



June 07, 2023

Service Request No:K2305705

Kathryn Myklebust
Woodland, City of
P.O. Box 9
Woodland, WA 98674

Laboratory Results for: Horseshoe Lake

Dear Kathryn,

Enclosed are the results of the sample(s) submitted to our laboratory May 18, 2023
For your reference, these analyses have been assigned our service request number **K2305705**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Luke Rahn
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
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ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water

Service Request: K2305705
Date Received: 05/18/2023

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier I level requested by the client.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 05/18/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by  Date 06/07/2023



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: Bouy 2-Swim Beach	Lab ID: K2305705-001
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Analyte	Results	Flag	MDL	MRL	Units	Method
Chlorophyll A	2.7			1.1	mg/m3	SM 10200 H
Escherichia coli	3.1			1.0	MPN/100m L	SM 9223 B
Phosphorus, Total	0.040			0.020	mg/L	365.3

CLIENT ID: Bouy 3-Mid Point	Lab ID: K2305705-002
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Analyte	Results	Flag	MDL	MRL	Units	Method
Chlorophyll A	3.1			1.1	mg/m3	SM 10200 H



Sample Receipt Information

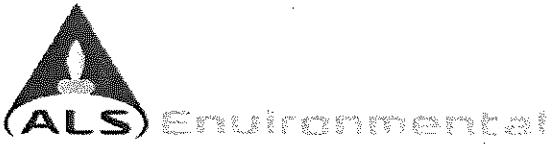
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Client: Woodland, City of
Project: Horseshoe Lake

Service Request:K2305705

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2305705-001	Bouy 2-Swim Beach	5/18/2023	1100
K2305705-002	Bouy 3-Mid Point	5/18/2023	1100



CHAIN OF CUSTODY
129734

001

SR# 1230705
COC Set ___ of ___
COC# _____

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www.alsglobal.com

Project Name <u>HSL resting</u>		Project Number <u>Horseshoe Lake</u>		NUMBER OF CONTAINERS	8H	48H	28D						Remarks <u>Secchi</u> <u>Surf Temp</u>	
Project Manager <u>Kathryn Myklebust</u>		Company <u>City of Woodland</u>			SM 9223 B / Ontray EC C	SM 10200 H / Chlorophylla UF	365.3 / Phos T	1	2	3	4	5		
Address <u>PO Box 9 Woodland, WA 98674</u>		Phone # <u>360 775-7499</u>			Sampler Signature <u>[Signature]</u>		Sampler Printed Name <u>Gary Oliver</u>							
Address <u>PO Box 9 Woodland, WA 98674</u>		email <u>myklebustk@ci.woodland.wa.us</u>												
Address <u>PO Box 9 Woodland, WA 98674</u>		Sampler Printed Name <u>W.L. US</u>												
CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix											
<u>1 Bay 2 - Swim Beach</u>	<u>2</u>	<u>5/18/23</u>	<u>H₂O</u>	<u>3</u>	<u>X</u>	<u>X</u>	<u>X</u>							
<u>2 Bay 3 - Mid Point</u>	<u>3</u>	<u>5/18/23</u>	<u>H₂O</u>	<u>2</u>		<u>X</u>	<u>X</u>							
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Report Requirements <input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input type="checkbox"/> IV. Data Validation Report <input type="checkbox"/> V. EDD	Invoice Information P.O.# _____ Bill To: _____ _____ _____	Circle which metals are to be analyzed Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg	
	Turnaround Requirements <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 5 Day <input type="checkbox"/> Standard	Special Instructions/Comments: _____ *Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)	
	Requested Report Date _____		

Relinquished By: <u>[Signature]</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Received By: <u>[Signature]</u>	Relinquished By: <u>[Signature]</u>	Received By: <u>[Signature]</u>
Signature <u>Gary Oliver</u>	Signature <u>Kathryn Myklebust</u>	Signature <u>Kathryn E. Myklebust</u>	Signature <u>Frank Pawlowski</u>	Signature <u>Frank Pawlowski</u>	Signature <u>[Signature]</u>
Printed Name <u>City of Woodland</u>	Printed Name <u>City of Woodland</u>	Printed Name <u>City of Woodland</u>	Printed Name <u>City of Woodland</u>	Printed Name <u>City of Woodland</u>	Printed Name <u>ALS</u>
Firm <u>City of Woodland</u>	Firm <u>City of Woodland</u>	Firm <u>City of Woodland</u>	Firm <u>City of Woodland</u>	Firm <u>City of Woodland</u>	Firm <u>ALS</u>
Date/Time <u>5/18/23 11:10 AM</u>	Date/Time <u>5/18/23 11:10 AM</u>	Date/Time <u>5/18/23 2:40 PM</u>	Date/Time <u>5/18/23 2:40 PM</u>	Date/Time <u>5/18/23 1:33 PM</u>	Date/Time <u>5/18/23 1:53 PM</u>

PM LL

Cooler Receipt and Preservation Form

Client City of Woodland Service Request K23 05705
Received: 5/18/23 Opened: 5/18/23 By: [Signature] Unloaded: 5/18/23 By: [Signature]

- 1. Samples were received via? **USPS** Fed Ex **UPS** **DHL** **PDX** **Courier** Hand Delivered
- 2. Samples were received in: (circle) Cooler **Box** **Envelope** **Other** NA
- 3. Were custody seals on coolers? **NA** **Y** N If yes, how many and where? _____
If present, were custody seals intact? **Y** **N** If present, were they signed and dated? **Y** **N**

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number <u>NA</u>	Filed
<u>10.2</u>	<u>10.9</u>	<u>1801</u>	<u>129734</u>				

- 4. Was a Temperature Blank present in cooler? **NA** Y **N** If yes, note the temperature in the appropriate column above:
If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
- 5. Were samples received within the method specified temperature ranges? **NA** **Y** N
If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. **NA** Y **N**
- If applicable, tissue samples were received: **Frozen** **Partially Thawed** **Thawed**
- 6. Packing material: **Inserts** **Baggies** Bubble Wrap **Gel Packs** Wet Ice **Dry Ice** **Sleeves**
- 7. Were custody papers properly filled out (ink, signed, etc.)? **NA** Y **N**
- 8. Were samples received in good condition (unbroken) **NA** Y **N**
- 9. Were all sample labels complete (ie, analysis, preservation, etc.)? **NA** Y **N**
- 10. Did all sample labels and tags agree with custody papers? **NA** Y **N**
- 11. Were appropriate bottles/containers and volumes received for the tests indicated? **NA** Y **N**
- 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below **NA** Y **N**
- 13. Were VOA vials received without headspace? Indicate in the table below. **NA** Y **N**
- 14. Was C12/Res negative? **NA** Y **N**
- 15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM **NA** Y **N**
- 16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? **NA** Y **N** Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: No Times on COC or Samples



Miscellaneous Forms

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Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Woodland, City of
Project: Horseshoe Lake/

Service Request: K2305705

Sample Name: Bouy 2-Swim Beach
Lab Code: K2305705-001
Sample Matrix: Water

Date Collected: 05/18/23
Date Received: 05/18/23

Analysis Method
365.3
SM 10200 H
SM 9223 B

Extracted/Digested By
JHINSON
MRICH

Analyzed By
JHINSON
MRICH
JVANSTEENBERG

Sample Name: Bouy 3-Mid Point
Lab Code: K2305705-002
Sample Matrix: Water

Date Collected: 05/18/23
Date Received: 05/18/23

Analysis Method
365.3
SM 10200 H

Extracted/Digested By
JHINSON
MRICH

Analyzed By
JHINSON
MRICH



Sample Results

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General Chemistry

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Analytical Report

Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water
Sample Name: Bouy 2-Swim Beach
Lab Code: K2305705-001

Service Request: K2305705
Date Collected: 05/18/23 11:00
Date Received: 05/18/23 15:30
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorophyll A	SM 10200 H	2.7	mg/m3	1.1	1	06/06/23 15:24	06/06/23	
Escherichia coli	SM 9223 B	3.1	MPN/100mL	1.0	1	05/18/23 16:16	NA	
Phosphorus, Total	365.3	0.040	mg/L	0.020	1	05/22/23 16:00	05/22/23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water
Sample Name: Bouy 3-Mid Point
Lab Code: K2305705-002

Service Request: K2305705
Date Collected: 05/18/23 11:00
Date Received: 05/18/23 15:30
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorophyll A	SM 10200 H	3.1	mg/m3	1.1	1	06/06/23 15:24	06/06/23	
Phosphorus, Total	365.3	ND U	mg/L	0.020	1	05/22/23 16:00	05/22/23	



QC Summary Forms

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Analytical Report

Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2305705-MB1

Service Request: K2305705
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Chlorophyll A	SM 10200 H	ND U	mg/m3	0.60	1	06/06/23 15:24	06/06/23	
Phosphorus, Total	365.3	ND U	mg/L	0.020	1	05/22/23 16:00	05/22/23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2305705-MB2

Service Request: K2305705
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Chlorophyll A	SM 10200 H	ND U	mg/m3	0.60	1	06/06/23 15:24	06/06/23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Woodland, City of
Project: Horseshoe Lake
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2305705-MB3

Service Request: K2305705
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Chlorophyll A	SM 10200 H	ND U	mg/m3	0.60	1	06/06/23 15:24	06/06/23	