

REMEDIAL INVESTIGATION REPORT

Conducted On:

**THE FORMER BOULEVARD NURSERY SITE
CLEANUP SITE ID: 223 FACILITY/SITE ID: 3749
2021 BOULEVARD ROAD SOUTHEAST
OLYMPIA, WASHINGTON 98501**



**September 6, 2020
0820-03**

Prepared for:

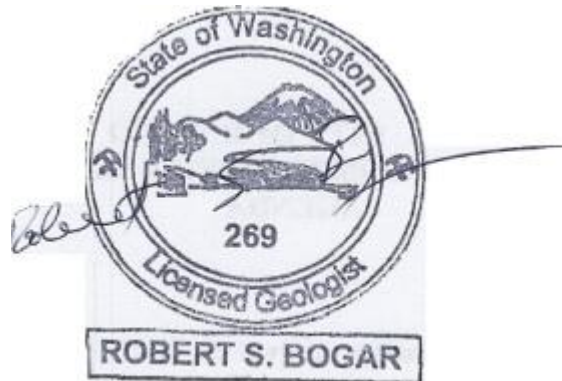
**BRIAN BARLOW
12833 VAIL CUT OFF ROAD SE
RAINIER, WASHINGTON 98576**



Prepared by:

W.W. Rutherford, MES
ADESA, LLC
197 Central Avenue E
Tenino, WA 98589

William W. Rutherford, MES





Introduction

ADESA has completed the site characterization/remedial investigation of the former Boulevard Nursery located at 2021 Boulevard Rd SE in Olympia, Washington 98501; Thurston County Parcel Number 12824411300 (Site). This Remedial Investigation Report was conducted for Brian Barlow to further assess the presence of organochlorine pesticide residue resulting from the historical use of the property as a small commercial plant nursery/greenhouse business from the 1950's to approximately 2008.

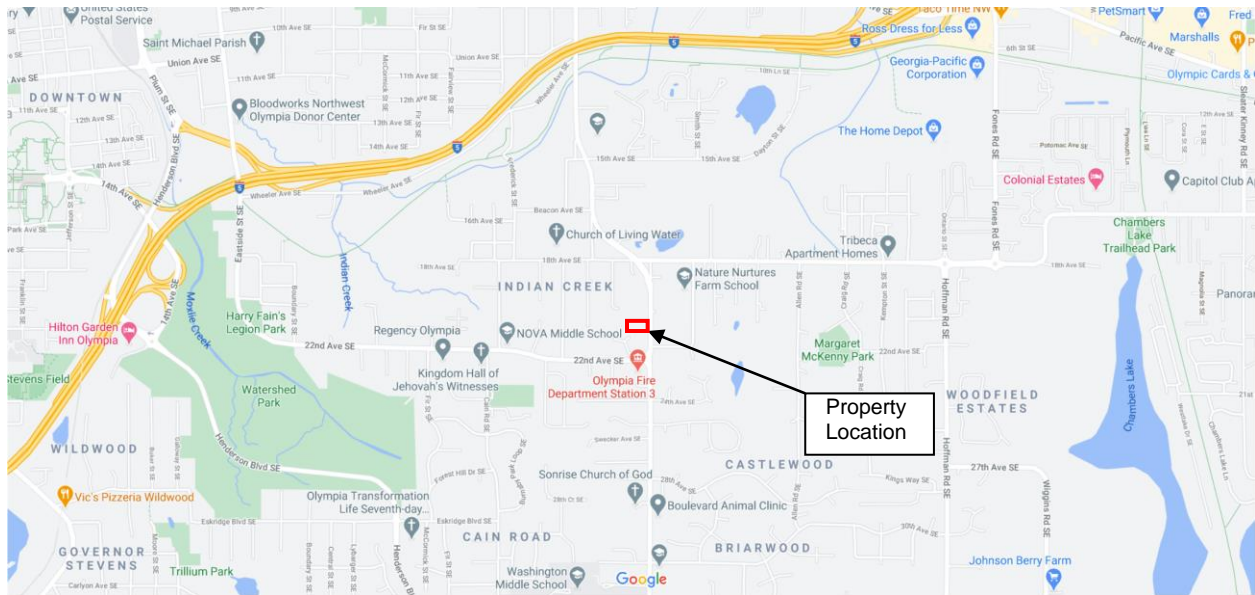


Figure 1.0: Property Location Map

Concentrations of organochlorine pesticides, all below the Washington Model Toxics Control Act (MTCOA) Method B Cleanup Levels, were previously identified on the Site during a Limited Phase II Environmental Site Assessment conducted by Hemphill, Green & Associates as part of a real estate due diligence investigation in 2009 (report attached).

Summary of Findings and Results

On August 24, 2020 ADESA personnel collected four shallow soil samples (S-4 to S-7; at depths of 12 inches) using dedicated stainless-steel hand tools and laboratory supplied 4oz jars. The sample locations were selected based on the historical layout of the greenhouse structures formerly located on the property and the locations of the soil samples collected by Hemphill, Green & Associates (HGA) in 2009 (S-1 to S-3). The results of the current investigation are discussed below:

- ✚ No obvious indications of a release of hazardous materials to the surface (stressed vegetation/staining) or significant dumping were observed.
- ✚ No groundwater was identified to the terminal depth of 12 inches below the surface.
- ✚ Four soil samples (S-4, S-5, S-6 and S-7) were collect from 12 inches below the surface and analyzed for pesticides by a certified laboratory using EPA Method 8081 (organochlorine pesticides).



- ✦ Sample S-4 contained detectable concentrations of the following analytes above the laboratory reporting limit but below the Washington State MTCA cleanup levels: dieldrin at 0.0344 mg/kg (MTCA Method B Cleanup Level 0.063 mg/kg); DDE at 0.0296 mg/kg (MTCA Method B Cleanup Level 2.9 mg/kg); DDD at 0.0116 mg/kg (MTCA Method B Cleanup Level 4.2 mg/kg); and DDT at 0.0337 mg/kg (MTCA Method B Cleanup Level 2.9 mg/kg). None of the remaining analytes were detected at concentrations in excess of the laboratory reporting limits.
- ✦ Sample S-5 contained detectable concentrations of the following analyte above the laboratory reporting limit but below the Washington State MTCA cleanup level: dieldrin at 0.0536 mg/kg (MTCA Method B Cleanup Level 0.063 mg/kg). None of the remaining analytes were detected at concentrations in excess of the laboratory reporting limits.
- ✦ Sample S-6 contained detectable concentrations of the following analytes above the laboratory reporting limit but below the Washington State MTCA cleanup levels: gamma-chlordane at 0.0101 mg/kg and alpha-chlordane at 0.0176 mg/kg (MTCA Method B Cleanup Level 2.9 mg/kg for total chlordane). None of the remaining analytes were detected at concentrations in excess of the laboratory reporting limits.
- ✦ Sample S-7 did not contain any of the analytes at concentrations exceeding their respective laboratory reporting limits.

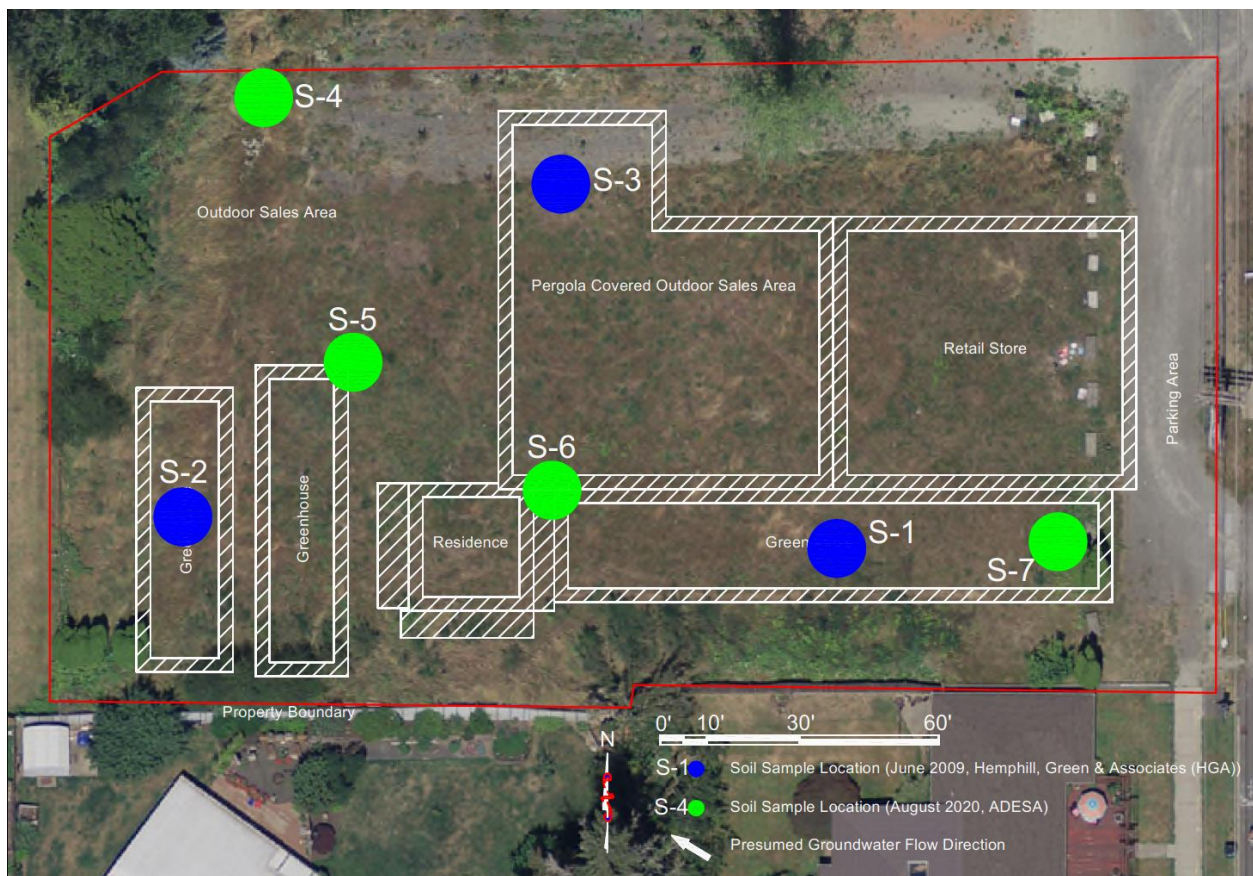


Figure 2.0: Sample Location Map



Conclusions

The results of the current and historical subsurface investigations suggest that the historical use of the Site as a small commercial plant nursery/greenhouse business has not resulted in a significant release of organochlorine pesticides to the surficial soil. To date, no samples collected from the Site have been analyzed to contain concentrations of organochlorine pesticides above the Washington State MTCA cleanup levels.

Recommendations

Based on the findings and conclusions presented in this Remedial Investigation Report and previous investigations, no further investigation is warranted regarding the historical use of pesticides at the Site. The client should petition for the removal of the property from the Washington State Department of Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL) based on the lack of evidence to suggest that the surficial soil has been significantly impacted.



Background

Available information from previous investigations suggests that the property contained a nursery/greenhouse business from the 1950's to approximately 2008 and was developed with several greenhouses and outdoor sales areas.

In June 2009, Hemphill, Green & Associates (HGA), conducted a Limited Phase II Environmental Assessment of the Site for West Coast Bank. HGA collected three soil samples (S-1, S-2 and S-3), at depths of 12 inches below the surface, from areas formerly associated with nursery operations for metals and pesticide analysis. None of the analytes were detected above their respective cleanup levels; however, it was determined at the time that there was insufficient evidence to conclude that the surface soil of the Site had not been significantly impacted by the historical pesticide use and the property was added to the Washington State Department of Ecology Confirmed and Suspected Contaminated Sites List (CSCSL). The results of the 2009 HGA investigation are summarized below:

Sample No	Sample Location	Pesticide	Detected Level (mg/kg)	CLARC* (mg/kg)
S-1	South Greenhouse	DDE	0.14	2.9
		DDD	0.064	4.2
		DDT	0.036	2.9
S-2	North Greenhouse	DDE	0.12	2.9
		dieldrin	0.038	0.063
		DDD	0.034	4.2
		DDT	0.014	2.9
S-3	Yard Area	Non Detected		

* CLARC soil Method B cleanup standard, carcinogen, direct contact, unrestricted land use.

Sample No	Sample Location	Metal	Detected Level (mg/kg)	Cleanup Standard *
S-1	South Greenhouse	arsenic	9.77	20
		barium	151	Not Listed
		cadmium	ND	2
		chromium	39.4	19 Cr ⁶⁺ / 2000 Cr ³⁺
		lead	28.5	250
		mercury	0.128	2
		selenium	ND	Not Listed
		silver	ND	Not Listed
S-2	North Greenhouse	arsenic	7.14	20
		barium	131	Not Listed
		cadmium	ND	2
		chromium	32.3	19 Cr ⁶⁺ / 2000 Cr ³⁺
		lead	17.3	250
		mercury	0.100	2
		selenium	ND	Not Listed
		silver	ND	Not Listed
S-3	Yard Area	arsenic	8.07	20
		barium	205	Not Listed
		cadmium	ND	2
		chromium	37.5	19 Cr ⁶⁺ / 2000 Cr ³⁺
		lead	145	250
		mercury	0.167	2
		selenium	ND	Not Listed
		silver	ND	Not Listed

* Washington State Method A Cleanup Levels, unrestricted land use (see Appendix B)

The release is believed to have been a result of the legal use/application of the pesticides as a routine part of the nursery operation from the 1950's and until as late as 1972 (for DDT and consequently DDD and DDE, which are DDT manufacturing derived contaminants), 1974 (for Dieldrin; still permitted for termite control until 1987) and 1988 (for Chlordane; banned for food crops in 1978 but still allowed for dipping the roots/tops of non-food plants until 1988) when the pesticides identified on the Site were banned or partially banned in the USA. No specific information regarding the historical use/storage of the pesticides has been identified or reported to the current property owner.

Site Characteristics and Subsurface Conditions:

Site Data	Details	Source
Address	2021 Boulevard Rd Southeast Olympia, Washington, 98501	Thurston County Assessor
Latitude/Longitude	Latitude: 47.03043 / Longitude: -122.86577	EIM Map
Parcel Number	12824411300	Thurston County Assessor
Property Size	0.9 acres	Thurston County Assessor



Site Data	Details	Source
Soil Type	Yelm fine sandy loam, 0 to 3% slopes	USDA/NRCS Web Soil Survey
Depth to groundwater and presumed flow direction	A static water level of 27 feet was reported in a data log filed with the Washington State Department of Ecology for a well located approximately 300-feet to the south. Based on the topography, groundwater is anticipated to flow to the west-northwest.	WA State Department of Ecology for wells located in the vicinity of the Property/USGS Map
Area wide soil contamination	None Reported	Cleanup site databases maintained by the WA State Department of Ecology
Current Zoning	SINGLE-FAMILY RESIDENTIAL 4-8	City of Olympia Online Zoning Map
Current Use	Undeveloped	Observations

Current Remedial Investigation Details

On August 24, 2020 ADESA personnel collected four shallow soil samples (S-4 to S-7; at depths of 12 inches). The sample locations were selected based on the historical layout of the greenhouse structures formerly located on the property and the locations of the soil samples collected by Hemphill, Green & Associates (HGA) in 2009 (S-1 to S-3). See Appendix A for sample location maps.

Soil samples were collected from each location using dedicated stainless-steel hand tools and placed in labeled laboratory supplied four-ounce glass jars with Teflon-lined lids. The samples were placed in a cooler on ice immediately after collection and were transported by ADESA, LLC to Libby Environmental, Inc laboratory in Olympia, Washington.

Cumulative Results of Laboratory Analysis of Soil Samples

All four soil samples were analyzed for organochlorine pesticide concentrations by US EPA Method 8081 and the results were compared to Washington State Department of Ecology Model Toxics Control Act (MTCA) Method B Cleanup Levels (WDOE, 2013). The laboratory derived concentrations of analytes detected above the laboratory reporting limits are provided in the table below; see Appendix B for the full laboratory report including a list of all analytes included in the EPA Method 8081 analysis.

Sample ID	S-1 ^{b,d}	S-2 ^{b,d}	S-3 ^{b,d}	S-4	S-5	S-6	S-7	MTCA Method B CLARC ^a
Analytes								/Table 749-2
Dieldrin	nd	0.038	nd	0.0344	0.0536	<0.00995	<0.0107	0.063/0.17
4,4'-DDE	0.14	0.12	nd	0.0296	<0.00927	<0.00995	<0.0107	2.9/1
4,4'-DDD	0.064	0.034	nd	0.0116	<0.00927	<0.00995	<0.0107	4.2/1
4,4'-DDT	0.036	0.014	nd	0.0337	<0.00927	<0.00995	<0.0107	2.9/1
gamma-Chlordane	nd	nd	nd	<0.00945	<0.00927	0.0101	<0.0107	2.9 ^c /1
alpha-Chlordane	nd	nd	nd	<0.00945	<0.00927	0.0176	<0.0107	2.9 ^c /1

*Sample results and MTCA Method B/MTCA Table 749-2 concentrations presented in mg/kg

^a Based on CLARC data tables for Method B Cancer (Eq. 740-2) presented in mg/kg

^b Results reported for samples collected during the 2009 HGA Limited Phase II Environmental Site Assessment

^c MTCA Method B Cleanup Level for total chlordane

^d nd = not detected above the laboratory reporting limit; laboratory reporting limits not provided in HGA report as provided by the Washington State Department of Ecology



Conceptual Site Model and Simplified Terrestrial Ecological Evaluation

The release of pesticide contaminants of concern (DDT, DDE, DDD, Dieldrin and Chlordane) on the Site is believed to be the result of their legal use/application as a routine part of the nursery operation from the 1950's and until as late as 1972 (for DDT and consequently DDD and DDE, which are DDT manufacturing derived contaminants), 1974 (for Dieldrin; still permitted for termite control until 1987) and 1988 (for Chlordane; banned for food crops in 1978 but still allowed for dipping the roots/tops of non-food plants until 1988) when the pesticides identified on the Site were banned or partially banned in the USA. No specific information regarding the historical use/storage of the pesticides has been identified or reported to the current property owner.

The fate and transport for each of the identified contaminants of concern at the Site are similar. DDT, DDE, DDD, Dieldrin and Chlordane are hydrophobic and tend to adsorb strongly to soil particles and are thus, when present, likely to be found in near surface soil, dust and/or sediments in water bodies, where they can persist for many years. The highest concentrations of these pesticides are anticipated in near surface soil, adjacent to their point of use. The USDA NRCS soil type identified for the Site is Yelm fine sandy loam, 0 to 3% slopes, which is reported as moderately well-drained. No areas of current or historical stormwater control features, drainage ditches, ponds/wetland areas or direct routes to surface water bodies are known to exist on the Site where concentrations of pesticides would be likely to accumulate; stormwater on the Site appears to infiltrate directly to the subsurface. A static water level of 27 feet was reported in a data log filed with the Washington State Department of Ecology for a resource protection well located approximately 300-feet to the south; based on the topography, groundwater is anticipated to flow to the west-northwest. Based on the lack depth to groundwater reported in the area and the lack of pesticide concentrations in surficial soils in excess of the MTCA Method B (CLARC data tables for Method B Cancer), groundwater is not considered likely to have been impacted by the use of pesticides on the Site. To date, no samples collected from the Site have been analyzed to contain concentrations of organochlorine pesticides above the Washington State MTCA cleanup levels. No priority chemicals of ecological concern listed in MTCA Table 749-2 at or above the concentrations provided in the table, have been identified on the Site.

The Site is currently zoned residential and although no current redevelopment plans are in place, the Site will likely be developed with single family residences requiring re-grading and the importation of top-soil fill material. Shallow groundwater beneath the Site is not used as a drinking water source. If developed the Site would be connected to the municipal water system (City of Olympia) and regional sanitary sewer system (LOTT Clean Water Alliance).

Exposure pathways primarily consist of incidental ingestion, inhalation of particulates, and dermal contact with surficial soil impacted by the contaminants of concern at concentrations below their respective MTCA Method B Cleanup/Screening Levels.

Potential human receptors may include utility/construction workers, maintenance workers and residents. Potential ecological receptors may include plants, mammals, birds, soil invertebrates and amphibians that live and/or forage at the Site and may be exposed to pesticides in the surface soil, sediments, and dietary prey items present at the Site. ADESA conducted a simplified Terrestrial Ecological Evaluation of the Site as set forth in WAC 173-340-7492 which determined that no further evaluation was necessary to conclude that the Site does not pose a substantial threat of significant adverse effects to terrestrial ecological receptors. This determination was based on contaminate analysis; no contaminant listed in MTCA Table 749-2



is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

Conclusions

The results of the current and historical subsurface investigations suggest that the historical use of the Site as a small commercial plant nursery/greenhouse business has not resulted in a significant release of organochlorine pesticides to the surficial soil. To date, no samples collected from the Site have been analyzed to contain concentrations of organochlorine pesticides above the Washington State MTCA cleanup levels.

Recommendations

Based on the findings and conclusions presented in this Remedial Investigation Report and previous investigations, no further investigation is warranted regarding the historical use of pesticides at the Site. The client should petition for the removal of the property from the Washington State Department of Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL) based on the lack of evidence to suggest that the surficial soil has been significantly impacted.



References

Hemphill, Green & Associates (HGA). "Limited Phase II Environmental Site Assessment: Boulevard Nursery 2021 Boulevard Road SE Olympia, Washington 98501". Prepared for West Coast Bank. June 10, 2009.

NRCS, Web Soil Survey: USDA. Soil Survey of Thurston County. <http://www.or.nrcs.usda.gov/>. August 2020.

Thurston County Assessors Online/Hardcopy Data. All property records for the Site and limited records for adjoining properties. August 2020.

Washington State Department of Ecology. 1995. Guidance on Sampling and Data Analysis Methods – Publication 94-49. January.

Washington Administrative Code 173-340, Washington State Model Toxics Control Act and all relevant updates. Publication No. 94-06. 2013.



Laboratory Analysis Results Table:

The laboratory derived concentrations of analytes detected above the laboratory reporting limits are provided in the table below; see Appendix B for the full laboratory report including a list of all analytes included in the EPA Method 8081 analysis.

Sample ID	S-1 ^{b,d}	S-2 ^{b,d}	S-3 ^{b,d}	S-4	S-5	S-6	S-7	MTCA Method B CLARC ^a
Analytes								
dieldrin	nd	0.038	nd	0.0344	0.0536	<0.00995	<0.0107	0.063
DDE	0.14	0.12	nd	0.0296	<0.00927	<0.00995	<0.0107	2.9
DDD	0.064	0.034	nd	0.0116	<0.00927	<0.00995	<0.0107	4.2
DDT	0.036	0.014	nd	0.0337	<0.00927	<0.00995	<0.0107	2.9
gamma-chlordane	nd	nd	nd	<0.00945	<0.00927	0.0101	<0.0107	2.9 ^c
alpha-chlordane	nd	nd	nd	<0.00945	<0.00927	0.0176	<0.0107	2.9 ^c

*Sample results presented in mg/kg

^a Based on CLARC data tables for Method B Cancer (Eq. 740-2) presented in mg/kg

^b Results reported for samples collected during the 2009 HGA Limited Phase II Environmental Site Assessment

^c MTCA Method B Cleanup Level for total chlordane

^d nd = not detected above the laboratory reporting limit; laboratory reporting limits not provided in HGA report as provided by the Washington State Department of Ecology

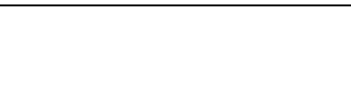


**APPENDIX A
FIGURES**

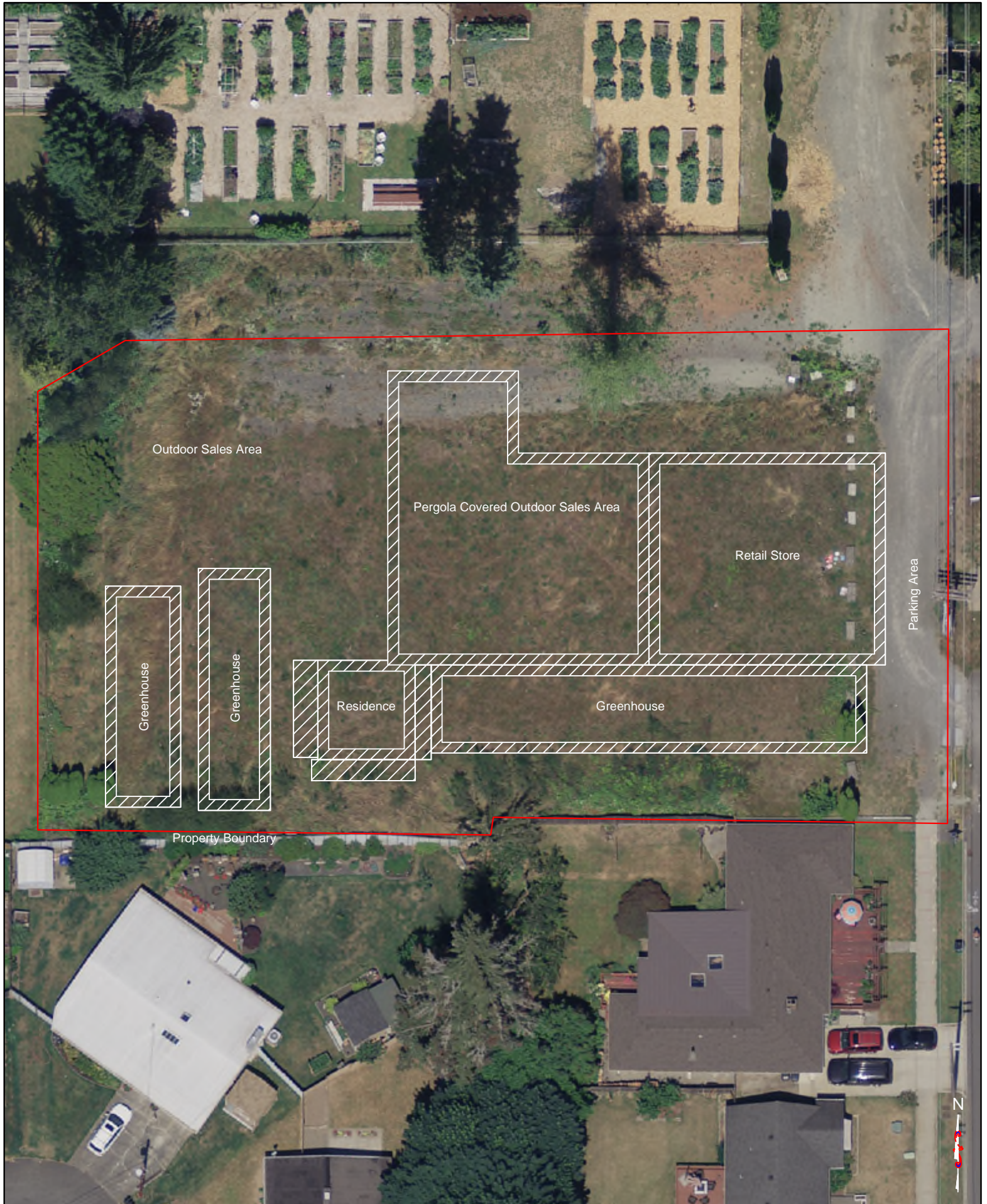


Former Boulevard Nursery
Cleanup Site ID: 223 Facility/Site ID: 3749
2021 Boulevard Road Southeast
Olympia, Washington 98501

August 2020
ADESA Environmental
197 Central Avenue East
Tenino, Washington 98589



Site Vicinity Map



Outdoor Sales Area

Pergola Covered Outdoor Sales Area

Retail Store

Parking Area

Greenhouse

Greenhouse

Residence

Greenhouse

Property Boundary



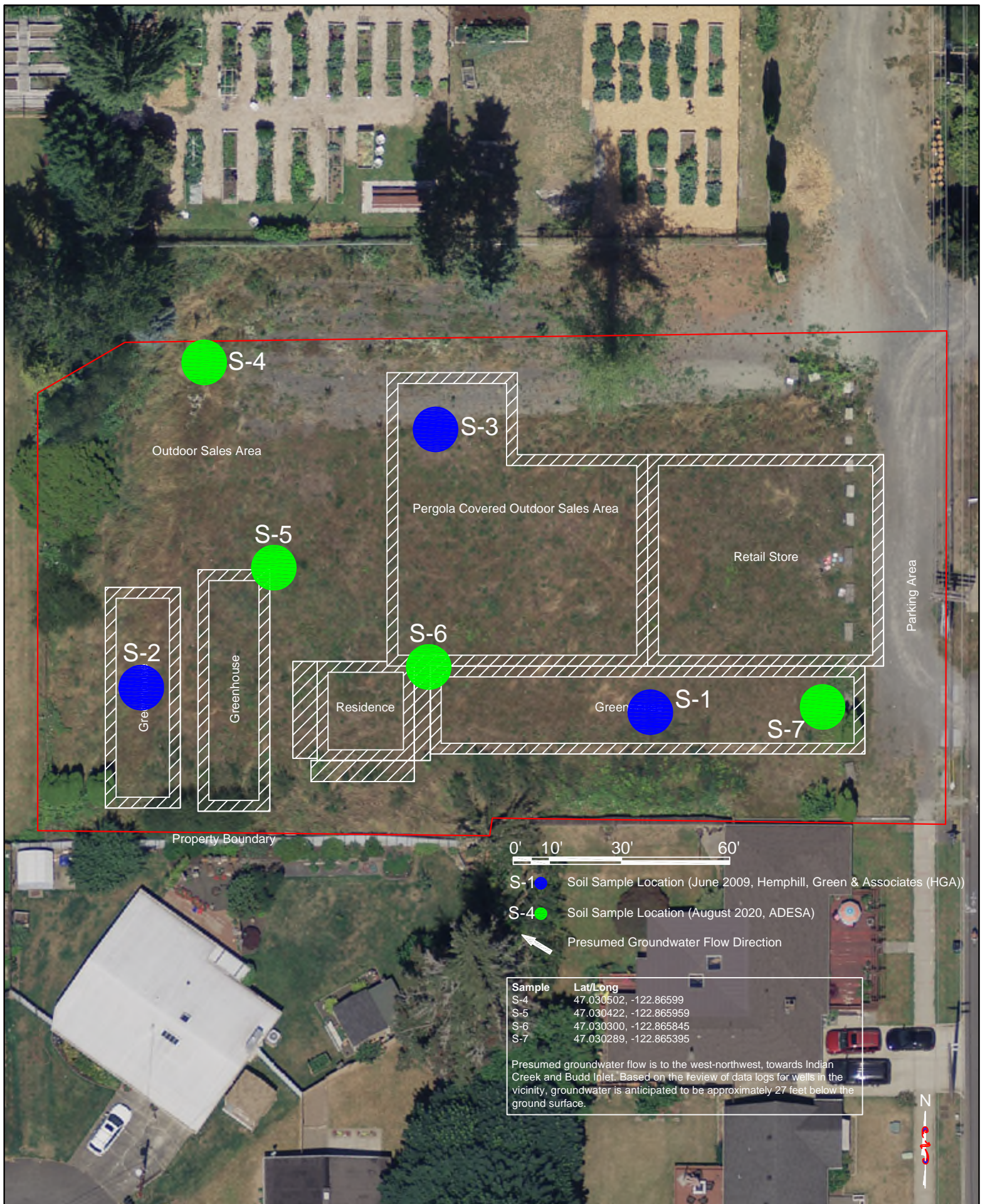
Former Boulevard Nursery
Cleanup Site ID: 223 Facility/Site ID: 3749
2021 Boulevard Road Southeast
Olympia, Washington 98501

August 2020

ADESA Environmental
197 Central Avenue East
Tenino, Washington 98589

Historical Site
Layout





- S-1 ● Soil Sample Location (June 2009, Hemphill, Green & Associates (HGA))
- S-4 ● Soil Sample Location (August 2020, ADESA)
- Presumed Groundwater Flow Direction

Sample	Lat/Long
S-4	47.030502, -122.86599
S-5	47.030422, -122.865959
S-6	47.030300, -122.865845
S-7	47.030289, -122.865395

Presumed groundwater flow is to the west-northwest, towards Indian Creek and Budd Inlet. Based on the review of data logs for wells in the vicinity, groundwater is anticipated to be approximately 27 feet below the ground surface.





**APPENDIX B
LABORATORY DOCUMENTATION**



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

September 2, 2020

William Rutherford
ADESA
P.O. Box 1009
Tenino, WA 98589

Dear Mr. Rutherford:

Please find enclosed the analytical data report for the Boulevard Nursery Project located in Olympia, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

BOULEVARD NURSERY PROJECT

ADESA

Libby Project # L200824-5

Date Received 8/24/2020

Time Received 4:56 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete? Yes No
2. How was the sample delivered? Hand Delivered Picked Up Shipped

Log In

3. Cooler or Shipping Container is present. Yes No N/A
4. Cooler or Shipping Container is in good condition. Yes No N/A
5. Cooler or Shipping Container has Custody Seals present. Yes No N/A
6. Was an attempt made to cool the samples? Yes No N/A
7. Temperature of cooler (0°C to 8°C recommended) 4.2 °C
8. Temperature of sample(s) (0°C to 8°C recommended) 20.7 °C
9. Did all containers arrive in good condition (unbroken)? Yes No
10. Is it clear what analyses were requested? Yes No
11. Did container labels match Chain of Custody? Yes No
12. Are matrices correctly identified on Chain of Custody? Yes No
13. Are correct containers used for the analysis indicated? Yes No
14. Is there sufficient sample volume for indicated analysis? Yes No
15. Were all containers properly preserved per each analysis? Yes No
16. Were VOA vials collected correctly (no headspace)? Yes No N/A
17. Were all holding times able to be met? Yes No

Discrepancies/ Notes

18. Was client notified of all discrepancies? Yes No N/A

Person Notified: _____

Date: _____

By Whom: _____

Via: _____

Regarding: _____

19. Comments. _____



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

RE: Boulevard Nursery
Work Order Number: 2008344

September 02, 2020

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 4 sample(s) on 8/26/2020 for the analyses presented in the following report.

Organochlorine Pesticides by EPA Method 8081
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

CLIENT: Libby Environmental
Project: Boulevard Nursery
Work Order: 2008344

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2008344-001	S-4	08/24/2020 12:00 AM	08/26/2020 9:29 AM
2008344-002	S-5	08/24/2020 12:00 AM	08/26/2020 9:29 AM
2008344-003	S-6	08/24/2020 12:00 AM	08/26/2020 9:29 AM
2008344-004	S-7	08/24/2020 12:00 AM	08/26/2020 9:29 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Libby Environmental

Project: Boulevard Nursery

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Libby Environmental

Collection Date: 8/24/2020

Project: Boulevard Nursery

Lab ID: 2008344-001

Matrix: Soil

Client Sample ID: S-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 29489

Analyst: DW

Toxaphene	ND	0.0945	Q	mg/Kg-dry	1	8/27/2020 9:37:45 PM
Alpha BHC	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Beta BHC	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Gamma BHC (Lindane)	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Delta BHC	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Heptachlor	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Aldrin	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Heptachlor epoxide	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
gamma-Chlordane	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endosulfan I	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
alpha-Chlordane	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Dieldrin	0.0344	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
4,4'-DDE	0.0296	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endrin	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endosulfan II	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
4,4'-DDD	0.0116	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endrin aldehyde	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endosulfan sulfate	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
4,4'-DDT	0.0337	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Endrin ketone	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Methoxychlor	ND	0.00945		mg/Kg-dry	1	8/27/2020 9:37:45 PM
Surr: Decachlorobiphenyl	101	27 - 166		%Rec	1	8/27/2020 9:37:45 PM
Surr: Tetrachloro-m-xylene	109	28.1 - 171		%Rec	1	8/27/2020 9:37:45 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Moisture (Percent Moisture)

Batch ID: R61512

Analyst: CA

Percent Moisture	5.99	0.500		wt%	1	8/31/2020 2:01:02 PM
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Client: Libby Environmental
Project: Boulevard Nursery
Lab ID: 2008344-002
Client Sample ID: S-5

Collection Date: 8/24/2020

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 29489

Analyst: DW

Toxaphene	ND	0.0927	Q	mg/Kg-dry	1	8/27/2020 9:57:01 PM
Alpha BHC	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Beta BHC	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Gamma BHC (Lindane)	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Delta BHC	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Heptachlor	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Aldrin	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Heptachlor epoxide	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
gamma-Chlordane	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endosulfan I	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
alpha-Chlordane	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Dieldrin	0.0536	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
4,4'-DDE	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endrin	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endosulfan II	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
4,4'-DDD	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endrin aldehyde	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endosulfan sulfate	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
4,4'-DDT	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Endrin ketone	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Methoxychlor	ND	0.00927		mg/Kg-dry	1	8/27/2020 9:57:01 PM
Surr: Decachlorobiphenyl	97.9	27 - 166		%Rec	1	8/27/2020 9:57:01 PM
Surr: Tetrachloro-m-xylene	112	28.1 - 171		%Rec	1	8/27/2020 9:57:01 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Moisture (Percent Moisture)

Batch ID: R61512

Analyst: CA

Percent Moisture	6.89	0.500		wt%	1	8/31/2020 2:01:02 PM
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Client: Libby Environmental
Project: Boulevard Nursery
Lab ID: 2008344-003
Client Sample ID: S-6

Collection Date: 8/24/2020

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 29489

Analyst: DW

Toxaphene	ND	0.0995	Q	mg/Kg-dry	1	8/27/2020 10:06:37 PM
Alpha BHC	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Beta BHC	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Gamma BHC (Lindane)	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Delta BHC	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Heptachlor	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Aldrin	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Heptachlor epoxide	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
gamma-Chlordane	0.0101	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endosulfan I	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
alpha-Chlordane	0.0176	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Dieldrin	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
4,4'-DDE	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endrin	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endosulfan II	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
4,4'-DDD	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endrin aldehyde	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endosulfan sulfate	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
4,4'-DDT	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Endrin ketone	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Methoxychlor	ND	0.00995		mg/Kg-dry	1	8/27/2020 10:06:37 PM
Surr: Decachlorobiphenyl	87.6	27 - 166		%Rec	1	8/27/2020 10:06:37 PM
Surr: Tetrachloro-m-xylene	97.5	28.1 - 171		%Rec	1	8/27/2020 10:06:37 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Moisture (Percent Moisture)

Batch ID: R61512

Analyst: CA

Percent Moisture	8.16	0.500		wt%	1	8/31/2020 2:01:02 PM
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Client: Libby Environmental

Collection Date: 8/24/2020

Project: Boulevard Nursery

Lab ID: 2008344-004

Matrix: Soil

Client Sample ID: S-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 29489

Analyst: DW

Toxaphene	ND	0.107	Q	mg/Kg-dry	1	8/27/2020 10:16:12 PM
Alpha BHC	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Beta BHC	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Gamma BHC (Lindane)	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Delta BHC	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Heptachlor	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Aldrin	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Heptachlor epoxide	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
gamma-Chlordane	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endosulfan I	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
alpha-Chlordane	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Dieldrin	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
4,4'-DDE	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endrin	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endosulfan II	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
4,4'-DDD	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endrin aldehyde	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endosulfan sulfate	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
4,4'-DDT	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Endrin ketone	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Methoxychlor	ND	0.0107		mg/Kg-dry	1	8/27/2020 10:16:12 PM
Surr: Decachlorobiphenyl	78.2	27 - 166		%Rec	1	8/27/2020 10:16:12 PM
Surr: Tetrachloro-m-xylene	84.5	28.1 - 171		%Rec	1	8/27/2020 10:16:12 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Moisture (Percent Moisture)

Batch ID: R61512

Analyst: CA

Percent Moisture	11.9	0.500		wt%	1	8/31/2020 2:01:02 PM
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Work Order: 2008344
CLIENT: Libby Environmental
Project: Boulevard Nursery

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: LCS1-29489	SampType: LCS	Units: mg/Kg			Prep Date: 8/27/2020	RunNo: 61432					
Client ID: LCSS	Batch ID: 29489				Analysis Date: 8/27/2020	SeqNo: 1232356					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alpha BHC	0.172	0.0100	0.2000	0	85.8	70.8	143				
Beta BHC	0.171	0.0100	0.2000	0	85.5	70.5	143				
Gamma BHC (Lindane)	0.172	0.0100	0.2000	0	86.1	70.8	144				
Delta BHC	0.171	0.0100	0.2000	0	85.5	67.8	143				
Heptachlor	0.179	0.0100	0.2000	0	89.4	70.7	151				
Aldrin	0.170	0.0100	0.2000	0	85.0	68.5	149				
Heptachlor epoxide	0.171	0.0100	0.2000	0	85.4	67.8	152				
gamma-Chlordane	0.170	0.0100	0.2000	0	84.8	63.8	150				
Endosulfan I	0.174	0.0100	0.2000	0	86.8	73.3	151				
alpha-Chlordane	0.170	0.0100	0.2000	0	84.8	63.5	150				
Dieldrin	0.170	0.0100	0.2000	0	84.8	72.8	149				
4,4'-DDE	0.167	0.0100	0.2000	0	83.5	71.1	146				
Endrin	0.173	0.0100	0.2000	0	86.4	62.7	158				
Endosulfan II	0.172	0.0100	0.2000	0	86.2	53.5	154				
4,4'-DDD	0.171	0.0100	0.2000	0	85.7	66.3	154				
Endrin aldehyde	0.171	0.0100	0.2000	0	85.6	43.8	133				
Endosulfan sulfate	0.172	0.0100	0.2000	0	85.9	59.5	149				
4,4'-DDT	0.178	0.0100	0.2000	0	88.9	70.5	149				
Endrin ketone	0.173	0.0100	0.2000	0	86.5	58	157				
Methoxychlor	0.178	0.0100	0.2000	0	89.0	52	159				
Surr: Decachlorobiphenyl	0.0537		0.05000		107	27	166				
Surr: Tetrachloro-m-xylene	0.0484		0.05000		96.8	28.1	171				

Sample ID: MB-29489	SampType: MBLK	Units: mg/Kg			Prep Date: 8/27/2020	RunNo: 61432					
Client ID: MBLKS	Batch ID: 29489				Analysis Date: 8/27/2020	SeqNo: 1233208					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toxaphene	ND	0.100									
Alpha BHC	ND	0.0100									
Beta BHC	ND	0.0100									

Work Order: 2008344
 CLIENT: Libby Environmental
 Project: Boulevard Nursery

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: MB-29489	SampType: MBLK	Units: mg/Kg	Prep Date: 8/27/2020	RunNo: 61432							
Client ID: MBLKS	Batch ID: 29489		Analysis Date: 8/27/2020	SeqNo: 1233208							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gamma BHC (Lindane)	ND	0.0100									
Delta BHC	ND	0.0100									
Heptachlor	ND	0.0100									
Aldrin	ND	0.0100									
Heptachlor epoxide	ND	0.0100									
gamma-Chlordane	ND	0.0100									
Endosulfan I	ND	0.0100									
alpha-Chlordane	ND	0.0100									
Dieldrin	ND	0.0100									
4,4'-DDE	ND	0.0100									
Endrin	ND	0.0100									
Endosulfan II	ND	0.0100									
4,4'-DDD	ND	0.0100									
Endrin aldehyde	ND	0.0100									
Endosulfan sulfate	ND	0.0100									
4,4'-DDT	ND	0.0100									
Endrin ketone	ND	0.0100									
Methoxychlor	ND	0.0100									
Surr: Decachlorobiphenyl	0.0632		0.05000		126	27	166				
Surr: Tetrachloro-m-xylene	0.0530		0.05000		106	28.1	171				

Sample ID: LCS2-29489	SampType: LCS	Units: mg/Kg	Prep Date: 8/27/2020	RunNo: 61432							
Client ID: LCSS	Batch ID: 29489		Analysis Date: 8/27/2020	SeqNo: 1233238							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Toxaphene	0.740	0.100	1.000	0	74.0	57.3	134				
Surr: Decachlorobiphenyl	0.0556		0.05000		111	27	166				
Surr: Tetrachloro-m-xylene	0.0502		0.05000		100	28.1	171				

Work Order: 2008344
 CLIENT: Libby Environmental
 Project: Boulevard Nursery

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: 2008344-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 8/27/2020	RunNo: 61432							
Client ID: S-4	Batch ID: 29489		Analysis Date: 8/27/2020	SeqNo: 1233234							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alpha BHC	0.200	0.00964	0.1927	0	104	76.1	143				
Beta BHC	0.200	0.00964	0.1927	0	104	70.1	143				
Gamma BHC (Lindane)	0.200	0.00964	0.1927	0	104	76.1	145				
Delta BHC	0.200	0.00964	0.1927	0	104	61.1	142				
Heptachlor	0.204	0.00964	0.1927	0	106	76.3	157				
Aldrin	0.189	0.00964	0.1927	0	98.1	73.9	152				
Heptachlor epoxide	0.189	0.00964	0.1927	0	98.2	75.1	154				
gamma-Chlordane	0.179	0.00964	0.1927	0	92.8	69.4	152				
Endosulfan I	0.182	0.00964	0.1927	0	94.2	75.3	153				
alpha-Chlordane	0.182	0.00964	0.1927	0.005991	91.1	68.7	155				
Dieldrin	0.203	0.00964	0.1927	0.03443	87.3	74	152				
4,4'-DDE	0.197	0.00964	0.1927	0.02960	86.7	70.7	152				
Endrin	0.188	0.00964	0.1927	0.008412	93.0	80.4	152				
Endosulfan II	0.182	0.00964	0.1927	0	94.4	67.2	144				
4,4'-DDD	0.201	0.00964	0.1927	0.01156	98.3	71.1	155				
Endrin aldehyde	0.167	0.00964	0.1927	0	86.4	22.5	147				
Endosulfan sulfate	0.176	0.00964	0.1927	0	91.3	49.5	145				
4,4'-DDT	0.176	0.00964	0.1927	0.03367	73.8	61.5	169				
Endrin ketone	0.180	0.00964	0.1927	0.004177	91.5	67.1	144				
Methoxychlor	0.174	0.00964	0.1927	0	90.5	58	170				
Surr: Decachlorobiphenyl	0.0463		0.04818		96.1	27	166				
Surr: Tetrachloro-m-xylene	0.0531		0.04818		110	28.1	171				

Client Name: **LIBBY**
 Logged by: **Carissa True**

Work Order Number: **2008344**
 Date Received: **8/26/2020 9:29:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes No Not Present
 6. Was an attempt made to cool the samples? Yes No NA
 7. Were all items received at a temperature of >2°C to 6°C * Yes No NA
 8. Sample(s) in proper container(s)? Yes No
 9. Sufficient sample volume for indicated test(s)? Yes No
 10. Are samples properly preserved? Yes No
 11. Was preservative added to bottles? Yes No NA
 12. Is there headspace in the VOA vials? Yes No NA
 13. Did all samples containers arrive in good condition(unbroken)? Yes No
 14. Does paperwork match bottle labels? Yes No
 15. Are matrices correctly identified on Chain of Custody? Yes No
 16. Is it clear what analyses were requested? Yes No
 17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	5.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



**APPENDIX C
SUPPLEMENTAL INFORMATION**

Thurston County Assessor

Parcel Number: 12824411300

Date: 9/6/2020

Situs Address:	2021 BOULEVARD RD SE	Sect/Town/Range:	24 18 2W
Owner:	BARLOW, BRIAN C	Size:	0.90 Acres
Address:	PO BOX 668 RAINIER, WA 98576	UseCode:	91 Undeveloped Land
Taxpayer:	BARLOW, BRIAN C	TCA Number:	110
Address:	PO BOX 668 RAINIER, WA 98576	Neighborhood:	16R1
Abbreviated Legal:	Section 24 Township 18 Range 2W Quarter NE SE SS-5129 LT 1 Document 1036/640	Property Type:	LND
		Taxable:	YES
		Active Exemptions:	None
		School District:	OLYMPIA S.D. #111
		Water Source:	PUBLIC
		Sewer Type:	SEWER

Market Values

Tax Year	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Assessment Year	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Market Value Land	\$158,500	\$153,400	\$154,200	\$126,200	\$115,250	\$108,200	\$106,700	\$97,550	\$94,200	\$111,450
Market Value Buildings										
Market Value Total	\$158,500	\$153,400	\$154,200	\$126,200	\$115,250	\$108,200	\$106,700	\$97,550	\$94,200	\$111,450

Land Characteristics

Land Flag	1100	Land Influence(s)	No Influences Listed
Lot Square Footage	39204		
Lot Acreage	0.9		
Effective Frontage	Not Listed		
Effective Depth	Not Listed		
Water Source	Public		
Sewer Source	Public		

Sales

Sale Date:	01/22/2013	07/18/2008
Price:	\$21,148	
Excise:	518756	364909
Sale Type:	TAX DEED	QUIT CLAIM DEED
Recording Number:	4313910	4044027
Seller:	NEVIN JEFFREY	NEVINLAND LLC
Buyer:	BARLOW BRIAN	NEVIN JEFFREY
Multiple Parcel Sale:	N	N

The Assessor's Office maintains property records on approximately 112,000 parcels in Thurston County for tax purposes. Though records are updated regularly, the accuracy and timeliness of published data cannot be guaranteed. Any person or entity that relies on information obtained from this website does so at his or her own risk. Neither Thurston County nor the Assessor will be held liable for damage or losses caused by use of this information. **All critical information should be independently verified.**

Office of the Assessor

Steven J. Drew, Assessor

2000 Lakeridge Drive SW - Olympia, WA 98502

Customer Service (360)867-2200 -- Fax (360)867-2201 -- TDD (360)754-2933



Data for Parcel No. 12824411300

Owner(s):
BARLOW, BRIAN C

Address:	PO BOX 668
City:	RAINIER
State:	WA, 98576
Site Address:	2021 BOULEVARD RD SE
Site City:	OLYMPIA
Site Zip:	98501
Section:	S24182W
Abbreviated Legal:	Section 24 Township 18 Range 2W Quarter NE SE SS-5129 LT 1 Document 1036/640
Usecode:	91
Tax Code Area:	110
Taxable:	Yes
Annual Tax:	View Property Taxes for Parcel
Property Type:	LND
Total Acres:	0.9
Land Value:	View Assessor's Data for Parcel
Building Value:	View Assessor's Data for Parcel
Total Value:	View Assessor's Data for Parcel
Current Use:	N
Exemptions:	None
Wetlands:	Unknown
Flood Zone:	OUT
Flood of 1999:	Unknown
Winter Flooding of 1996:	Unknown
High Groundwater Flood Hazards:	Unknown
Zoning:	R-4-8
Commissioner District:	John Hutchings - District 1
Historic Site:	No
Permitting Jurisdiction:	OLYMPIA
Jurisdiction of Influence:	Same as Permitting Jurisdiction
No Shooting Zone:	No
Animal Control:	Contact Animal Services (360-352-2510).
Weed Containment Zone:	No
Landslide Hazard Review Area - Slope A:	Unknown
Landslide Hazard Review Area - Slope B:	Unknown
Landslide Hazard Review Area - Slope C, D, E:	Not mapped by GeoData
Ground Water Sensitive Areas:	No
DNR Natural Heritage Data:	Unknown
Prairie Indicator Soils:	Yes - Check with Permitting Jurisdiction
Mazama Pocket Gopher Indicator Soils:	Yes - Check with Permitting Jurisdiction
Mazama Pocket Gopher Soils Review Area:	Yes - Check with Permitting Jurisdiction
Mazama Pocket Gopher Soils Review Area Preference:	Less Preferred
Marine Riparian Review Area - 300':	Unknown
Stream Riparian Review Area - 300':	Unknown
Wetland Review Area - 300':	Unknown
Shoreline Master Program and 100' Review Area:	No
FEMA Panel No.:	0188

Wellhead Protection Area:	No
Area of Groundwater Concern:	No
Elevated Nitrates:	Yes
Soil Type:	Yelm fine sandy loam, 0 to 3% slopes
Hydric Soil:	Unknown
Watershed:	BUDD/DESCHUTES
Water Service Area:	Unknown
Water Resource Inventory Area (WRIA):	13
School Attendance District:	OLYMPIA
Elementary School:	MCKENNY
Middle School:	WASHINGTON
High School:	OLYMPIA
School Taxing District:	View Assessor's Data for Parcel
Fire Response District:	Olympia
Unconsolidated Fire Response District:	Olympia
Fire Taxing District:	View Assessor's Data for Parcel
Medic Response District:	M4
Residential Outdoor Burning:	Residential outdoor burning is banned within the city limits and urban growth areas.
Planning Region:	1
Census Tract:	010700
Radio or Cell Tower:	No
Airport Zone:	No
Contamination:	Yes

SALES PRICE	RECORD	LEGAL OWNER
3-78 63750	207 62	SMITH ALONZO Z DOD 125 1/4 1/4 2 Swanson, Raymond J.

Sec. or Plat 24-18-2W

Subdiv. SE NE SE

I. No. 6

LEGAL DESCRIPTION L11 SS-5109

BAP Elm Sec. 725.76 F S0°06'20" E of
 E4 cor. S0°06'20" E 1165.73 F to SE cor. of
 N 229 F of SE-NE-SE; S 89°21' W 275.01 F;
 N 0°06'20" W 126.64 F; N 25° E 44.07 F to
 Wln of E 256.3 F of SE-NE-SE; N 89°29'40" E
 256.31 F to PoB.
 LESS: E 30 F Blvd Rd
 LESS: that ptn Elm & Sky of a lvs beg NW cor. AX
 L4 Haycox Odd Wlns N 0°06'20" W 1100 F
 at west Wlns L4 5.40 F; N 89°29'40" E
 125 F to Blvd Rd.

Tax
110 for 84

TAX YEAR	TIMBER N. FT	IMP. ACRES	UNIMP. ACRES	TIMBER VALUE	IMP. VALUE	UNIMP. VALUE	TOTAL L&T	IMPS	TOTAL VALUE
82							68600	32500	BB
86							68600	32500	BB
88							68200	32600	02-07
97							78400	75800	01
1970									
1971									
1972		3.01		7520			7520	33840	
1973									
1974									
1975							9000	34980	
1976									
1977									
1978							12800	56230	
1979							35300	28630	

- Street
- Curb
- Sidewalk
- Electricity
- Water
- Sewer
- Driveway
- Bulkhead
- Grade
- Condition: 2140.00 PER ACRE
- Soil Class: LAND-1966 C.P.C.

FV 6520-29,600
 SHEET #1 2490 12640
 " # 2 1630 7090
 " # 3 2260 14105
 W.J.M.G.-6/70 7400 33,835
 2500 ac.
 1975
 Sheet #1-12,640
 " # 2-7090
 " # 3-15,250
 34,980
 1978 Sheet #1-18,020
 2-10,610
 3-27,600
 56,230

Address 2021 BLVD RD

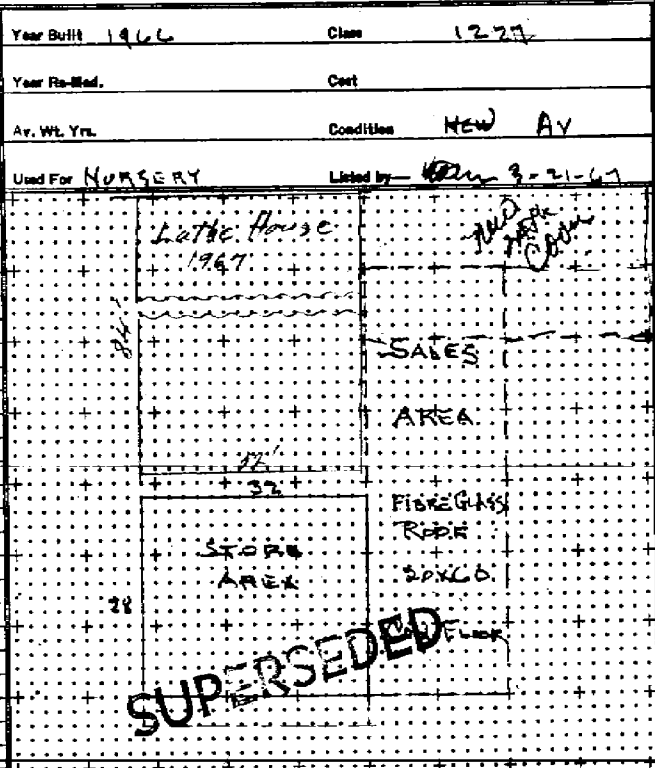
Picture No. A123

Depreciation Rate %

1	2	5	2	4	4	1	1	3	1
RNG	T	SEC	4	16	LOT	SEC			

12824411300

BUILDING	ROOF	STORIES	1	2	A	B
Cable	Flat	No. Rooms				
Dwelling	Hip	Halls				
Duplex	Gable	Living				
Apartment		Kitchen				
Court Apt.	Shingles	Dining				
Motel	Shakes	Bed				
Office	Pat. Shing.	Powder				
Hotel	Ter & Gravel	Bath				
Store	Build-up	Sun				
Theatre	CONSTRUCT.	UTILITY				
Bank	Single	Moat				
Hall	Double					
Corn'l Gar.	Frame	CEILED				
LL Mfg.	Brick	Wall Beard				
Factory	Concrete	Paper				
Loft	Concrete Bk.	Plast. Brd.				
Warehouse	Ord. May.	Plaster				
Greenhouse	MIII May.	TRIM				
Gas Sta.	Insulation	Fir				
Barn						
Poultry	HEATING	Hardwood				
	Fireplace					
	Stoves	Tile				
	Floor-Wall	Marble				
FOUNDATION	Pipeless Furn.	Metal				
Concrete	Pipe Furn.					
Conc. Bk.	Hot Water	FLOORS				
Stone, Brick	C. I. Rad.	Soft				
Pcets	Concealed	Hard				
Piles	Floor Rad.	Concrete				
	Base B. Rad.	App. Tile				
EXT. WALLS	Panel Rad.	Lino/leum				
Brd. & Bats	Oil Burner	Carpet				
Rustle	Gas Burner					
Shiplap	Coal Stoker	BASEMENT				
Ter Paper	Electric	None				
Cedar	Air Cond.	Full				
Shingles	SUSPENDED	Part				
Shakes	EXTRAS	Concrete Floor				
Stucco	Dormers	Dirt Floor				
Conc. Bkls.	Porches	Garage				
Stucco Mar'y	Bay Window					
Tile	Book Case	PLUMBING				
Stone	Beams Ceil.	1st G.				
Galv. Iron	Ventil. Sys.	Show.				
Aluminum	Refrig.	Telst				
Brick	Plate Glass	Sink				
TEK. IIS	Elevator	Garbage Disp.				
	Airc. Sprts.	Dish Washer				
Brick Ven.		H. W. Heater				
Corn. Sel.		Laundry Trays				
Reman	LIGHTING	Automatic Washer				
Rugged	Electric					
	Gas					
		No. Fixture				



ADDITIONAL BUILDINGS	First	Second	Third
Garage x			
SALES AREA -			
1200 S.E. @ 12x 125	1655	2220	3240
LANA Covered 2.70			
GREEN-HOUSE (old) 125x20	750	400	
NEW WITH CORRADO X 90			1600
32'x84' Lotte house e. 4' less 33%	1500		
AD 2688 07			2700
TOTAL	2405	4620	
ADDED FEATURES			
Attic			
Basement			
Basement Room			
Heating 1 EA SUSPENDED	325	325	
Plumbing 3 P.C.S.	500	500	
Fireplace			
Attached Garage			
TOTALS	825	925	
Adjustments			
Base Cost Retail Ann	6740	7955	14700
Reproduction Cost	7565	8880	
Depreciation 3%		260	
Obsolescence %			
Present Value		8520	23240
Additional Buildings	2405	4620	
Total Present Value	9970	12840	
Total Assessed Value % 25	2490		
Page #2 TOTAL			9230
Appraisal OK			32470
			32500
Appraised by			
3-27 1967			
6/4 9-29 1970			19
4/4 1-6-4 1973			19

Rate Adj.	-	+	Base Rate	96
INSULATION		13	Variation	79
TILE FLOOR COV		25	Adj. Base Rate	13.88
MARKET INTERIOR		25	Square Feet	896
CONCRETE FL.	35		Cubic Feet	
			Perimeter	
			Height	
			% Completed	
Total	35	63		

REMARKS NOTE - REPLACES OLD OFFICE DESTROYED BY FIRE - FEB 23 1966

SEE COMMERCIAL FILE
WORK SHUT FOR REP IN FIELD BARK

Appraisal OK
Bonnie Baker Of 3587-8

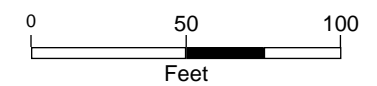


X

Legend

- Parcel Boundaries
- Roads - Major
 - Major Roads
 - Ramp
 - I 5; US 101
- Roads (Large Scale)
- + Railroads
- County Border

Scale 1: 1,088

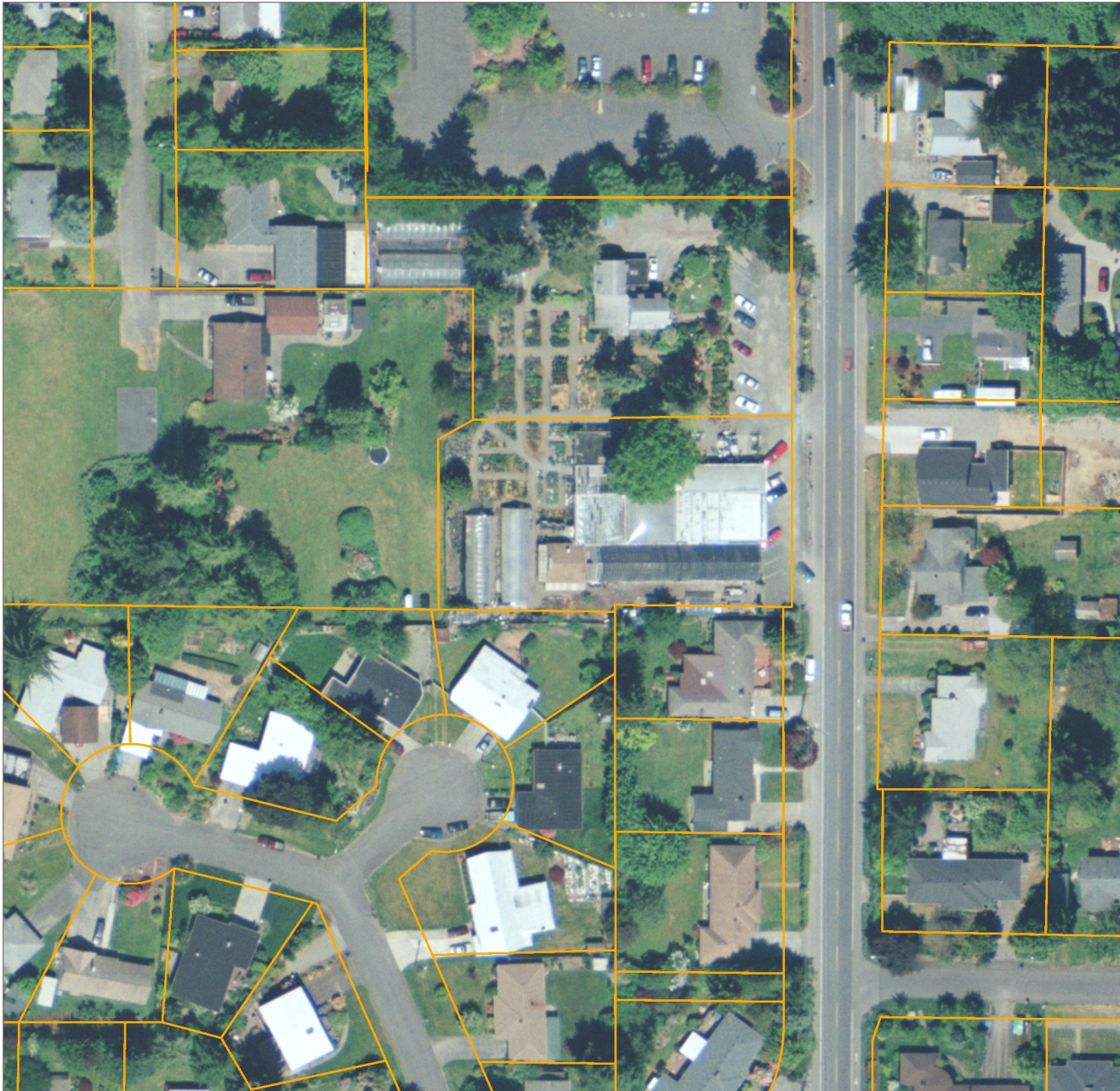


Map Created Using GeoData Public Website
Published: 9/6/2020

Note:










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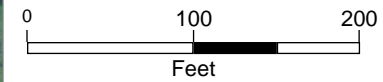


2006 Aerial

Legend

-  Parcel Boundaries
- Roads - Major
 -  Major Roads
 -  Ramp
 -  I 5; US 101
 -  Roads (Large Scale)
-  Railroads
-  County Border

Scale 1: 2,028



Map Created Using GeoData Public Website

Published: 9/6/2020

Note:



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The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

449705

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. SE44680

Construction/Decommission

Type of Well

- Construction
- Decommission ORIGINAL INSTALLATION Notice of Intent Number _____

- Resource Protection
- Geotechnical Soil Boring

Consulting Firm Aspect Consulting LLC

Property Owner City of Olympia

Site Address 2117 Boulevard Rd. SE

City Olympia County 34-Thurston

Unique Ecology Well ID _____

Location 1/4 NE 1/4 SE Sec 24 Town 18N R2W of WWM

Tag No. _____

Lat/Long (s,t,r still Required) Lat Deg x Lat Min/Sec x

Long Deg x Long Min/Sec x

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Materials used and the information reported above are true to my best knowledge and belief

Driller Trainee Name (Print): Curtis Askew

Tax Parcel No. _____

Driller/Trainee Signature _____

Cased or Uncased Diameter 8 1/4" Static Level 27

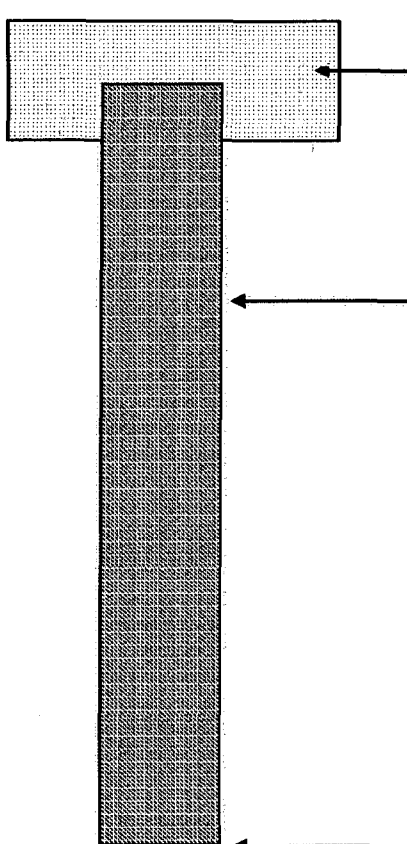
Driller/Trainee License No. 2867

Work/Decommission Start Date 2/21/2012

If trainee, licesned drillers' _____

Work/Decommission Completed Date 2/22/2012

Signature and License No. _____

Construction/Design	Well Data W12-108	Formation Description
	CONCRETE SURFACE SEAL <u>4</u> FT	<u>0 - 31</u> FT Brown silty sands
	BACKFILL <u>27</u> FT <u>Bead. Chips</u>	<u>0 -</u> FT
	DEPTH OF BORING <u>31</u> FT	<u>0 -</u> FT

RECEIVED

MAR 20 2012

WA State Department of Ecology (SWRO)

**LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT**

Prepared for:

West Coast Bank

**Target Property:
Boulevard Nursery
2021 Boulevard Road SE
Olympia, WA 98501**

Submitted to:

**West Coast Bank
Mr. Terry Morrison & Mr. Steve Bucher
301 Church Street NE
Salem, Oregon 97308**

Prepared by:

**Hemphill, Green & Associates LLC.
P.O. Box 2212
Sisters, Oregon 97759
(541) 549-1966**

Date:

June 10, 2009

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FIGURES

1. Location Map
2. Site Plan

APPENDICES

- A. Laboratory Report
- B. Soil Cleanup Guidance Documents

1 INTRODUCTION

1.1 Site Description

The subject site consists of a 0.90 acre tax lot located at 2021 Boulevard Road SE in Olympia, WA. The general site location is shown on the Location Map, Figure 1.

The property is currently developed with an abandoned nursery operation, which formerly consisted of a retail store and three greenhouses. The property has been vandalized and is currently in ruins. The site configuration is shown on the Site Plan, Figure 2.

1.2 Background

A Phase I Environmental Site Assessment (ESA) was completed for West Coast Bank in March 2009 by Hemphill, Green & Associates LLC (HGA).

The ESA recommendations were 1) abandonment of a former septic system tank, and 2) soil sampling due to the historic greenhouse operations. Those work tasks are described in the following sections of this report.

2 SEPTIC TANK ABANDONMENT

2.1 General

The septic tank was abandoned on April 23, 2009 by All Washington Septic of Olympia, WA. The work was observed and documented by Travis S. Thornton, a Washington-registered geologist with HGA. The work is described below.

2.2 Septic Tank Abandonment

The septic tank was located immediately behind the former retail store on the subject site, below about 1 foot of soil and gravel. The top of the tank was excavated, and was found to be a concrete tank that measured about 5 feet by 4 feet in plan view, and about 5 feet deep. The tank contained 2 feet of waste material, which was removed by a septic service vacuum truck.

After cleaning, the tank was filled with pea gravel from on-site materials. The top of the tank was then covered with the same materials that previously covered the tank.

3 SOIL SAMPLING

3.1 Methodology

A total of three soil samples, designated S-1 through S-3, were collected on April 23, 2009 by HGA. The discrete samples were collected at a depth of about 1 foot below ground surface, using a stainless steel spade that was washed between sampling locations.

As shown on Figure 2, soil samples S-1 and S-2 were collected within the former greenhouse areas. Sample S-3 was collected in a yard area outside the greenhouses. Obvious staining or chemical odors were not observed in any of the soil samples.

The soil samples were packed in clean glass jars, placed in a chilled cooler, and transported to Pacific Agricultural Laboratory in Portland, Oregon under chain-of-custody documentation. Each sample was analyzed for pesticides, the 8 RCRA metals, and nitrates. A copy of the laboratory report is provided in Appendix A of this report.

3.2 Analytical Results

Pesticides were detected in S-1 and S-2; pesticides were not detected in sample S-3. A preliminary evaluation was performed using the online Cleanup Levels and Risk Calculation (CLARC) developed by the Washington State Department of Ecology. Table 1 provides a summary of the analytical results, along with the applicable CLARC soil cleanup standard.

Table 1. Pesticide Results

Sample No	Sample Location	Pesticide	Detected Level (mg/kg)	CLARC* (mg/kg)
S-1	South Greenhouse	DDE	0.14	2.9
		DDD	0.064	4.2
		DDT	0.036	2.9
S-2	North Greenhouse	DDE	0.12	2.9
		dieldrin	0.038	0.063
		DDD	0.034	4.2
		DDT	0.014	2.9
S-3	Yard Area	Non Detected		

* CLARC soil Method B cleanup standard, carcinogen, direct contact, unrestricted land use.

Low levels of arsenic, barium, chromium, lead, and mercury were also detected in all three soil samples, as listed below.

Table 2. Metal Results

Sample No	Sample Location	Metal	Detected Level (mg/kg)	Cleanup Standard *
S-1	South Greenhouse	arsenic	9.77	20
		barium	151	Not Listed
		cadmium	ND	2
		chromium	39.4	19 Cr ⁺⁶ / 2000 Cr ⁺³
		lead	28.5	250
		mercury	0.128	2
		selenium	ND	Not Listed
		silver	ND	Not Listed
S-2	North Greenhouse	arsenic	7.14	20
		barium	131	Not Listed
		cadmium	ND	2
		chromium	32.3	19 Cr ⁺⁶ / 2000 Cr ⁺³
		lead	17.3	250
		mercury	0.100	2
		selenium	ND	Not Listed
		silver	ND	Not Listed
S-3	Yard Area	arsenic	8.07	20
		barium	205	Not Listed
		cadmium	ND	2
		chromium	37.5	19 Cr ⁺⁶ / 2000 Cr ⁺³
		lead	145	250
		mercury	0.167	2
		selenium	ND	Not Listed
		silver	ND	Not Listed

* Washington State Method A Cleanup Levels, unrestricted land use (see Appendix B)

4 CONCLUSIONS & RECOMMENDATIONS

4.1 Discussion

The pesticides detected in site soil samples were below applicable Washington State Model Toxic Control Act (MTCA) pesticide cleanup standards. However, only a screening level assessment was conducted, and the number of samples collected was not sufficient to define the magnitude or extent of the pesticide impacts. The fact that several pesticides (which are now banned from use because of their threat to human and ecological health) were detected is of concern, considering that the property could be re-developed for residential use.

With the possible exception of chromium, the metals were below applicable MTCA soil cleanup levels. Typically, "total chromium" results are mainly due to trivalent chromium (Cr^{+3}) with a smaller percentage of hexavalent chromium (Cr^{+6}), although analytical speciation would be required to confirm this. If this is the case, then the detected total chromium levels are below cleanup standards.

4.2 Recommendations

With regard to the pesticides discussed above, HGA recommends additional soil sampling and analysis to define the horizontal and lateral extent of the pesticides. An alternate approach would be to clear the site of debris and buildings, excavate the top 1 -2 feet of soil from the footprint of the three greenhouses, and properly dispose of the soil at a landfill. This work would be followed by confirmation soil samples to evaluate the effectiveness of cleanup efforts.

With regard to the chromium results, HGA recommends that at least one soil sample be analyzed for Cr^{+3} / Cr^{+6} to determine the appropriate cleanup level that would apply to the site.

5 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Date: June 9, 2009

Report prepared by:



Travis S. Thornton, PG
Project Geologist

Reviewed By:



Christian D. Green, REA
Partner

Pacific Agricultural Laboratories 12505 N.W. Cornell Road Portland, OREGON 97229	Project: Travis Thornton Project Number: 090208 Project Manager: Steve Thun	Reported: 05/11/09 10:58
---	--	-----------------------------

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
S-1 / 09020801 (A904213-01)			Matrix: Soil					
Arsenic	9.77	---	1.28	mg/kg dry	10	05/01/09 10:26	EPA 6020	
Barium	151	---	1.28	"	"	"	"	
Cadmium	ND	---	1.28	"	"	"	"	
Chromium	39.4	---	2.56	"	"	"	"	
Lead	28.5	---	1.28	"	"	"	"	
Mercury	0.128	---	0.102	"	"	"	"	
Selenium	ND	---	1.28	"	"	"	"	
Silver	ND	---	1.28	"	"	"	"	
S-2 / 09020802 (A904213-02)			Matrix: Soil					
Arsenic	7.14	---	1.25	mg/kg dry	10	05/01/09 10:29	EPA 6020	
Barium	131	---	1.25	"	"	"	"	
Cadmium	ND	---	1.25	"	"	"	"	
Chromium	32.3	---	2.50	"	"	"	"	
Lead	17.3	---	1.25	"	"	"	"	
Mercury	0.100	---	0.100	"	"	"	"	
Selenium	ND	---	1.25	"	"	"	"	
Silver	ND	---	1.25	"	"	"	"	
S-3 / 09020803 (A904213-03)			Matrix: Soil					
Arsenic	8.07	---	1.39	mg/kg dry	10	05/01/09 10:37	EPA 6020	
Barium	205	---	1.39	"	"	"	"	
Cadmium	ND	---	1.39	"	"	"	"	
Chromium	37.5	---	2.78	"	"	"	"	
Lead	145	---	1.39	"	"	"	"	
Mercury	0.167	---	0.111	"	"	"	"	
Selenium	ND	---	1.39	"	"	"	"	
Silver	ND	---	1.39	"	"	"	"	

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Hydro-logics
69495 Lazzo
Sisters, OR 97759

Report Number: P090208
Report Date: May 11, 2009
Client Project ID: [none]

Analytical Report

Client Sample ID: S-1
Matrix: soil

PAL Sample ID: P090208-01
Sample Date: 4/23/09

Extraction Date	Analysis Date	Analyte	Amount Detected	Method Reporting Limit	Notes
Method: Multiresidue Profile					
4/30/09	5/5/09	p,p'-DDE	0.14 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	p,p'-DDD	0.064 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	p,p'-DDT	0.036 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	Other Pesticides	Not Detected	See Analyte List	
Surrogate Recovery: 87 %					
Surrogate Recovery Range: 54-139					
(DCBP used as Surrogate)					

Client Sample ID: S-2
Matrix: soil

PAL Sample ID: P090208-02
Sample Date: 4/23/09

Extraction Date	Analysis Date	Analyte	Amount Detected	Method Reporting Limit	Notes
Method: Multiresidue Profile					
4/30/09	5/5/09	p,p'-DDE	0.12 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	Dieldrin	0.038 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	p,p'-DDD	0.034 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	p,p'-DDT	0.014 mg/kg	0.0067 mg/kg	
4/30/09	5/5/09	Other Pesticides	Not Detected	See Analyte List	
Surrogate Recovery: 86 %					
Surrogate Recovery Range: 54-139					
(DCBP used as Surrogate)					

Client Sample ID: S-3
Matrix: soil

PAL Sample ID: P090208-03
Sample Date: 4/23/09

Extraction Date	Analysis Date	Analyte	Amount Detected	Method Reporting Limit	Notes
Method: Multiresidue Profile					
4/30/09	5/5/09	MR Pesticides	Not Detected	See Analyte List	
Surrogate Recovery: 85 %					
Surrogate Recovery Range: 54-139					
(DCBP used as Surrogate)					



Steve Thun For Rick Jordan, Laboratory Manager



--- Approximate Subject Property Boundary

● Soil Sample

■ Septic Tank



SITE MAP	
HGA	<p>Figure 2: Site Map Site Name: Boulevard Nursery 2021 Boulevard Road SE Olympia, Washington</p>

SITE HAZARD ASSESSMENT
WORKSHEET 1
 Summary Score Sheet

SITE INFORMATION:

Name: Boulevard Nursery
Address: 2021 Boulevard Rd SE
City: Olympia **County:** Thurston **State:** WA **Zip:** 98501
Section/Township/Range: Sec. 24/Twp. 18/R2W
Latitude: 47.03041 **Longitude:** -122.86575
Ecology FSID #3749
 Date Scored: August 28, 2012

SITE DESCRIPTION

The 0.9 acre site is located at 2021 Boulevard Rd SE in Olympia, Washington. Available information suggests that the property contained a nursery/greenhouse business from the 1950's to approximately 2008. Since that time, that property has been abandoned and is currently in a state of disrepair. With the exception of a church located to the north, surrounding land use is primarily residential.

In June 2009, a Limited Phase II Environmental Assessment was conducted at the site. The goal of the project was to decommission the existing the septic system and collect soil samples in areas formerly associated with nursery operations. Three soil samples were collected from a depth of approximately 1 foot below ground surface and analyzed for total metals and pesticides. Results are summarized below in Table 1.

Table 1: Soil Analytical Results

Sample ID#	Sample Location	DDT	Dieldrin	Arsenic	Lead
S-1	South Greenhouse	0.036	nd	9.77	28.5
S-2	North Greenhouse	0.014	0.038	7.14	17.3
S-3	Yard Area	nd	nd	8.07	145
MTCA Cleanup Level		¹ 4.2	¹ 0.063	² 20	² 250

Results are reported in milligrams per kilogram (mk/kg). Bold entries indicate MTCA exceedances.

¹CLARC Method B cleanup level for carcinogen, direct contact, unrestricted land uses

²MTCA Method A cleanup level for unrestricted land uses

nd - Analyte not detected

The metals and pesticides detected in soil did not exceed applicable cleanup levels defined by the Washington State Department of Ecology Model Toxics Control Act (MTCA). However, since only a screening level assessment was conducted, the limited number of soil samples did not fully characterize potential impacts to subsurface soil and groundwater at the site. Additional analysis would be required to fully assess the site in accordance with MTCA standards.

ROUTE SCORES:

Surface Water/Human Health: **26.0** Surface Water/Environmental.: **22.2**
 Air/Human Health: **27.5** Air/Environmental: **25.3**
 Groundwater/Human Health: **38.4** **Final Rank: 2**

WORKSHEET 2
Route Documentation

1. SURFACE WATER ROUTE

- a. List those substances to be considered for scoring: Source: 1, 2
Arsenic, DDT, DDE, Dieldrin, Lead, Chromium, Mercury
- b. Explain basis for choice of substance(s) to be used in scoring.
The substances listed above were detected in surficial soil.
- c. List those management units to be considered for scoring: Source: 1, 2
Contaminated soil.
- d. Explain basis for choice of unit to be used in scoring:
Documented release to soil.

2. AIR ROUTE

- a. List those substances to be considered for scoring: Source: 1, 2
Arsenic, DDT, DDE, Dieldrin, Lead, Chromium, Mercury
- b. Explain basis for choice of substance(s) to be used in scoring:
The substances listed above were detected in surficial soil.
- c. List those management units to be considered for scoring: Source: 1, 2
Contaminated soil.
- d. Explain basis for choice of unit to be used in scoring:
Documented release to soil.

3. GROUNDWATER ROUTE

- a. List those substances to be considered for scoring: Source: 1, 2
Arsenic, DDT, DDE, Dieldrin, Lead, Chromium, Mercury
- b. Explain basis for choice of substance(s) to be used in scoring:
The substances listed above were detected in surficial soil.
- c. List those management units to be considered for scoring: Source: 1, 2
Contaminated soil.
- d. Explain basis for choice of unit to be used in scoring:
Documented release to soil.

WORKSHEET 4
Surface Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity										
Substance		Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Arsenic	10	8	763 (rat)	5	0.001	5	1.0	1.75	7
2	DDT	ND	-	87 (rat)	8	0.0005	5	0.8	0.34	5
3	Dieldrin	ND	-	38.3 (rat)	10	5E-05	8	0.8	16	9
4	Lead	5	8	ND	-	0.001 (NOAEL)	10	ND	ND	-

*Potency Factor, ND=No Data

Source: 3, 4

Highest Value: 10

(Max = 10)

Plus 2 Bonus Points? Yes

Final Toxicity Value: 12

(Max = 12)

1.2 Environmental Toxicity (X) Freshwater () Marine					
Substance		Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
		(µg/L)	Value	(mg/kg)	Value
1	Arsenic	360	4		
2	DDT	1.1	8		
3	Dieldrin	2.5	8		
4	Lead	82	6		

Source: 3, 4

Value: 4

(Max = 10)

1.3 Substance Quantity (areal extent)	
Explain Basis: Unknown. Use default Value=1.	Source: 1, 2 Value: 1 (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment: Spills Explain basis: Contaminated soil with no run-on/runoff control	1, 2	10 (Max = 10)
2.2	Surface Soil Permeability: fine sandy loam	7	1 (Max = 7)
2.3	Total Annual Precipitation: 50.81 inches	5	4 (Max = 5)
2.4	Max 2yr/24hr Precipitation: 3 inches	4	3 (Max = 5)
2.5	Flood Plain: Not in a flood plain	7	0 (Max = 2)
2.6	Terrain Slope: 0-2%	7	1 (Max = 5)

3.0 TARGETS

		Source	Value
3.1	Distance to Surface Water: 2,700 feet – Indian Creek	7	4 (Max = 10)
3.2	Population Served within 2 miles: 16 domestic single intakes (16 x 4 per household = 64 people est. Total population $\sqrt{64}=8$)	9	8 (Max = 75)
3.3	Area Irrigated by surface water within 2 miles: 397 acres. $0.75\sqrt{397}=14.9$	9	15 (Max = 30)
3.4	Distance to Nearest Fishery Resource: 2,700 feet – Indian Creek	7	6 (Max = 12)
3.5	Distance to, and Name(s) of, Nearest Sensitive Environment(s): 1,500 feet – freshwater wetland	7	9 (Max = 12)

4.0 RELEASE

Explain Basis: No confirmed release	Source: 1, 2 Value: 0 (Max = 5)
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WORKSHEET 5

Air Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

1.2 Human Toxicity										
	Substance	Air Standard ($\mu\text{g}/\text{m}^3$)	Value	Acute Toxicity (mg/m^3)	Value	Chronic Toxicity ($\text{mg}/\text{kg}/\text{day}$)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Arsenic	0.00023	10	ND	-	ND	-	1.0	1.75	7
2	DDT	0.01	10	ND	-	ND	-	0.8	0.34	5
3	Dieldrin	0.8	10	13	10	ND	-	0.8	16	9
4	Lead	0.5	10	ND	-	ND	-	ND	ND	-

* *Potency Factor, ND=No Data*

Source: 3, 4

Highest Value: 10

(Max = 10)

Plus 2 Bonus Points? Yes

Final Toxicity Value: 12

(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)				
1.3.1 Gaseous Mobility		1.3.2 Particulate Mobility		
Vapor Pressure(s) (mmHg)		Soil Type	Erodibility	Climatic Factor
1	Arsenic, Vapor Pressure NA	Fine sandy loam	86 tons/acre/yr	<1
2	DDT, Vapor Pressure NA	Fine sandy loam	86 tons/acre/yr	<1
3	Dieldrin, Vapor Pressure NA	Fine sandy loam	86 tons/acre/yr	<1
4	Lead, Vapor Pressure NA	Fine sandy loam	86 tons/acre/yr	<1

NA=Not Applicable

Source:

Value:

(Max = 4)

Source: 3, 4

Value: 1

(Max = 4)

1.4 Highest Human Health Toxicity/ Mobility Matrix Value (from Table A-7)

Final Matrix Value: 6

(Max = 24)

1.5 Environmental Toxicity/Mobility						
Substance		Non-human Mammalian Inhalation Toxicity (mg/m ³)	Acute Value	Mobility (mmHg)	Value	Matrix Value
1	Arsenic	0.00023	NS	NA	NS	-
2	DDT	0.01	NS	NA	NS	-
3	Dieldrin	0.8	10	1.8E-07	1	5
4	Lead	0.5	NS	NA	NS	-

NS=Not Scored, NA=Not Applicable

Highest Environmental Toxicity/Mobility Matrix Value (from Table A-7) = **Final Matrix Value: 5**
(Max = 24)

1.6 Substance Quantity (areal extent)	
Explain Basis: Unknown. Use default Value=1.	Source: 1, 2 Value: 1 (Max = 10)

2.0 MIGRATION POTENTIAL

	Source	Value
2.1 Containment: Spills, no cover	3, 4	10 (Max = 10)

3.0 TARGETS

	Source	Value
3.1 Nearest Population: Less than 1,000 feet	7	10 (Max = 10)
3.2 Distance to [and name(s) of] nearest sensitive environment(s) [fisheries excluded]: 1,500 feet – freshwater wetland	7	6 (Max = 7)
3.3 Population served within 0.5 miles: $\sqrt{3801} = 61.6$	9	62 (Max = 75)

4.0 RELEASE

Explain Basis for scoring a release to air: No confirmed release	Source: 1, 2 Value: 0 (Max = 5)
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WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity										
Substance		Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Arsenic	10	8	763 (rat)	5	0.001	5	1.0	1.75	7
2	DDT	ND	-	87 (rat)	8	0.0005	5	0.8	0.34	5
3	Dieldrin	ND	-	38.3 (rat)	10	5E-05	8	0.8	16	9
4	Lead	5	8	ND	-	0.001 (NOAEL)	10	ND	ND	-

* Potency Factor, ND-No Data

Source: 3, 4

Highest Value: 10
(Max = 10)

Plus 2 Bonus Points? Yes

Final Toxicity Value: 12
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= Arsenic, Value=2
2= DDT, Value=0	2=
3= Dieldrin, Value=0	3=
4=	4= Lead, Value=2

Source: 3, 4

Value: 2
(Max = 3)

1.3 Substance Quantity (volume):	
Explain basis: Unknown, use default value = 1	Source: 1, 2 Value: 1 (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Spills. No containment.	1, 2	10 (Max = 10)
2.2	Net precipitation: Nov-Apr (inches): 38.54" total precipitation, 11.74" evapotranspiration rate, 38.54-11.74 = 26.80 net precip.	5, 6	3 (Max = 5)
2.3	Subsurface hydraulic conductivity: Sand	7	4 (Max = 4)
2.4	Vertical depth to groundwater: 27 feet (according to nearby well logs)	8, 9	6 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public/private supplies, alt. sources available	8, 9	4 (Max = 10)
3.2	Distance to nearest drinking water well: 700 feet	7	4 (Max = 5)
3.3	Population served within 2 miles: >10,000 people	8, 9	10 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: 464 acres (0.75)* $\sqrt{464} = 16.1$	9	17 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: No documented release	1, 2	0 (Max = 5)

SOURCES USED IN SCORING

1. Hemphill, Green, & Associates, LLC., *Limited Phase II Environmental Assessment, Boulevard Nursery*, Travis S. Thornton, June 9, 2009.
2. Thurston County Environmental Health Division, *Initial Investigation Field Report, ERTS#614620*, Gerald Tousley, September 9, 2009.
3. Washington Department of Ecology, *Toxicology Database for Use in Washington Ranking Method Scoring*, January 1992.
4. Washington Department of Ecology, *WARM Scoring Manual*, April 1992.
5. Western Regional Climate Center, Precipitation data from the Olympia, Washington Airport, June 1948 to September 2005.
6. Table 16-Estimated Evapotranspiration, E.M. 2462, p42, for Thurston County Airport.
7. Thurston County Geodata Center, Roads and Transportation Division, September 2012.
8. Washington State Department of Health, Drinking Water Division, Sentry Database, August 2012.
9. Washington Department of Ecology, Water Resources Program, Water Right Tracking System (WRTS), August 2012.