. 94-49. Washington State Department of Ecology Toxics Cleanup Program. January.

Ecology. 2004. Guidance for preparing quality assurance project plans for environmental studies. Publication No. 04-03-030. Washington State Department of Ecology. July.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA 530/SW-846. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).

USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. EPA 540/R-94/013. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. February.

TABLES

Table 1
Monitoring Well Summary
32nd Street Property
Washougal, Washington

Monitoring Well	Measuring Point Elevation (ft NAVD)	Depth to Bottom[a] (ft MPE)	Approximate Screened Interval (ft MPE)
Former Diesel UST Area			
MW02	88.88	28.07	17.75-27.75
MW03	87.74	32.85	22.75-32.75
MW07	65.97	19.29	9-19
Fill Area			
MW04	86.74	29.78	19.5-29.5
MW05	63.30	18.77	8.5-18.5
MW06	61.06	17.95	7.75-17.75

NOTES:

ft MPE = feet below measuring point elevation.

ft NAVD = in feet North American Vertical Datum of 1988.

UST = underground storage tank.

[a]Depth-to-bottom measurements recorded on September 16, 2015, for MW02, MW03, and MW07 and on March 19, 2014, for MW04, MW05, and MW06.

Table 2
Sample Analysis, Handling Summary, and Reporting Limits
32nd Street Property
Washougal, Washington

Analyte	Analytical Method	Suggested Volume	Container	Preservative	Holding Time from Collection	Estimated Number of Samples per Sampling Event	Estimated Number of Field Duplicates per Sampling Event	Method Reporting Limit
Arsenic	USEPA 6020	500 ml	polyethylene	HNO_3 to pH<2, and Cool, 4°C	Six months	6	1	1 ug/L
DRO and RRO	NWTPH-Dx	1000 ml	amber glass	Cool, 4°C	Seven days	6	1	200 ug/L

NOTES:
Number of samples may increase or decrease, based on field observations and screening data.
°C = degrees Celsius.
DRO = diesel-range organics.
HNO_3 = nitric acid.
ml = milliliter.
NWTPH = Northwest Total Petroleum Hydrocarbons.
RRO = residual-range organics.
ug/L = micrograms per liter.
USEPA = U.S. Environmental Protection Agency.

APPENDIX

FIELD SAMPLING DATA SHEET FORM

MAUL FOSTER ALONGI

Water Field Sampling Data Sheet

Client Name:			Sample Location:		
Project #:			Staff:		
Project Name:			Sampling Date:		
Sampling Event:			Sample Name:		
Sub Area:			Sample Depth:		
FSDS QA:					
Easting:		Northing:		TOC:	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT -Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (L)	WLE (ft)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters										

Purge and Sample Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	# of Bottles	Filtered (Yes/No)
	Groundwater		VOA-Glass		
			Amber-Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles		

General Sampling Comments

Signature