

Technical Memorandum

TO: Matthew Morris, PE, and Connie Groven, PE, Washington State Department of Ecology
CC: Amy Sikora, Washington State Department of Natural Resources
FROM: Sierra Mott and Eric Weber, LHG, CWRE
DATE: January 29, 2021
RE: **Fourth Quarter 2020 Groundwater Monitoring Results
Webster Nursery Site, Site ID 3380
Tumwater, Washington
Project No. 0774006.040.046**

Introduction

This technical memorandum summarizes the results of quarterly groundwater monitoring completed by Landau Associates, Inc. (LAI) at the Washington State Department of Natural Resources Webster Nursery site, a former pesticide-storage warehouse in Tumwater, Washington (site; Figure 1). The site is associated with past releases of organochlorine pesticides to soil and groundwater. Constituents of concern include the organochlorine pesticides heptachlor epoxide (HE; breakdown product of heptachlor) and technical chlordane.

Remedial action excavation and disposal of HE-contaminated soil were completed in August 2018. A summary of the remedial action is provided in a draft Cleanup Action Completion Report (LAI 2018).

Groundwater Monitoring Summary

Fourth quarter 2020 (4Q20) groundwater monitoring was completed on November 17, 2020. Groundwater monitoring was completed in accordance with the framework established by Washington State Department of Ecology (Ecology) Agreed Order No. DE 00TCP-SR295, the Remedial Action Work Plan (LAI 2017), and the Compliance Monitoring Plan (LAI 2019). Groundwater samples were collected from two wells (SW-10R and SW-11R). Analytical Resources, Inc. of Tukwila, Washington analyzed the groundwater samples for organochlorine pesticides using U.S. Environmental Protection Agency Method 8081A low-level.

Groundwater samples were collected with a peristaltic pump and dedicated tubing using low-flow groundwater sampling procedures. Low-flow groundwater monitoring consists of measuring the depth-to-water with an electronic groundwater level indicator, monitoring field parameters with a YSI 554 multi-parameter probe, and measuring turbidity with a handheld meter. One duplicate sample (SW-99 at SW-11R) was collected for quality control purposes.

Groundwater Monitoring Results

Groundwater monitoring results are summarized below:

- HE was detected in SW-10R at a concentration of 0.367 micrograms per liter ($\mu\text{g/L}$), above the cleanup level (CUL; 0.00481 $\mu\text{g/L}$).
- HE was detected in SW-11R at a concentration of 0.0033 $\mu\text{g/L}$, below the CUL. HE was detected in the SW-11R duplicate sample at a concentration of 0.0025 $\mu\text{g/L}$, also below the CUL.
- No analytes other than HE were detected in either well during 4Q20 groundwater monitoring.

November 2020 organochlorine pesticide data are provided in Table 1, and the laboratory data package is provided in Attachment 1. Time series data of recent HE concentrations in groundwater at SW-10R and SW-11R (dating back to January 2010) are presented on Figure 3.

Groundwater elevations at SW-10R and SW-11R were 182.34 and 182.21 feet mean sea level, respectively. This represents an approximate 1-foot increase from the previous monitoring event, completed in August 2020. Depth-to-water and groundwater elevation data are provided in Table 2 and SW-10R groundwater elevation data collected since the remedial action is shown on Figure 3.

Environmental Information Management Submittal

An Environmental Information Management submittal is required. The submittal will be completed in Winter 2020/2021, after this technical memorandum has been submitted to Ecology.

LANDAU ASSOCIATES, INC.



Sierra Mott
Senior Project Scientist



Eric Weber, LHG, CWRE
Principal

SMM/EFW/kjg

[Y:\774\006\R\QUARTERLY GW MONITORING REPORTS\2020_11_4Q20\LAI_WEBSTER NURSERY 4Q20 GW MONITORING_TM_01-29-21.DOCX]

References

- LAI. 2017. Remedial Action Work Plan, Webster Nursery, 9805 Blomberg Street SW, Tumwater, Washington. Landau Associates, Inc. October 31.
- LAI. 2018. Draft Cleanup Action Completion Report, Washington State Department of Natural Resources Webster Nursery, Tumwater, Washington. Landau Associates, Inc. October 12.
- LAI. 2019. Compliance Monitoring Plan, Washington State Department of Natural Resources Webster Nursery, Tumwater, Washington. Landau Associates, Inc. July 24.

Attachments

Figure 1. Vicinity Map

Figure 2. Monitoring Well Network

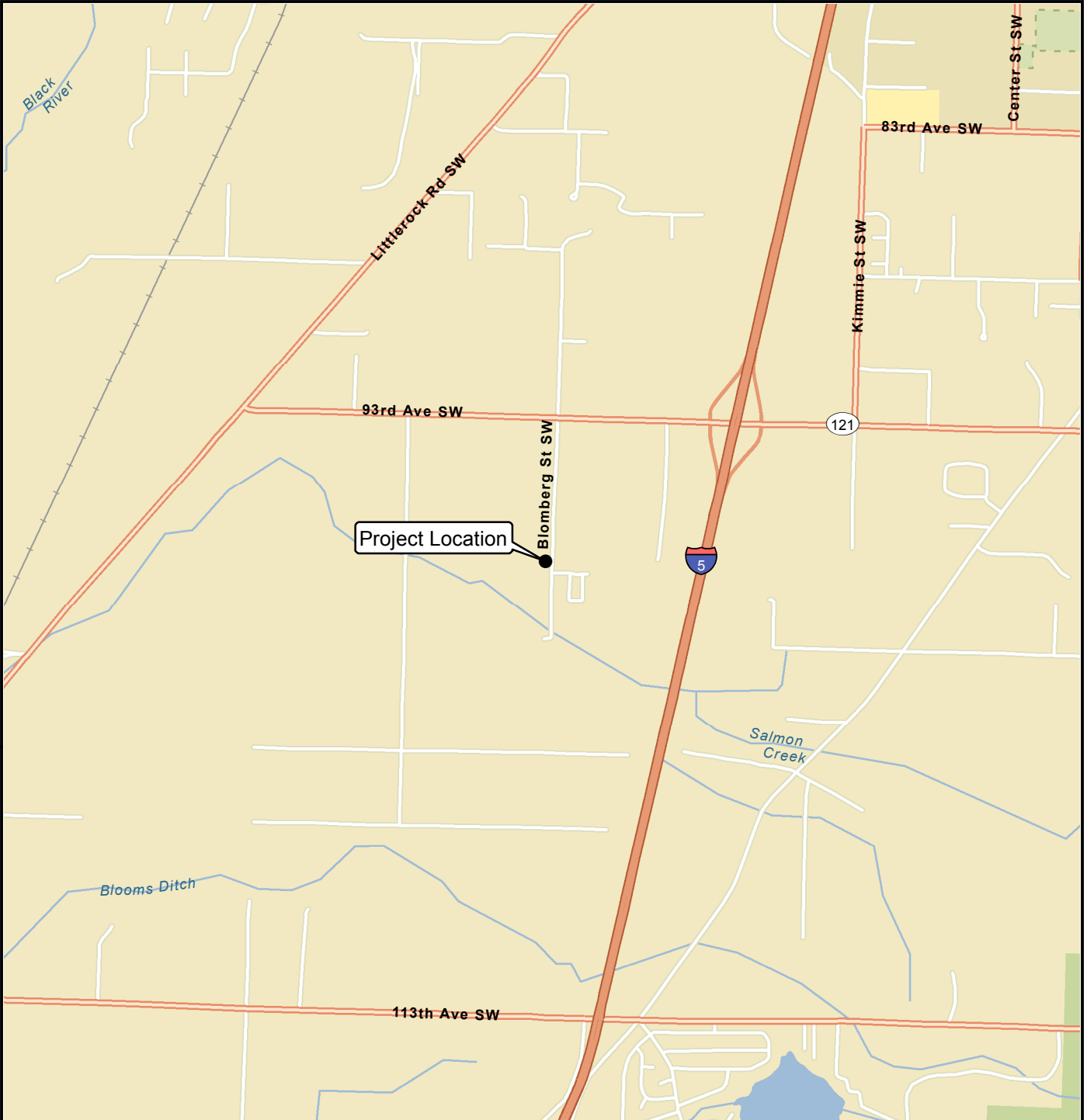
Figure 3. Heptachlor Epoxide and Groundwater Elevation Time Series, SW-10(R) and SW-11(R)

Table 1. Groundwater Analytical Results

Table 2. Groundwater Level Measurements

Attachment 1. November 2020 Laboratory Data Package

G:\Projects\774\006\020\026\FIS\F01_VicinityMap.mxd 5/16/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Data Source: Esri 2012

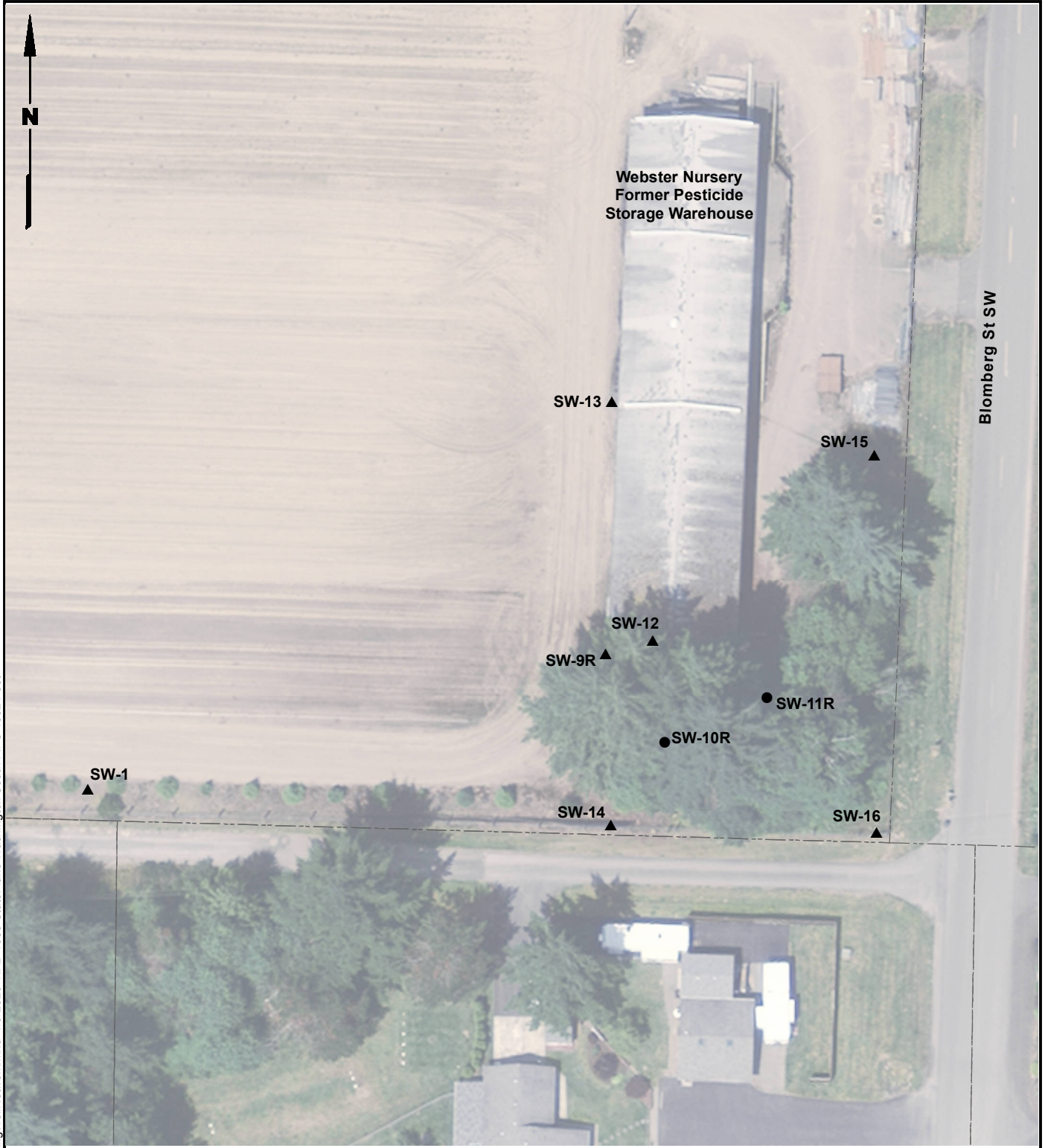


Webster Nursery Site
Tumwater, Washington

Vicinity Map

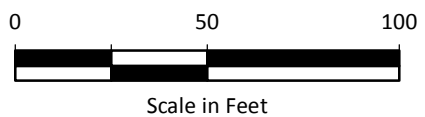
Figure
1

G:\Projects\7741006\0401045\F02MonitoringWellNetwork.mxd 1/9/2020 NAD 1983 StatePlane Washington South FIPS 4602 Feet



Legend

- Pesticide Monitoring Well
- ▲ Other Monitoring Well
- Tax Parcels



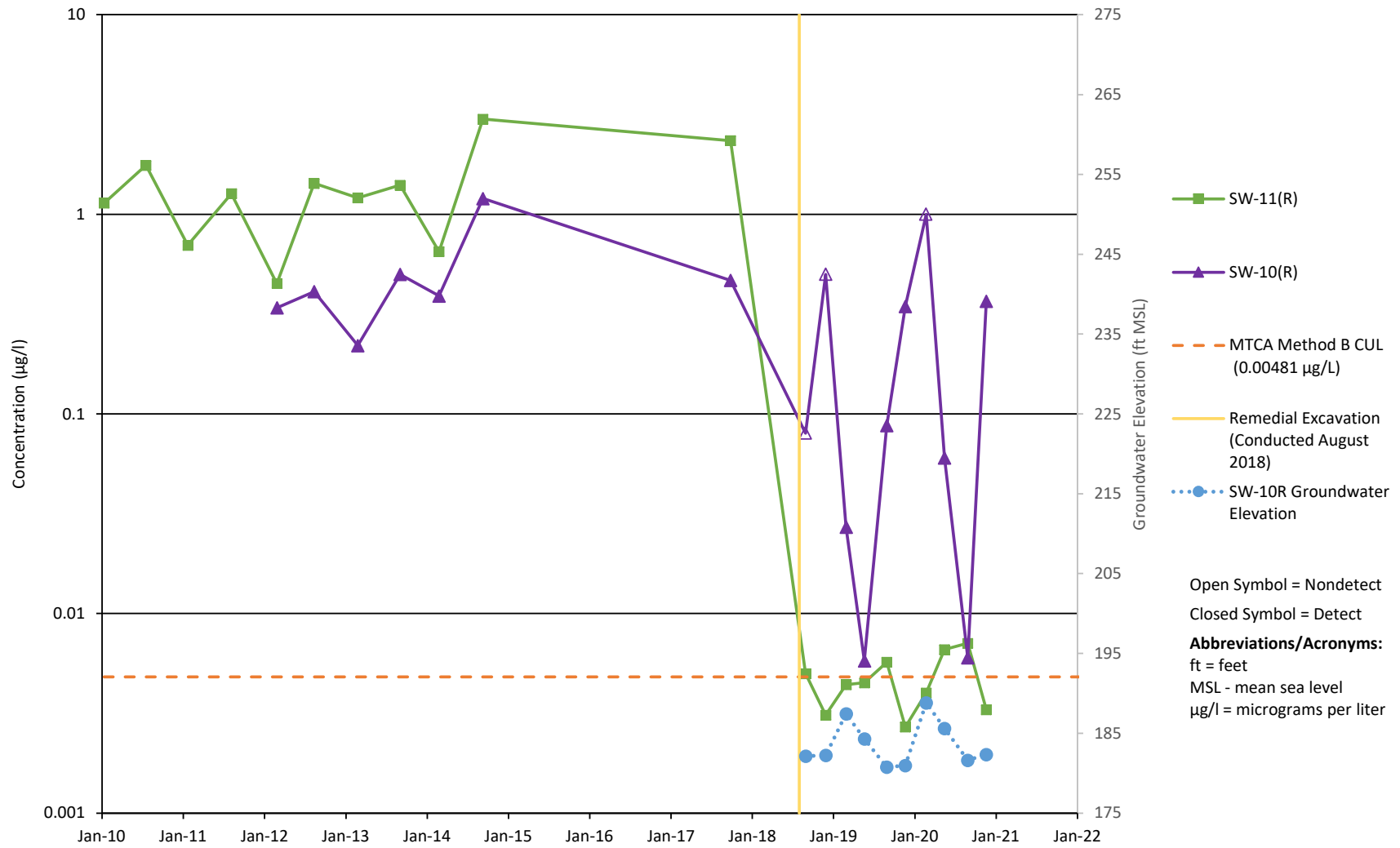
Notes

1. SW-9R, SW-10R, and SW-11R are new (replacement) wells.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Sources: Thurston County GIS; WA DNR Survey, 2018.



Webster Nursery Site Tumwater, Washington	Monitoring Well Network	Figure 2
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Webster Nursery Site
 Tumwater, Washington

**Heptachlor Epoxide and Groundwater
 Elevation Time Series
 SW-10(R) and SW-11(R)**

Figure
3

Table 1
Groundwater Analytical Results
Webster Nursery
Tumwater, Washington

Analyte	MTCA Method B Cleanup Levels	Sample Location, Sample ID, Laboratory SDG, Sample Date, and Sample Type		
		SW-10R	SW-11R	SW-11R
		SW-10R-20201117 20K0292 11/17/2020 N	SW-11R-20201117 20K0292 11/17/2020 N	SW-99-20201117 20K0292 11/17/2020 FD
Pesticides (µg/L; SW-846 8081B)				
4,4'-DDD	--	0.0013 U	0.0013 U	0.0013 U
4,4'-DDE	--	0.0013 U	0.0013 U	0.0013 U
4,4'-DDT	--	0.0013 U	0.0013 U	0.0013 U
Aldrin	--	0.0006 U	0.0006 U	0.0006 U
alpha-BHC	--	0.0006 U	0.0006 U	0.0006 U
beta-BHC	--	0.0006 U	0.0006 U	0.0006 U
Chlordane	0.25	0.0050 U	0.0050 U	0.0050 U
cis-Chlordane	--	0.0090 U	0.0006 U	0.0006 U
delta-BHC	--	0.0006 U	0.0006 U	0.0006 U
Dieldrin	--	0.0013 U	0.0013 U	0.0013 U
Endosulfan I	--	0.0006 U	0.0006 U	0.0006 U
Endosulfan II	--	0.0060 U	0.0013 U	0.0013 U
Endosulfan Sulfate	--	0.0013 U	0.0013 U	0.0013 U
Endrin	--	0.0013 U	0.0013 U	0.0013 U
Endrin Aldehyde	--	0.0013 U	0.0013 U	0.0013 U
Endrin Ketone	--	0.0013 U	0.0013 U	0.0013 U
gamma-BHC	--	0.0006 U	0.0006 U	0.0006 U
Heptachlor	0.0194	0.0006 U	0.0006 U	0.0006 U
Heptachlor Epoxide	0.00481	0.367	0.0033 J	0.0025 J
Methoxychlor	--	0.0063 U	0.0063 U	0.0063 U
Toxaphene	--	0.0625 U	0.0625 U	0.0625 U
trans-Chlordane	--	0.0006 U	0.0006 U	0.0006 U

Notes:

-- = cleanup level not applicable

Bold text = Indicates detected analyte.

Green Box = Detected concentration is greater than the cleanup level

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

Abbreviations and Acronyms:

FD = field duplicate

ID = identification

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

N = primary sample

SDG = sample delivery group

Table 2
Groundwater Level Measurements
Webster Nursery
Tumwater, Washington

Well ID	Top of Casing Elevation (ft)	Depth to Water (ft bgs)	Groundwater Elevation (ft)
SW-10R	193.41	11.07	182.34
SW-11R	192.50	10.29	182.21

Notes:

Groundwater elevation data was collected November 17, 2020.

Abbreviations:

bgs = below ground surface
ft = feet
ID = identification

August 2020 Laboratory Data Package



30 December 2020

Sierra Mott
Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma, WA 98402

RE: Webster Nursery

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
20K0292	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

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.



20K0292



Chain-of-Custody Record

Seattle/Edmonds (425) 778-0907
 Tacoma (253) 926-2493
 Spokane (509) 327-9737
 Portland (503) 542-1080

Date 11/17/20
Page 1 of 1

Turnaround Time:
Standard
Accelerated

Project Name Webster Nursery Project No. 774006.040.046
 Project Location/Event Olympia, WA / 4R Sampling
 Sampler's Name JEC
 Project Contact S. Mott
 Send Results To S. Mott, D. Jorgensen, E. Weber

Pesticides - Organochlorine
EPA 8081B

Testing Parameters

Special Handling Requirements: _____

Shipment Method: _____

Stored on ice: Yes / No

3.6°C

Sample I.D.	Date	Time	Matrix	No. of Containers		Observations/Comments
SW-10R-20201117	11/17/20	1050	AG	2	X	Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - Acid wash cleanup <input type="checkbox"/> - Silica gel cleanup <input type="checkbox"/> Dissolved metal samples were field filtered
SW-11R-20201117	11/17/20	1203	AG	2	X	
SW-99-20201117	11/17/20	1206	AG	2	X	
						Other _____

Relinquished by JEC
 Signature _____
 Printed Name Jesika Cavanaugh
 Company Landau Associates
 Date 11/17/20 Time 1422

Received by Kenny Dang
 Signature _____
 Printed Name Kenny Dang
 Company ARI
 Date 11/17/20 Time 1422

Relinquished by _____
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____

Received by _____
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-10R-20201117	20K0292-01	Water	17-Nov-2020 10:50	17-Nov-2020 14:22
SW-11R-20201117	20K0292-02	Water	17-Nov-2020 12:03	17-Nov-2020 14:22
SW-99-20201117	20K0292-03	Water	17-Nov-2020 12:06	17-Nov-2020 14:22



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

Work Order Case Narrative

Pesticides - EPA Method SW8081B

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of delta-BHC and Cis-Chlordane which failed low on CLP1 and CLP2 is in control for SIL0430. The data was reported from the column that was in control.

4,4-DDE failed low on CLP1. CLP2 values reported for 4,4-DDE for SIL0457.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.



Cooler Receipt Form

ARI Client: Landau Tac.
 COC No(s): _____ (NA)
 Assigned ARI Job No: 20K0292

Project Name: Webster Nursery
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1500 3-6
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5206

Cooler Accepted by: KD Date: 11/17/20 Time: 1422

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 How were bottles sealed in plastic bags? Individually Grouped Not
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI: _____ NA
 Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KD Date: 11/17/20 Time: 1510 Labels checked by: KD

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

SW-10R-20201117
20K0292-01 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 11/17/2020 10:50
Instrument: ECD6 Analyst: YZ/VTS Analyzed: 12/21/2020 20:41

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 20K0292-01 A 01
Preparation Batch: BIK0741 Sample Size: 1000 mL
Prepared: 11/24/2020 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 20K0292-01 A 01
Cleanup Batch: CIL0186 Initial Volume: 0.5 mL
Cleaned: 18-Dec-2020 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 20K0292-01 A 01
Cleanup Batch: CIL0185 Initial Volume: 0.5 mL
Cleaned: 18-Dec-2020 Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.0006	ND	ug/L	U
beta-BHC	319-85-7	1	0.0006	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.0006	ND	ug/L	U
delta-BHC	319-86-8	1	0.0006	ND	ug/L	U
Heptachlor	76-44-8	1	0.0006	ND	ug/L	U
Aldrin	309-00-2	1	0.0006	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.0006	0.202	ug/L	E
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.0006	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.0090	ND	ug/L	Y1, U
Endosulfan I	959-98-8	1	0.0006	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.0013	ND	ug/L	U
Dieldrin	60-57-1	1	0.0013	ND	ug/L	U
Endrin	72-20-8	1	0.0013	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.0060	ND	ug/L	Y1, U
4,4'-DDD	72-54-8	1	0.0013	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.0013	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.0013	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.0013	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.0013	ND	ug/L	U
Methoxychlor	72-43-5	1	0.0063	ND	ug/L	U
Toxaphene	8001-35-2	1	0.0625	ND	ug/L	U
Chlordane (NOS)	57-74-9	1	0.0050	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			30-160 %	84.5	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			30-160 %	95.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			30-160 %	62.7	%	P1
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			30-160 %	36.0	%	P1



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

SW-10R-20201117
20K0292-01RE1 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 11/17/2020 10:50
Instrument: ECD6 Analyst: YZ/VTS Analyzed: 12/29/2020 07:07

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 20K0292-01RE1 A 01
Preparation Batch: BIK0741 Sample Size: 1000 mL
Prepared: 11/24/2020 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 20K0292-01RE1 A 01
Cleanup Batch: CIL0186 Initial Volume: 0.5 mL
Cleaned: 18-Dec-2020 Final Volume: 0.5 mL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 20K0292-01RE1 A 01
Cleanup Batch: CIL0185 Initial Volume: 0.5 mL
Cleaned: 18-Dec-2020 Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	10	0.0063	ND	ug/L	U
beta-BHC	319-85-7	10	0.0063	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	10	0.0063	ND	ug/L	U
delta-BHC	319-86-8	10	0.0063	ND	ug/L	U
Heptachlor	76-44-8	10	0.0063	ND	ug/L	U
Aldrin	309-00-2	10	0.0063	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	10	0.0063	0.367	ug/L	D
trans-Chlordane (beta-Chlordane)	5103-74-2	10	0.0063	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	10	0.0063	ND	ug/L	U
Endosulfan I	959-98-8	10	0.0063	ND	ug/L	U
4,4'-DDE	72-55-9	10	0.0125	ND	ug/L	U
Dieldrin	60-57-1	10	0.0125	ND	ug/L	U
Endrin	72-20-8	10	0.0125	ND	ug/L	U
Endosulfan II	33213-65-9	10	0.0125	ND	ug/L	U
4,4'-DDD	72-54-8	10	0.0125	ND	ug/L	U
Endrin Aldehyde	7421-93-4	10	0.0125	ND	ug/L	U
4,4'-DDT	50-29-3	10	0.0125	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	10	0.0125	ND	ug/L	U
Endrin Ketone	53494-70-5	10	0.0125	ND	ug/L	U
Methoxychlor	72-43-5	10	0.0625	ND	ug/L	U
Toxaphene	8001-35-2	10	0.625	ND	ug/L	U
Chlordane (NOS)	57-74-9	10	0.0500	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			30-160 %	120	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			30-160 %	115	%	
<i>Surrogate: Tetrachlorometaxylene</i>			30-160 %	77.0	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			30-160 %	72.0	%	



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

SW-11R-20201117
20K0292-02 (Water)

Chlorinated Pesticides

Method: EPA 8081B		Sampled: 11/17/2020 12:03
Instrument: ECD6 Analyst: YZ/VTS		Analyzed: 12/21/2020 20:59
Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BIK0741 Prepared: 11/24/2020	Sample Size: 1000 mL Final Volume: 0.5 mL Extract ID: 20K0292-02 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CIL0186 Cleaned: 18-Dec-2020	Initial Volume: 0.5 mL Final Volume: 0.5 mL Extract ID: 20K0292-02 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CIL0185 Cleaned: 18-Dec-2020	Initial Volume: 0.5 mL Final Volume: 0.5 mL Extract ID: 20K0292-02 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.0006	ND	ug/L	U
beta-BHC	319-85-7	1	0.0006	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.0006	ND	ug/L	U
delta-BHC	319-86-8	1	0.0006	ND	ug/L	U
Heptachlor	76-44-8	1	0.0006	ND	ug/L	U
Aldrin	309-00-2	1	0.0006	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.0006	0.0033	ug/L	
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.0006	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.0006	ND	ug/L	U
Endosulfan I	959-98-8	1	0.0006	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.0013	ND	ug/L	U
Dieldrin	60-57-1	1	0.0013	ND	ug/L	U
Endrin	72-20-8	1	0.0013	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.0013	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.0013	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.0013	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.0013	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.0013	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.0013	ND	ug/L	U
Methoxychlor	72-43-5	1	0.0063	ND	ug/L	U
Toxaphene	8001-35-2	1	0.0625	ND	ug/L	U
Chlordane (NOS)	57-74-9	1	0.0050	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			30-160 %	81.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			30-160 %	89.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			30-160 %	71.2	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			30-160 %	54.8	%	



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
30-Dec-2020 11:29

SW-99-20201117
20K0292-03 (Water)

Chlorinated Pesticides

Method: EPA 8081B		Sampled: 11/17/2020 12:06
Instrument: ECD6 Analyst: YZ/VTS		Analyzed: 12/21/2020 21:17
Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BIK0741 Prepared: 11/24/2020	Sample Size: 1000 mL Final Volume: 0.5 mL Extract ID: 20K0292-03 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CIL0186 Cleaned: 18-Dec-2020	Initial Volume: 0.5 mL Final Volume: 0.5 mL Extract ID: 20K0292-03 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CIL0185 Cleaned: 18-Dec-2020	Initial Volume: 0.5 mL Final Volume: 0.5 mL Extract ID: 20K0292-03 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.0006	ND	ug/L	U
beta-BHC	319-85-7	1	0.0006	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.0006	ND	ug/L	U
delta-BHC	319-86-8	1	0.0006	ND	ug/L	U
Heptachlor	76-44-8	1	0.0006	ND	ug/L	U
Aldrin	309-00-2	1	0.0006	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.0006	0.0025	ug/L	
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.0006	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.0006	ND	ug/L	U
Endosulfan I	959-98-8	1	0.0006	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.0013	ND	ug/L	U
Dieldrin	60-57-1	1	0.0013	ND	ug/L	U
Endrin	72-20-8	1	0.0013	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.0013	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.0013	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.0013	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.0013	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.0013	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.0013	ND	ug/L	U
Methoxychlor	72-43-5	1	0.0063	ND	ug/L	U
Toxaphene	8001-35-2	1	0.0625	ND	ug/L	U
Chlordane (NOS)	57-74-9	1	0.0050	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			30-160 %	76.0	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			30-160 %	85.3	%	
<i>Surrogate: Tetrachlorometaxylene</i>			30-160 %	73.0	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			30-160 %	54.1	%	



Landau Associates, Inc. - Tacoma
2107 South C Street
Tacoma WA, 98402

Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

Reported:
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Chlorinated Pesticides - Quality Control

Batch BIK0741 - EPA 3510C SepF

Instrument: ECD6 Analyst: YZ/VTs

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIK0741-BLK1)										
Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 19:10										
alpha-BHC	ND	0.0006	ug/L							U
beta-BHC	ND	0.0006	ug/L							U
gamma-BHC (Lindane)	ND	0.0006	ug/L							U
delta-BHC	ND	0.0006	ug/L							U
Heptachlor	ND	0.0006	ug/L							U
Aldrin	ND	0.0006	ug/L							U
Heptachlor Epoxide	ND	0.0006	ug/L							U
trans-Chlordane (beta-Chlordane)	ND	0.0006	ug/L							U
cis-Chlordane (alpha-chlordane)	ND	0.0006	ug/L							U
Endosulfan I	ND	0.0006	ug/L							U
4,4'-DDE	ND	0.0013	ug/L							U
Dieldrin	ND	0.0013	ug/L							U
Endrin	ND	0.0013	ug/L							U
Endosulfan II	ND	0.0013	ug/L							U
4,4'-DDD	ND	0.0013	ug/L							U
Endrin Aldehyde	ND	0.0013	ug/L							U
4,4'-DDT	ND	0.0013	ug/L							U
Endosulfan Sulfate	ND	0.0013	ug/L							U
Endrin Ketone	ND	0.0013	ug/L							U
Methoxychlor	ND	0.0063	ug/L							U
Toxaphene	ND	0.0625	ug/L							U
Chlordane (NOS)	ND	0.0050	ug/L							U
Surrogate: Decachlorobiphenyl	0.0154		ug/L	0.0200		77.2	30-160			
Surrogate: Decachlorobiphenyl [2C]	0.0166		ug/L	0.0200		82.8	30-160			
Surrogate: Tetrachlorometaxylene	0.0125		ug/L	0.0200		62.3	30-160			
Surrogate: Tetrachlorometaxylene [2C]	0.0131		ug/L	0.0200		65.4	30-160			

LCS (BIK0741-BS1)

Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 19:28

alpha-BHC	0.0096	0.0006	ug/L	0.0100		95.5	30-160			
beta-BHC [2C]	0.0095	0.0006	ug/L	0.0100		94.7	30-160			
gamma-BHC (Lindane)	0.0094	0.0006	ug/L	0.0100		93.7	30-160			
delta-BHC	0.0096	0.0006	ug/L	0.0100		96.4	30-160			
Heptachlor	0.0090	0.0006	ug/L	0.0100		90.1	30-160			
Aldrin [2C]	0.0096	0.0006	ug/L	0.0100		96.5	30-160			
Heptachlor Epoxide [2C]	0.0100	0.0006	ug/L	0.0100		100	30-160			



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Project: Webster Nursery
Project Number: Webster Nursery
Project Manager: Sierra Mott

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Chlorinated Pesticides - Quality Control

Batch BIK0741 - EPA 3510C SepF

Instrument: ECD6 Analyst: YZ/VTs

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIK0741-BS1)				Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 19:28						
trans-Chlordane (beta-Chlordane) [2C]	0.0105	0.0006	ug/L	0.0100		105	30-160			
cis-Chlordane (alpha-chlordane)	0.0124	0.0006	ug/L	0.0100		124	30-160			
Endosulfan I [2C]	0.0106	0.0006	ug/L	0.0100		106	30-160			
4,4'-DDE	0.0217	0.0013	ug/L	0.0200		109	30-160			
Dieldrin	0.0219	0.0013	ug/L	0.0200		109	30-160			
Endrin [2C]	0.0236	0.0013	ug/L	0.0200		118	30-160			
Endosulfan II	0.0252	0.0013	ug/L	0.0200		126	30-160			
4,4'-DDD [2C]	0.0234	0.0013	ug/L	0.0200		117	30-160			
Endrin Aldehyde [2C]	0.0184	0.0013	ug/L	0.0200		92.0	30-160			
4,4'-DDT [2C]	0.0242	0.0013	ug/L	0.0200		121	30-160			
Endosulfan Sulfate [2C]	0.0193	0.0013	ug/L	0.0200		96.5	30-160			
Endrin Ketone [2C]	0.0235	0.0013	ug/L	0.0200		117	30-160			
Methoxychlor	0.108	0.0063	ug/L	0.100		108	30-160			
Surrogate: Decachlorobiphenyl	0.0170		ug/L	0.0200	84.9		30-160			
Surrogate: Decachlorobiphenyl [2C]	0.0185		ug/L	0.0200	92.3		30-160			
Surrogate: Tetrachlorometaxylene	0.0148		ug/L	0.0200	74.2		30-160			
Surrogate: Tetrachlorometaxylene [2C]	0.0145		ug/L	0.0200	72.5		30-160			
LCS (BIK0741-BS2)				Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 20:04						
Toxaphene [2C]	0.892	0.0625	ug/L	1.00		89.2	30-160			
Surrogate: Decachlorobiphenyl	0.0174		ug/L	0.0200	87.1		30-160			
Surrogate: Decachlorobiphenyl [2C]	0.0165		ug/L	0.0200	82.3		30-160			
Surrogate: Tetrachlorometaxylene	0.0139		ug/L	0.0200	69.6		30-160			
Surrogate: Tetrachlorometaxylene [2C]	0.0140		ug/L	0.0200	70.2		30-160			
LCS (BIK0741-BS3)				Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 20:23						
Chlordane (NOS)	0.315	0.0050	ug/L	0.400		78.8	0-200			P1
Surrogate: Decachlorobiphenyl	0.0150		ug/L	0.0200	74.8		30-160			
Surrogate: Decachlorobiphenyl [2C]	0.0153		ug/L	0.0200	76.6		30-160			
Surrogate: Tetrachlorometaxylene	0.0133		ug/L	0.0200	66.3		30-160			
Surrogate: Tetrachlorometaxylene [2C]	0.0120		ug/L	0.0200	60.2		30-160			
LCS Dup (BIK0741-BSD1)				Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 19:46						
alpha-BHC	0.0086	0.0006	ug/L	0.0100		85.7	30-160	10.90	30	



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Project Manager: Sierra Mott

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Chlorinated Pesticides - Quality Control

Batch BIK0741 - EPA 3510C SepF

Instrument: ECD6 Analyst: YZ/VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIK0741-BS01)										
					Prepared: 24-Nov-2020 Analyzed: 21-Dec-2020 19:46					
beta-BHC [2C]	0.0084	0.0006	ug/L	0.0100		83.9	30-160	12.20	30	
gamma-BHC (Lindane)	0.0083	0.0006	ug/L	0.0100		83.4	30-160	11.60	30	
delta-BHC	0.0085	0.0006	ug/L	0.0100		84.8	30-160	12.80	30	
Heptachlor	0.0078	0.0006	ug/L	0.0100		78.0	30-160	14.30	30	
Aldrin [2C]	0.0086	0.0006	ug/L	0.0100		85.6	30-160	12.00	30	
Heptachlor Epoxide [2C]	0.0088	0.0006	ug/L	0.0100		87.6	30-160	13.30	30	
trans-Chlordane (beta-Chlordane) [2C]	0.0092	0.0006	ug/L	0.0100		91.6	30-160	13.40	30	
cis-Chlordane (alpha-chlordane)	0.0107	0.0006	ug/L	0.0100		107	30-160	14.90	30	
Endosulfan I [2C]	0.0093	0.0006	ug/L	0.0100		92.7	30-160	13.10	30	
4,4'-DDE	0.0186	0.0013	ug/L	0.0200		93.2	30-160	15.30	30	
Dieldrin	0.0192	0.0013	ug/L	0.0200		95.8	30-160	13.20	30	
Endrin [2C]	0.0210	0.0013	ug/L	0.0200		105	30-160	11.30	30	
Endosulfan II	0.0244	0.0013	ug/L	0.0200		122	30-160	3.61	30	
4,4'-DDD [2C]	0.0210	0.0013	ug/L	0.0200		105	30-160	10.80	30	
Endrin Aldehyde [2C]	0.0174	0.0013	ug/L	0.0200		86.9	30-160	5.68	30	
4,4'-DDT [2C]	0.0218	0.0013	ug/L	0.0200		109	30-160	10.40	30	
Endosulfan Sulfate [2C]	0.0177	0.0013	ug/L	0.0200		88.4	30-160	8.73	30	
Endrin Ketone [2C]	0.0211	0.0013	ug/L	0.0200		106	30-160	10.40	30	
Methoxychlor	0.0984	0.0063	ug/L	0.100		98.4	30-160	9.60	30	
Surrogate: Decachlorobiphenyl	0.0146		ug/L	0.0200		72.9	30-160			
Surrogate: Decachlorobiphenyl [2C]	0.0159		ug/L	0.0200		79.3	30-160			
Surrogate: Tetrachlorometaxylene	0.0135		ug/L	0.0200		67.3	30-160			
Surrogate: Tetrachlorometaxylene [2C]	0.0129		ug/L	0.0200		64.5	30-160			



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Certified Analyses included in this Report

Analyte	Certifications
EPA 8081B in Water	
alpha-BHC	DoD-ELAP,WADOE,NELAP,CALAP
alpha-BHC	DoD-ELAP,NELAP,CALAP
alpha-BHC	DoD-ELAP,WADOE,CALAP
alpha-BHC	DoD-ELAP,WADOE,NELAP
alpha-BHC [2C]	DoD-ELAP,WADOE,NELAP
alpha-BHC [2C]	DoD-ELAP,NELAP,CALAP
alpha-BHC [2C]	DoD-ELAP,WADOE,NELAP,CALAP
alpha-BHC [2C]	DoD-ELAP,WADOE,CALAP
beta-BHC	DoD-ELAP,WADOE,NELAP
beta-BHC	DoD-ELAP,WADOE,CALAP
beta-BHC	DoD-ELAP,NELAP,CALAP
beta-BHC	DoD-ELAP,WADOE,NELAP,CALAP
beta-BHC [2C]	DoD-ELAP,WADOE,NELAP,CALAP
beta-BHC [2C]	DoD-ELAP,WADOE,NELAP
beta-BHC [2C]	DoD-ELAP,WADOE,CALAP
beta-BHC [2C]	DoD-ELAP,NELAP,CALAP
gamma-BHC (Lindane)	DoD-ELAP,WADOE,NELAP
gamma-BHC (Lindane)	DoD-ELAP,WADOE,CALAP
gamma-BHC (Lindane)	DoD-ELAP,NELAP,CALAP
gamma-BHC (Lindane)	DoD-ELAP,WADOE,NELAP,CALAP
gamma-BHC (Lindane) [2C]	DoD-ELAP,WADOE,NELAP,CALAP
gamma-BHC (Lindane) [2C]	DoD-ELAP,WADOE,NELAP
gamma-BHC (Lindane) [2C]	DoD-ELAP,NELAP,CALAP
gamma-BHC (Lindane) [2C]	DoD-ELAP,WADOE,CALAP
delta-BHC	DoD-ELAP,WADOE,NELAP
delta-BHC	DoD-ELAP,WADOE,NELAP,CALAP
delta-BHC	DoD-ELAP,NELAP,CALAP
delta-BHC	DoD-ELAP,WADOE,CALAP
delta-BHC [2C]	DoD-ELAP,WADOE,NELAP,CALAP
delta-BHC [2C]	DoD-ELAP,WADOE,CALAP
delta-BHC [2C]	DoD-ELAP,WADOE,NELAP
delta-BHC [2C]	DoD-ELAP,NELAP,CALAP
Heptachlor	DoD-ELAP,WADOE,CALAP
Heptachlor	DoD-ELAP,NELAP,CALAP
Heptachlor	DoD-ELAP,WADOE,NELAP



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Heptachlor	DoD-ELAP,WADOE,NELAP,CALAP
Heptachlor [2C]	DoD-ELAP,WADOE,NELAP
Heptachlor [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Heptachlor [2C]	DoD-ELAP,NELAP,CALAP
Heptachlor [2C]	DoD-ELAP,WADOE,CALAP
Aldrin	DoD-ELAP,WADOE,NELAP,CALAP
Aldrin	DoD-ELAP,WADOE,NELAP
Aldrin	DoD-ELAP,WADOE,CALAP
Aldrin	DoD-ELAP,NELAP,CALAP
Aldrin [2C]	DoD-ELAP,WADOE,CALAP
Aldrin [2C]	DoD-ELAP,WADOE,NELAP
Aldrin [2C]	DoD-ELAP,NELAP,CALAP
Aldrin [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Heptachlor Epoxide	DoD-ELAP,WADOE,NELAP,CALAP
Heptachlor Epoxide	DoD-ELAP,WADOE,NELAP
Heptachlor Epoxide	DoD-ELAP,NELAP,CALAP
Heptachlor Epoxide	DoD-ELAP,WADOE,CALAP
Heptachlor Epoxide [2C]	DoD-ELAP,WADOE,NELAP
Heptachlor Epoxide [2C]	DoD-ELAP,WADOE,CALAP
Heptachlor Epoxide [2C]	DoD-ELAP,NELAP,CALAP
Heptachlor Epoxide [2C]	DoD-ELAP,WADOE,NELAP,CALAP
trans-Chlordane (beta-Chlordane)	DoD-ELAP,WADOE,NELAP
trans-Chlordane (beta-Chlordane)	DoD-ELAP,WADOE,NELAP,CALAP
trans-Chlordane (beta-Chlordane)	DoD-ELAP,WADOE,CALAP
trans-Chlordane (beta-Chlordane)	DoD-ELAP,NELAP,CALAP
trans-Chlordane (beta-Chlordane) [2C]	DoD-ELAP,WADOE,NELAP,CALAP
trans-Chlordane (beta-Chlordane) [2C]	DoD-ELAP,WADOE,NELAP
trans-Chlordane (beta-Chlordane) [2C]	DoD-ELAP,WADOE,CALAP
trans-Chlordane (beta-Chlordane) [2C]	DoD-ELAP,NELAP,CALAP
cis-Chlordane (alpha-chlordane)	DoD-ELAP,WADOE,NELAP
cis-Chlordane (alpha-chlordane)	DoD-ELAP,WADOE,CALAP
cis-Chlordane (alpha-chlordane)	DoD-ELAP,NELAP,CALAP
cis-Chlordane (alpha-chlordane)	DoD-ELAP,WADOE,NELAP,CALAP
cis-Chlordane (alpha-chlordane) [2C]	DoD-ELAP,NELAP,CALAP
cis-Chlordane (alpha-chlordane) [2C]	DoD-ELAP,WADOE,CALAP
cis-Chlordane (alpha-chlordane) [2C]	DoD-ELAP,WADOE,NELAP,CALAP
cis-Chlordane (alpha-chlordane) [2C]	DoD-ELAP,WADOE,NELAP
Endosulfan I	DoD-ELAP,WADOE,CALAP
Endosulfan I	DoD-ELAP,NELAP,CALAP



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Endosulfan I	DoD-ELAP,WADOE,NELAP,CALAP
Endosulfan I	DoD-ELAP,WADOE,NELAP
Endosulfan I [2C]	DoD-ELAP,WADOE,NELAP
Endosulfan I [2C]	DoD-ELAP,WADOE,CALAP
Endosulfan I [2C]	DoD-ELAP,NELAP,CALAP
Endosulfan I [2C]	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDE	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDE	DoD-ELAP,NELAP,CALAP
4,4'-DDE	DoD-ELAP,WADOE,NELAP
4,4'-DDE	DoD-ELAP,WADOE,CALAP
4,4'-DDE [2C]	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDE [2C]	DoD-ELAP,WADOE,CALAP
4,4'-DDE [2C]	DoD-ELAP,NELAP,CALAP
4,4'-DDE [2C]	DoD-ELAP,WADOE,NELAP
Dieldrin	DoD-ELAP,WADOE,NELAP
Dieldrin	DoD-ELAP,WADOE,CALAP
Dieldrin	DoD-ELAP,NELAP,CALAP
Dieldrin	DoD-ELAP,WADOE,NELAP,CALAP
Dieldrin [2C]	DoD-ELAP,NELAP,CALAP
Dieldrin [2C]	DoD-ELAP,WADOE,CALAP
Dieldrin [2C]	DoD-ELAP,WADOE,NELAP
Dieldrin [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin	DoD-ELAP,WADOE,NELAP
Endrin	DoD-ELAP,WADOE,CALAP
Endrin	DoD-ELAP,NELAP,CALAP
Endrin	DoD-ELAP,WADOE,NELAP,CALAP
Endrin [2C]	DoD-ELAP,WADOE,NELAP
Endrin [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin [2C]	DoD-ELAP,NELAP,CALAP
Endrin [2C]	DoD-ELAP,WADOE,CALAP
Endosulfan II	DoD-ELAP,WADOE,NELAP,CALAP
Endosulfan II	DoD-ELAP,WADOE,CALAP
Endosulfan II	DoD-ELAP,NELAP,CALAP
Endosulfan II	DoD-ELAP,WADOE,NELAP
Endosulfan II [2C]	DoD-ELAP,WADOE,NELAP
Endosulfan II [2C]	DoD-ELAP,WADOE,CALAP
Endosulfan II [2C]	DoD-ELAP,NELAP,CALAP
Endosulfan II [2C]	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDD	DoD-ELAP,WADOE,NELAP



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4,4'-DDD	DoD-ELAP,WADOE,CALAP
4,4'-DDD	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDD	DoD-ELAP,NELAP,CALAP
4,4'-DDD [2C]	DoD-ELAP,WADOE,NELAP
4,4'-DDD [2C]	DoD-ELAP,WADOE,CALAP
4,4'-DDD [2C]	DoD-ELAP,NELAP,CALAP
4,4'-DDD [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Aldehyde	DoD-ELAP,WADOE,NELAP
Endrin Aldehyde	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Aldehyde	DoD-ELAP,NELAP,CALAP
Endrin Aldehyde	DoD-ELAP,WADOE,CALAP
Endrin Aldehyde [2C]	DoD-ELAP,NELAP,CALAP
Endrin Aldehyde [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Aldehyde [2C]	DoD-ELAP,WADOE,NELAP
Endrin Aldehyde [2C]	DoD-ELAP,WADOE,CALAP
4,4'-DDT	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDT	DoD-ELAP,NELAP,CALAP
4,4'-DDT	DoD-ELAP,WADOE,CALAP
4,4'-DDT	DoD-ELAP,WADOE,NELAP
4,4'-DDT [2C]	DoD-ELAP,WADOE,CALAP
4,4'-DDT [2C]	DoD-ELAP,WADOE,NELAP
4,4'-DDT [2C]	DoD-ELAP,WADOE,NELAP,CALAP
4,4'-DDT [2C]	DoD-ELAP,NELAP,CALAP
Endosulfan Sulfate	DoD-ELAP,NELAP,CALAP
Endosulfan Sulfate	DoD-ELAP,WADOE,CALAP
Endosulfan Sulfate	DoD-ELAP,WADOE,NELAP
Endosulfan Sulfate	DoD-ELAP,WADOE,NELAP,CALAP
Endosulfan Sulfate [2C]	DoD-ELAP,WADOE,NELAP
Endosulfan Sulfate [2C]	DoD-ELAP,WADOE,CALAP
Endosulfan Sulfate [2C]	DoD-ELAP,NELAP,CALAP
Endosulfan Sulfate [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Ketone	DoD-ELAP,WADOE,NELAP
Endrin Ketone	DoD-ELAP,NELAP,CALAP
Endrin Ketone	DoD-ELAP,WADOE,CALAP
Endrin Ketone	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Ketone [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Endrin Ketone [2C]	DoD-ELAP,NELAP,CALAP
Endrin Ketone [2C]	DoD-ELAP,WADOE,NELAP
Endrin Ketone [2C]	DoD-ELAP,WADOE,CALAP



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Methoxychlor	DoD-ELAP,WADOE,NELAP
Methoxychlor	DoD-ELAP,WADOE,NELAP,CALAP
Methoxychlor	DoD-ELAP,NELAP,CALAP
Methoxychlor	DoD-ELAP,WADOE,CALAP
Methoxychlor [2C]	DoD-ELAP,WADOE,NELAP
Methoxychlor [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Methoxychlor [2C]	DoD-ELAP,WADOE,CALAP
Methoxychlor [2C]	DoD-ELAP,NELAP,CALAP
Hexachlorobutadiene	DoD-ELAP,NELAP,CALAP
Hexachlorobutadiene	DoD-ELAP,WADOE,NELAP,CALAP
Hexachlorobutadiene	DoD-ELAP,WADOE,NELAP
Hexachlorobutadiene	DoD-ELAP,WADOE,CALAP
Hexachlorobutadiene [2C]	DoD-ELAP,NELAP,CALAP
Hexachlorobutadiene [2C]	DoD-ELAP,WADOE,NELAP
Hexachlorobutadiene [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Hexachlorobutadiene [2C]	DoD-ELAP,WADOE,CALAP
Hexachlorobenzene	DoD-ELAP,WADOE,NELAP,CALAP
Hexachlorobenzene	DoD-ELAP,NELAP,CALAP
Hexachlorobenzene	DoD-ELAP,WADOE,CALAP
Hexachlorobenzene	DoD-ELAP,WADOE,NELAP
Hexachlorobenzene [2C]	DoD-ELAP,WADOE,NELAP
Hexachlorobenzene [2C]	DoD-ELAP,WADOE,NELAP,CALAP
Hexachlorobenzene [2C]	DoD-ELAP,NELAP,CALAP
Hexachlorobenzene [2C]	DoD-ELAP,WADOE,CALAP
2,4'-DDE	DoD-ELAP
2,4'-DDE	DoD-ELAP
2,4'-DDE	DoD-ELAP
2,4'-DDE	DoD-ELAP
2,4'-DDE [2C]	DoD-ELAP
2,4'-DDE [2C]	DoD-ELAP
2,4'-DDE [2C]	DoD-ELAP
2,4'-DDE [2C]	DoD-ELAP
2,4'-DDD	DoD-ELAP
2,4'-DDD	DoD-ELAP
2,4'-DDD	DoD-ELAP
2,4'-DDD	DoD-ELAP
2,4'-DDD [2C]	DoD-ELAP
2,4'-DDD [2C]	DoD-ELAP
2,4'-DDD [2C]	DoD-ELAP



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2,4'-DDD [2C]	DoD-ELAP
2,4'-DDT	DoD-ELAP
2,4'-DDT	DoD-ELAP
2,4'-DDT	DoD-ELAP
2,4'-DDT	DoD-ELAP
2,4'-DDT [2C]	DoD-ELAP
2,4'-DDT [2C]	DoD-ELAP
2,4'-DDT [2C]	DoD-ELAP
2,4'-DDT [2C]	DoD-ELAP
Oxychlordan	DoD-ELAP
Oxychlordan	DoD-ELAP
Oxychlordan	DoD-ELAP
Oxychlordan	DoD-ELAP
Oxychlordan [2C]	DoD-ELAP
Oxychlordan [2C]	DoD-ELAP
Oxychlordan [2C]	DoD-ELAP
Oxychlordan [2C]	DoD-ELAP
cis-Nonachlor	DoD-ELAP
cis-Nonachlor	DoD-ELAP
cis-Nonachlor	DoD-ELAP
cis-Nonachlor	DoD-ELAP
cis-Nonachlor [2C]	DoD-ELAP
cis-Nonachlor [2C]	DoD-ELAP
cis-Nonachlor [2C]	DoD-ELAP
cis-Nonachlor [2C]	DoD-ELAP
trans-Nonachlor	DoD-ELAP
trans-Nonachlor	DoD-ELAP
trans-Nonachlor	DoD-ELAP
trans-Nonachlor	DoD-ELAP
trans-Nonachlor [2C]	DoD-ELAP
trans-Nonachlor [2C]	DoD-ELAP
trans-Nonachlor [2C]	DoD-ELAP
trans-Nonachlor [2C]	DoD-ELAP
Mirex	DoD-ELAP
Mirex	DoD-ELAP
Mirex	DoD-ELAP
Mirex	DoD-ELAP
Mirex [2C]	DoD-ELAP
Mirex [2C]	DoD-ELAP



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Mirex [2C]	DoD-ELAP
Mirex [2C]	DoD-ELAP
Toxaphene	DoD-ELAP
Toxaphene	DoD-ELAP
Toxaphene	DoD-ELAP
Toxaphene	DoD-ELAP
Toxaphene [2C]	DoD-ELAP
Toxaphene [2C]	DoD-ELAP
Toxaphene [2C]	DoD-ELAP
Toxaphene [2C]	DoD-ELAP
Chlordane, technical	DoD-ELAP
Chlordane, technical	DoD-ELAP
Chlordane, technical	DoD-ELAP
Chlordane, technical	DoD-ELAP
Chlordane, technical [2C]	DoD-ELAP
Chlordane, technical [2C]	DoD-ELAP
Chlordane, technical [2C]	DoD-ELAP
Chlordane, technical [2C]	DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021



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Notes and Definitions

- * Flagged value is not within established control limits.
- D The reported value is from a dilution
- E The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
- P1 The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
- U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
- Y1 Raised reporting limit due to interference
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- [2C] Indicates this result was quantified on the second column on a dual column analysis.