

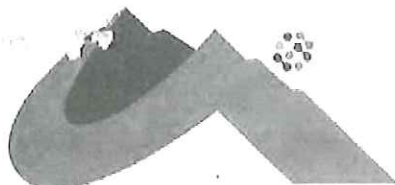
Form 2C NPDES

Attachment 1 – Laboratory Results

RECEIVED
SEP 19 2019
Dept of Ecology
Central Regional Office

*PUD No. 1 of Chelan County
PO Box 1231
Wenatchee, WA 98807*

Rocky Reach Hydroelectric Project



CASCADE ANALYTICAL
A EUROFINS COMPANY
1-800-545-4206

(509) 662-1888
Fax: (509) 662-8183
3019 G. S. Center Road
Wenatchee, WA 98801

(509) 452-7707 Batch: 996553
Fax: (509) 452-7773 Client: Chelan Co PUD
1008 W. Ahtanum Rd Account: 00765
Union Gap, WA 98903 Sampler: Michael Darlington
PO Number:

--- Water Analytical Report ---

Report Date: 9/ 6/19

Chelan Co PUD
PO Box 1231
Wenatchee, WA 98801

Laboratory Number: 19-E026188
Sample Identification: Unwatering Sump

Date Received: 8/ 6/19
Date Sampled: 8/ 6/19

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Other Analysis	Analyzed by TAL, BSK, ALS					
Field Total Res. Chlorine	< 0.05	mg/L	0.05	SM 4500-Cl G	8/ 6/19	
Total Suspended Solids	1.3	mg/l	1.0	SM 2540-D	8/ 7/19	
Ammonia	< 0.07	mg/L	0.07	SM 4500NH3-G	8/ 7/19	
Biological Oxygen Demand	< 2	mg/L	2	SM 5210-B	8/ 7/19	
Chemical Oxygen Demand	11.0	mg/L	5	SM 5220D	8/12/19	
Hexane Extract. Material	1.4	mg/L	1.4	EPA 1664B	8/ 7/19	
Total Organic Carbon	1.31	mg/L	0.5	SM 5310-C	8/ 9/19	

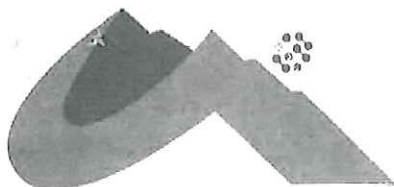
Approved By Name: **Andy Schut**
Lab Manager/Yakima

Signature: 

Function: _____

NOTE: Certification programs include controlled sampling by Eurofins-Cascade Analytical personnel. Duplicate samples are collected, registered, and prepared for security. Analysis is performed in a timely manner and results are returned with an indicator of certification. All certification programs provide a chain of custody from point of sampling through results reporting. Eurofins-Cascade Analytical is not responsible for any misrepresentation which may have occurred before the point of sampling. Results relate only to the items tested and the sample(s) as received by the laboratory.

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Fax: (509) 452-7773 Client: Chelan Co PUD
1008 W. Ahtanum Rd Account: 00765
Union Gap, WA 98903 Sampler: Michael Darlington
PO Number:

--- Water Analytical Report ---

Report Date: 9/ 6/19

Chelan Co PUD
PO Box 1231
Wenatchee, WA 98801

Laboratory Number: 19-E026189
Sample Identification: Station Sump

Date Received: 8/ 6/19
Date Sampled: 8/ 6/19

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Other Analysis	Analyzed by TAL, ARI, BSK					
Field Total Res. Chlorine	< 0.05	mg/L	0.05	SM 4500-Cl G	8/ 6/19	
Total Suspended Solids	< 1	mg/l	1.0	SM 2540-D	8/ 7/19	
Ammonia	< 0.07	mg/L	0.07	SM 4500NH3-G	8/ 7/19	
Biological Oxygen Demand	< 2	mg/L	2	SM 5210-B	8/ 7/19	
Chemical Oxygen Demand	11.0	mg/L	5	SM 5220D	8/12/19	
Hexane Extract. Material	2.3	mg/L	1.4	EPA 1664B	8/ 7/19	
Total Organic Carbon	0.98	mg/L	0.5	SM 5310-C	8/ 9/19	

Approved By Name:

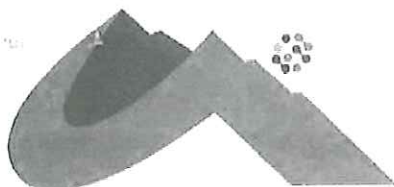
Andy Schut
Lab Manager/Yakima

Signature:

Function:

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(509) 452-7707 Batch: 996553
Fax: (509) 452-7773 Client: Chelan Co PUD
1008 W. Ahtanum Rd Account: 00765
Union Gap, WA 98903 Sampler: Michael Darlington
PO Number:

--- Water Analytical Report ---

Report Date: 9/ 6/19

Chelan Co PUD
PO Box 1231
Wenatchee, WA 98801

Laboratory Number: 19-E026190
Sample Identification: Intake Water

Date Received: 8/ 6/19
Date Sampled: 8/ 6/19

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Other Analysis	Tested by TAL, BSK, ARI, ALS					
Field Total Res. Chlorine	< 0.05	mg/L	0.05	SM 4500-Cl G	8/ 6/19	
Total Suspended Solids	< 1	mg/l	1.0	SM 2540-D	8/ 7/19	
Ammonia	< 0.07	mg/L	0.07	SM 4500NH3-G	8/ 7/19	
Biological Oxygen Demand	< 2	mg/L	2	SM 5210-B	8/ 7/19	
Chemical Oxygen Demand	8.9	mg/L	5	SM 5220D	8/12/19	
Hexane Extract. Material	< 1.4	mg/L	1.4	EPA 1664B	8/ 7/19	
Total Organic Carbon	1.34	mg/L	0.5	SM 5310-C	8/ 9/19	

Andy Schut

Approved By Name: Lab Manager/Yakima

Signature:

Function:

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Environment Testing
TestAmerica

1

ANALYTICAL REPORT

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-88311-1
Client Project/Site: Chelan Co PUD

For:
Cascade Analytical Inc
1008 W. Ahtanum Rd.
Union Gap, Washington 98903

Attn: Andy Schut

A handwritten signature in cursive script, appearing to read "Ashley Worthy".

Authorized for release by:
9/6/2019 12:04:05 PM

Ashley Worthy, Project Manager I
(253)248-4965
ashley.worthy@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Job ID: 580-88311-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative
580-88311-1

Comments

No additional comments.

Receipt

The samples were received on 8/9/2019 1:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.3° C.

Metals

Method(s) 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 19-C26189 (580-88311-2) were outside control limits. The MS/MSD was analyzed twice with similar results. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits for preparation batch 240-396232 and analytical batch 240-396909

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method(s) 420.4, 9066: Reanalysis of the following samples may be performed outside of the analytical holding time due to LCS failed low. 19-C26188 (580-88311-1), 19-C26189 (580-88311-2) and 19-C26190 (580-88311-3).

Method(s) SM 5540C: The following samples were received outside of holding time: 19-C26188 (580-88311-1), 19-C26189 (580-88311-2) and 19-C26190 (580-88311-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Job ID: 580-88311-1

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Client Sample ID: 19-C26188

Lab Sample ID: 580-88311-1

Date Collected: 08/06/19 09:30

Matrix: Water

Date Received: 08/09/19 13:50

5

Method: 1631E - Mercury, Low Level (CVAFS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	13		5.0	1.4	ng/L		08/15/19 13:00	08/20/19 11:08	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND	H	0.020	0.0068	mg/L		09/04/19 05:53	09/04/19 16:28	1
MBAS - Surfactants	ND	H H3	0.20	0.10	mg/l LAS MW 340			08/21/19 13:57	1

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Client Sample ID: 19-C26189

Lab Sample ID: 580-88311-2

Date Collected: 08/06/19 10:15

Matrix: Water

Date Received: 08/09/19 13:50

Method: 1631E - Mercury, Low Level (CVAFS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.25	J F1	0.50	0.14	ng/L		08/15/19 13:00	08/20/19 12:20	1

5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND	H	0.020	0.0068	mg/L		09/04/19 05:53	09/04/19 16:28	1
MBAS - Surfactants	ND	H H3	0.20	0.10	mg/l LAS MW 340			08/21/19 13:57	1

Eurofins TestAmerica, Seattle

Client Sample Results

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Client Sample ID: 19-C26190

Lab Sample ID: 580-88311-3

Date Collected: 08/06/19 10:50

Matrix: Water

Date Received: 08/09/19 13:50

Method: 1631E - Mercury, Low Level (CVAFS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.14	ng/L		08/15/19 13:00	08/20/19 11:44	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND	H	0.020	0.0068	mg/L		09/04/19 05:53	09/04/19 16:34	1
MBAS - Surfactants	ND	H H3	0.20	0.10	mg/l LAS MW 340			08/21/19 13:58	1

5

Eurofins TestAmerica, Seattle

QC Sample Results

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 240-396232/1-A
Matrix: Water
Analysis Batch: 396909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396232

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	0.50	0.14	ng/L		08/15/19 13:00	08/20/19 08:32	1

Lab Sample ID: LCS 240-396232/2-A
Matrix: Water
Analysis Batch: 396909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396232
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	5.00	4.99		ng/L		100	77 - 123

Lab Sample ID: 240-117345-A-5-B MS ^10
Matrix: Water
Analysis Batch: 396909

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 396232
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	29		50.0	67.1		ng/L		76	71 - 125

Lab Sample ID: 240-117345-A-5-C MSD ^10
Matrix: Water
Analysis Batch: 396909

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 396232
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	29		50.0	66.3		ng/L		75	71 - 125	1	24

Lab Sample ID: 580-88311-2 MS
Matrix: Water
Analysis Batch: 396909

Client Sample ID: 19-C26189
Prep Type: Total/NA
Prep Batch: 396232
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.25	J F1	5.00	3.96		ng/L		74	71 - 125

Lab Sample ID: 580-88311-2 MSD
Matrix: Water
Analysis Batch: 396909

Client Sample ID: 19-C26189
Prep Type: Total/NA
Prep Batch: 396232
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.25	J F1	5.00	3.71	F1	ng/L		69	71 - 125	7	24

Method: 420.4 - Phenolics, Total Recoverable

Lab Sample ID: MB 280-469617/2-A
Matrix: Water
Analysis Batch: 469722

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469617

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND	0.020	0.0068	mg/L		09/04/19 05:53	09/04/19 16:23	1

Eurofins TestAmerica, Seattle

QC Sample Results

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Method: 420.4 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCS 280-469617/1-A
Matrix: Water
Analysis Batch: 469722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469617
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phenols, Total	0.201	0.213		mg/L		106	90 - 110

Lab Sample ID: 280-127064-F-5-E MS
Matrix: Water
Analysis Batch: 469722

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 469617
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phenols, Total	ND		0.201	0.213		mg/L		106	72 - 118

Lab Sample ID: 280-127064-F-5-F MSD
Matrix: Water
Analysis Batch: 469722

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 469617
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Phenols, Total	ND		0.201	0.213		mg/L		106	72 - 118	0	16

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 680-583281/3
Matrix: Water
Analysis Batch: 583281

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS - Surfactants	ND		0.20	0.10	mg/l LAS MW 340			08/21/19 13:50	1

Lab Sample ID: LCS 680-583281/4
Matrix: Water
Analysis Batch: 583281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
MBAS - Surfactants	0.500	0.556		mg/l LAS MW 340		111	70 - 130

Lab Sample ID: LCSD 680-583281/5
Matrix: Water
Analysis Batch: 583281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
MBAS - Surfactants	0.500	0.590		mg/l LAS MW 340		118	70 - 130	6	15

Eurofins TestAmerica, Seattle

Lab Chronicle

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Client Sample ID: 19-C26188

Lab Sample ID: 580-88311-1

Date Collected: 08/06/19 09:30

Matrix: Water

Date Received: 08/09/19 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1631E			396232	08/15/19 13:00	AJC	TAL CAN
Total/NA	Analysis	1631E		10	396909	08/20/19 11:08	AJC	TAL CAN
Total/NA	Prep	Distill/Phenol			469617	09/04/19 05:53	IEU	TAL DEN
Total/NA	Analysis	420.4		1	469722	09/04/19 16:28	JAM	TAL DEN
Total/NA	Analysis	SM 5540C		1	583281	08/21/19 13:57	WRB	TAL SAV

Client Sample ID: 19-C26189

Lab Sample ID: 580-88311-2

Date Collected: 08/06/19 10:15

Matrix: Water

Date Received: 08/09/19 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1631E			396232	08/15/19 13:00	AJC	TAL CAN
Total/NA	Analysis	1631E		1	396909	08/20/19 12:20	AJC	TAL CAN
Total/NA	Prep	Distill/Phenol			469617	09/04/19 05:53	IEU	TAL DEN
Total/NA	Analysis	420.4		1	469722	09/04/19 16:28	JAM	TAL DEN
Total/NA	Analysis	SM 5540C		1	583281	08/21/19 13:57	WRB	TAL SAV

Client Sample ID: 19-C26190

Lab Sample ID: 580-88311-3

Date Collected: 08/06/19 10:50

Matrix: Water

Date Received: 08/09/19 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1631E			396232	08/15/19 13:00	AJC	TAL CAN
Total/NA	Analysis	1631E		1	396909	08/20/19 11:44	AJC	TAL CAN
Total/NA	Prep	Distill/Phenol			469617	09/04/19 05:53	IEU	TAL DEN
Total/NA	Analysis	420.4		1	469722	09/04/19 16:34	JAM	TAL DEN
Total/NA	Analysis	SM 5540C		1	583281	08/21/19 13:58	WRB	TAL SAV

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Eurofins TestAmerica, Seattle

Accreditation/Certification Summary

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Laboratory: Eurofins TestAmerica, Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C553	02-17-20

Laboratory: Eurofins TestAmerica, Canton

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C971	01-12-20 *

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C583	08-03-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
420.4	Distill/Phenol	Water	Phenols, Total

Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C805	06-10-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 5540C		Water	MBAS - Surfactants

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Seattle

Sample Summary

Client: Cascade Analytical Inc
Project/Site: Chelan Co PUD

Job ID: 580-88311-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-88311-1	19-C26188	Water	08/06/19 09:30	08/09/19 13:50	
580-88311-2	19-C26189	Water	08/06/19 10:15	08/09/19 13:50	
580-88311-3	19-C26190	Water	08/06/19 10:50	08/09/19 13:50	

Seattle/Tacoma
5755 8th Street East

Tacoma, WA 98424
phone 253.922.2310

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

[illegible]

Eurofins TestAmerica, Seattle

5755 5th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record



Environment Testing
TestAmerica

Client Information (Sub Contract Lab)

Client Contact
Shipping/Receiving

Company
TestAmerica Laboratories, Inc

Address:
4101 Shufel Street NW

City
North Canton

State Zip
OH, 44720

Phone:
330-497-5396(Tel) 330-497-0772(Fax)

Email:

Project Name
CAI-Union Gap

Site

Sampler

Lab Pmt
Worthy, Ashley L

E-Mail:
ashley.worthy@testamericainc.com

Accreditation Required (See note):
State Program - Washington

Carrier Tracking #2151

State of Origin
Washington

Page 1 of 1

CCC No

580-8837.1

Page

580-88311-1

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Acetone
H - Acetic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Iceberg
N - None
O - AsHClO2
P - Na2O4S
Q - Na2SO3
R - NaHSO3
S - H2SO4
T - TSP Dodecyl sulfate
U - Acetone
V - HCAA
W - pH 4.5
Z - other (specify)

Analysis Requested

Due Date Requested:
8/22/2019

TAT Requested (days):

QC #

WO #

Project #

58009128

SSC #

Sample Type
(C=Comp, G=Grab)

Sample Time

Sample Date

Matrix
(Residue, Swab, On-surface, etc.)

Preservation Code:

Field Filled Sample (Yes or No)

Perform MS/MSD (Yes or No)

Total Number of Containers

Special Instructions/Note:

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

19-C26188 (580-88311-1)

19-C26169 (580-88311-2)

19-C26190 (580-88311-3)

Possible Hazard Identification

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify)

Primary Deliverable Rank: 2

Empty Kit Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Custody Seals Intact:

Yes No

Date:

8/13/19

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date:

8/13/19

Date/Time:

Date/Time:

Date/Time:

Date/Time:

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8/13/19

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Date:

8/13/19

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility _____

Client EDM Site Name _____ Cooler unpacked by: Ryan Cribley

Cooler Received on 8-14-19 Opened on _____

FedEx: 1st Grd Exp? UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF +0.1 °C) Observed Cooler Temp. 21.2 °C Corrected Cooler Temp. 21.5 °C
 IR GUN #36 (CF +0.6 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC984738
 13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 16. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Eurofins TestAmerica, Seattle
 5756 8th Street East
 Tacoma, WA 98424
 Phone: 253-922-2310 Fax: 253-922-5047

Chain of Custody Record

eurofins

Environmental Testing
 TestAmerica

Client Information (Sub Contract Lab)		Lab P/L		Carrier Tracking No(s)		COC No	
Client Contact		Worthy, Ashley L				580-8836-1	
Shipping/Receiving		E-Box		State of Origin		Page	
Company		ashley.worthy@testamericainc.com		Washington		Page 1 of 1	
Address		TestAmerica Laboratories, Inc		Accreditations Required (See note)		Lab #	
4955 Yarrow Street,				State Program - Washington		580-88311-1	
City		Arivada		Analysis Requested		Preservation Codes:	
State Zip		CO, 80002		Due Date Requested:		A - HCL	
Phone		303-736-0100(Tel) 303-431-7171(Fax)		TAT Requested (days):		B - NaOH	
Email				Sample Date		C - Zn Acetate	
Project Name		CAI-Union Gap		Sample Time		D - Nitric Acid	
Site		SSOW#		Sample Type (C=Comp, G=grab)		E - NaHSO4	
				Matrix (Preval, Standard, Composite)		F - NaOH	
				Preservation Code:		G - Ammonia	
				Sample Date		H - Ascorbic Acid	
				Sample Time		I - Ice	
				Sample Type (C=Comp, G=grab)		J - DI Water	
				Matrix (Preval, Standard, Composite)		K - EDTA	
				Preservation Code:		L - EDA	
				Sample Date		Other:	
				Sample Time			
				Sample Type (C=Comp, G=grab)			
				Matrix (Preval, Standard, Composite)			
				Preservation Code:			
				Sample Date			
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				Preservation Code:			
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Phone: 253-922-2310 Fax: 253-922-5047

TECOMA WA 98424

Tacoma WA

Telcom WA 98424

[illegible]

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-88311-1

Login Number: 88311

List Source: Eurofins TestAmerica, Seattle

List Number: 1

Creator: Vallolunga, Diana L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-88311-1

Login Number: 88311

List Source: Eurofins TestAmerica, Denver

List Number: 3

List Creation: 08/14/19 12:08 PM

Creator: Paul, Ryan D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-88311-1

Login Number: 88311

List Number: 2

Creator: Banda, Christy S

List Source: Eurofins TestAmerica, Savannah

List Creation: 08/14/19 10:33 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



3019 G. S. Center Rd.
Wenatchee, WA 98801
(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

1008 W. Ahtanum Rd.
Union Gap, WA 98903
(509) 452-7707
Fax: (509) 452-7773

WATER ANALYSIS ORDER FORM

Batch#	996553	SAMPLE #				
		1	2	3	4	5
SEND RESULTS TO						
<input type="checkbox"/> Client <input type="checkbox"/> Billing <input type="checkbox"/> Both						
SAMPLE REPRESENTS						
<input type="checkbox"/> Irrigation <input type="checkbox"/> Waste Water <input type="checkbox"/> Other						
SAMPLE BY						
<input type="checkbox"/> Client <input type="checkbox"/> Quality Control <input type="checkbox"/> Cascade <input type="checkbox"/> Other						

CLIENT NAME/ADDRESS
Chelan Co PUD
PO Box 1231
Wenatchee, WA 98807-1231
SAMPLER'S NAME
Michael Dartington

BILLING NAME/ADDRESS
Same
PHONE
Attn: Jennifer Burns

E-mail jennifer.burns@chelanpud.org

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
<i>Michael Dartington</i>	8/6/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
Michael Dartington					
RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE	RECEIVED FOR LAB BY: (Signature)	DATE
<i>R. Kennedy</i>	8/6/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
R. Kennedy	13:45				

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

19-26188	1	Unwatering Sump	Sample Date 8/6/19
		TRC ≤ 0.05	Sample Time 1:30
	2	Station Sump	Sample Date 8/6/19
19-26189		TRC ≤ 0.05	Sample Time 10:15
	3	Intake Water	Sample Date 8/6/19
19-26190		TRC ≤ 0.05	Sample Time 10:50
	4		Sample Date
		TRC	Sample Time
	5		Sample Date
			Sample Time

*METALS - indicate type of analysis - T=total, D=dissolved

Total N package = TKN, NO₃, NO₂, NH₃

Sample container received by client was sealed Yes ☐ No ☐

Sample container received by laboratory was sealed Yes ☐ No ☐

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from the use of Cascade's test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are no other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical Inc.'s liability to customer as a result of customers use of Cascade's test results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

Customer Signature: *Michael Dartington*

Date 8/6/19

This form also serves as "Chain of Custody."

(see legend on back)	SAMPLE #				
IRRIGATION WATER	1	2	3	4	5
Standard					
GENERAL CHEMISTRY					
1135 pH					
1140 Conductivity					
1200 Solids-Dis. (TDS)					
1230 Solids-Susp. (TSS)	✓	✓	✓	✓	
1240 Tot. Phosphorus					
1250 Orthophosphate					
1260 Kjeldahl Nitrogen (TKN)					
1170 Nitrate+Nitrite					
1265 NO ₃ (As N)					
1280 Ammonia	✓	✓	✓	✓	
1300 Biol. Oxy. Demand	✓	✓	✓	✓	
1310 Chem. Oxy. Demand	✓	✓	✓	✓	
1190 Sulfate (SO ₄)					
1180 Chloride (Cl)					
7110 TOC	✓	✓	✓	✓	
1320 Hexane Ext. Mat.	✓	✓	✓	✓	
1340 Alkalinity					
217 Total N Pkg					
MICROBIOLOGY					
10040 Total Coliform MF					
10010 Fecal Coliform MF					
10041 Total Coliform MPN					
10011 Fecal Coliform MPN					
METALS - TOTAL OR DISSOLVED					
Priority Pollutants					
1391 Antimony (Sb)					
1011 Arsenic (As)					
1025 Barium (Ba)					
1405 Beryllium (Be)					
1031 Cadmium (Cd)					
1045 Chromium (Cr)					
1215 Copper (Cu)					
1065 Iron (Fe)					
1075 Manganese (Mn)					
1081 Mercury (Hg)					
1051 Lead (Pb)					
1335 Nickel (Ni)					
1091 Selenium (Se)					
1105 Silver (Ag)					
1381 Thallium (Tl)					
1225 Zinc (Zn)					
MINERALS					
1120 Calcium (Ca)					
1130 Magnesium (Mg)					
1115 Potassium (K)					
1110 Sodium (Na)					



BSK Associates Laboratory Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)
559-485-6935 (FAX)

Amended Report

A9H1368

9/05/2019

Invoice: A923824

Andy Schut
Cascade Analytical, Inc.
1008 W. Ahtanum Rd., Suite 2
Union Gap, WA 98903

RE: Report for A9H1368 Priority Pollutant Subcontract

Dear Andy Schut,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 8/12/2019. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

This certificate of analysis shall not be reproduced except in full, without written approval of the laboratory.

If additional clarification of any information is required, please contact your Project Manager, True Lee, at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Joseph Boatwright, Quality Assurance Specialist



Accredited in Accordance with NELAP
ORELAP #4021-009

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.

A9H1368 FINAL 09052019 1412

**A9H1368****Priority Pollutant Subcontract****Case Narrative**

Project and Report Details		Invoice Details
Client:	Cascade Analytical, Inc.	Invoice To: Cascade Analytical, Inc.
Report To:	Andy Schut	Invoice Attn: Andy Schut
Project #:	Chelan Co PUD	Project PO#: 9965538819-B-3
Received:	8/12/2019 - 09:51	
Report Due:	8/26/2019	

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 4.6

Containers Intact
COC/Labels Agree
Received On Blue Ice
Packing Material - Other
Sample(s) were received in temperature range.
Initial receipt at BSK-FAL

Detailed Narrative**Chain of Custody Notes**

Date: 08/12/2019

Initials: TRL

Note: Per Andy Schultz, report only PCBs on all samples.

Report Amendments

Date: 09/03/2019

Initials: TRL

This amended report supersedes any previous reports issued by the laboratory. Amendments to this report are as follows: Added Toxaphene to samples A9H1368-01 through A9H1368-03 as per Andy Schut.

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

J Estimated value

Report Distribution

Recipient(s)	Report Format	CC:
Andy Schut	FINAL.RPT	

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.

A9H1368 FINAL 09052019 1412

*** Amended Report ***

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**A9H1368****Priority Pollutant Subcontract**

Chelan Co PUD

Certificate of Analysis**Sample ID:** A9H1368-01**Sampled By:** Client**Sample Description:** 19-C26188**Sample Date - Time:** 08/06/19 - 09:30**Matrix:** Waste Water**Sample Type:** Grab**BSK Associates Laboratory Fresno****Organics**

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD										
Aroclor-1016	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1221	EPA 608	ND	0.063	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1232	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1242	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1248	EPA 608	ND	0.020	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1254	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1260	EPA 608	ND	0.015	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Toxaphene	EPA 608	ND	0.035	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Surrogate: TCMX	EPA 608	65 %		Acceptable range: 26-144 %						

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.

A9H1368 FINAL 09052019 1412

*** Amended Report ***

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**A9H1368****Priority Pollutant Subcontract**

Chelan Co PUD

Certificate of Analysis

Sample ID: A9H1368-02

Sampled By: Client

Sample Description: 19-C26189

Sample Date - Time: 08/06/19 - 10:15

Matrix: Waste Water

Sample Type: Grab

BSK Associates Laboratory Fresno**Organics**

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD										
Aroclor-1016	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1221	EPA 608	ND	0.063	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1232	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1242	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1248	EPA 608	ND	0.020	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1254	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1260	EPA 608	ND	0.015	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Toxaphene	EPA 608	ND	0.035	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Surrogate: TCMX	EPA 608	67 %								Acceptable range: 26-144 %

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.

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*** Amended Report ***

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**A9H1368****Priority Pollutant Subcontract**

Chelan Co PUD

Certificate of Analysis**Sample ID:** A9H1368-03**Sampled By:** Client**Sample Description:** 19-C26190**Sample Date - Time:** 08/06/19 - 10:50**Matrix:** Waste Water**Sample Type:** Grab**BSK Associates Laboratory Fresno****Organics**

Analyte	Method	Result	MDL	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Organochlorine Pesticides and PCBs by GC-ECD										
Aroclor-1016	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1221	EPA 608	ND	0.063	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1232	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1242	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1248	EPA 608	ND	0.020	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1254	EPA 608	ND	0.050	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Aroclor-1260	EPA 608	ND	0.015	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Toxaphene	EPA 608	ND	0.035	0.50	ug/L	1	A911801	08/13/19	08/15/19	
Surrogate: TCMX	EPA 608	68 %		Acceptable range: 26-144 %						

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.

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*** Amended Report ***

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Priority Pollutant Subcontract

BSK Associates Laboratory Fresno
Organics Quality Control Report

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Date Analyzed	Qual
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EPA 608 - Quality Control

Batch: A911801

Prepared: 8/13/2019

Prep Method: EPA 3510C

Analyst: YNV

Blank (A911801-BLK1)

4,4'-DDD	ND	0.00072	0.050	ug/L							08/16/19	
4,4'-DDE	ND	0.00081	0.050	ug/L							08/16/19	
4,4'-DDT	ND	0.00070	0.010	ug/L							08/16/19	
Aldrin	ND	0.00079	0.0050	ug/L							08/16/19	
alpha-BHC	ND	0.0025	0.010	ug/L							08/16/19	
Aroclor-1016	ND	0.050	0.50	ug/L							08/15/19	
Aroclor-1221	ND	0.083	0.50	ug/L							08/15/19	
Aroclor-1232	ND	0.050	0.50	ug/L							08/15/19	
Aroclor-1242	ND	0.050	0.50	ug/L							08/15/19	
Aroclor-1248	ND	0.020	0.50	ug/L							08/15/19	
Aroclor-1254	ND	0.050	0.50	ug/L							08/15/19	
Aroclor-1260	ND	0.015	0.50	ug/L							08/15/19	
beta-BHC	ND	0.00054	0.0050	ug/L							08/16/19	
Chlordane (Technical)	ND	0.026	0.10	ug/L							08/15/19	
delta-BHC	ND	0.00080	0.0050	ug/L							08/16/19	
Dieldrin	ND	0.00097	0.010	ug/L							08/16/19	
Endosulfan I	ND	0.00089	0.020	ug/L							08/16/19	
Endosulfan II	ND	0.0018	0.010	ug/L							08/16/19	
Endosulfan Sulfate	ND	0.00074	0.050	ug/L							08/16/19	
Endrin	ND	0.00081	0.010	ug/L							08/16/19	
Endrin Aldehyde	ND	0.00087	0.010	ug/L							08/16/19	
Heptachlor	ND	0.00088	0.010	ug/L							08/16/19	
Heptachlor Epoxide	ND	0.00069	0.010	ug/L							08/16/19	
Lindane	ND	0.0025	0.020	ug/L							08/16/19	
Toxaphene	ND	0.035	0.50	ug/L							08/15/19	
Surrogate: TCMX	0.22				0.30		73	26-144			08/16/19	

Blank Spike (A911801-BS1)

4,4'-DDD	0.038	0.00072	0.050	ug/L	0.040	90	63-146				08/16/19	J
4,4'-DDE	0.035	0.00081	0.050	ug/L	0.040	86	49-150				08/16/19	J
4,4'-DDT	0.033	0.00070	0.010	ug/L	0.040	83	66-146				08/16/19	
Aldrin	0.032	0.00079	0.0050	ug/L	0.040	81	24-144				08/16/19	
alpha-BHC	0.030	0.0025	0.010	ug/L	0.040	75	32-176				08/16/19	
beta-BHC	0.032	0.00054	0.0050	ug/L	0.040	81	59-152				08/16/19	
delta-BHC	0.026	0.00080	0.0050	ug/L	0.040	85	46-156				08/16/19	
Dieldrin	0.035	0.00097	0.010	ug/L	0.040	88	62-146				08/16/19	
Endosulfan I	0.033	0.00089	0.020	ug/L	0.040	82	53-151				08/16/19	
Endosulfan II	0.032	0.0018	0.010	ug/L	0.040	80	63-144				08/16/19	
Endosulfan Sulfate	0.033	0.00074	0.050	ug/L	0.040	84	65-145				08/16/19	J
Endrin	0.034	0.00081	0.010	ug/L	0.040	84	55-153				08/16/19	
Endrin Aldehyde	0.032	0.00087	0.010	ug/L	0.040	79	68-128				08/16/19	
Heptachlor	0.031	0.00088	0.010	ug/L	0.040	77	34-147				08/16/19	
Heptachlor Epoxide	0.034	0.00069	0.010	ug/L	0.040	85	57-150				08/16/19	

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.

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*** Amended Report ***

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Priority Pollutant Subcontract

BSK Associates Laboratory Fresno
Organics Quality Control Report

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 608 - Quality Control

Batch: A911801

Prepared: 8/13/2019

Prep Method: EPA 3510C

Analyst: YNV

Blank Spike (A911801-BS1)

Lindane	0.031	0.0025	0.020	ug/L	0.040		77	58-148			08/16/19	
Surrogate: TCMX	0.21				0.30		70	26-144			08/16/19	

Blank Spike (A911801-BS2)

Aroclor-1016	0.84	0.050	0.50	ug/L	0.80		80	50-114			08/15/19	
Aroclor-1260	0.84	0.015	0.50	ug/L	0.80		80	8-127			08/15/19	
Surrogate: TCMX	0.21				0.30		69	26-144			08/15/19	

Blank Spike (A911801-BS3)

Toxaphene	0.76	0.035	0.50	ug/L	0.80		95	41-126			08/15/19	
Surrogate: TCMX	0.28				0.30		94	26-144			08/15/19	

Blank Spike (A911801-BS4)

Chlordane (Technical)	0.52	0.026	0.10	ug/L	0.80		65	45-119			08/15/19	
Surrogate: TCMX	0.22				0.30		72	26-144			08/15/19	

Blank Spike Dup (A911801-BSD1)

4,4'-DDD	0.038	0.00072	0.050	ug/L	0.040		98	63-146	7	20	08/16/19	J
4,4'-DDE	0.036	0.00081	0.050	ug/L	0.040		89	49-150	3	20	08/16/19	J
4,4'-DDT	0.035	0.00070	0.010	ug/L	0.040		88	66-146	6	20	08/16/19	
Aldrin	0.033	0.00079	0.0050	ug/L	0.040		84	24-144	4	20	08/16/19	
alpha-BHC	0.031	0.00025	0.010	ug/L	0.040		77	32-176	3	20	08/16/19	
beta-BHC	0.034	0.00054	0.0050	ug/L	0.040		85	59-152	5	20	08/16/19	
delta-BHC	0.027	0.00060	0.0050	ug/L	0.040		67	46-156	4	20	08/16/19	
Dieldrin	0.036	0.00097	0.010	ug/L	0.040		90	62-146	2	20	08/16/19	
Endosulfan I	0.034	0.00089	0.020	ug/L	0.040		85	53-151	3	20	08/16/19	
Endosulfan II	0.034	0.0018	0.010	ug/L	0.040		84	63-144	4	20	08/16/19	
Endosulfan Sulfate	0.035	0.00074	0.050	ug/L	0.040		87	65-145	3	20	08/16/19	J
Endrin	0.035	0.00081	0.010	ug/L	0.040		87	55-153	4	20	08/16/19	
Endrin Aldehyde	0.034	0.00067	0.010	ug/L	0.040		84	68-128	5	20	08/16/19	
Heptachlor	0.032	0.00089	0.010	ug/L	0.040		80	34-147	4	20	08/16/19	
Heptachlor Epoxide	0.035	0.00089	0.010	ug/L	0.040		86	57-150	2	20	08/16/19	
Lindane	0.032	0.0025	0.020	ug/L	0.040		80	58-148	4	20	08/16/19	
Surrogate: TCMX	0.23				0.30		76	26-144			08/16/19	

Matrix Spike (A911801-MS1), Source: A9H1029-01

4,4'-DDD	0.027	0.00072	0.050	ug/L	0.038	ND	71	63-146			08/15/19	J
4,4'-DDE	0.023	0.00061	0.050	ug/L	0.038	ND	61	49-150			08/15/19	J
4,4'-DDT	0.033	0.00070	0.010	ug/L	0.038	ND	86	66-146			08/15/19	
Aldrin	0.025	0.00079	0.0050	ug/L	0.038	ND	66	24-144			08/15/19	
alpha-BHC	0.026	0.00025	0.010	ug/L	0.038	ND	68	32-176			08/15/19	
beta-BHC	0.027	0.00054	0.0050	ug/L	0.038	ND	71	59-152			08/15/19	
delta-BHC	0.028	0.00060	0.0050	ug/L	0.038	ND	75	46-156			08/15/19	
Dieldrin	0.030	0.00097	0.010	ug/L	0.038	ND	78	62-146			08/15/19	

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.

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*** Amended Report ***

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**A9H1368****Priority Pollutant Subcontract**

**BSK Associates Laboratory Fresno
Organics Quality Control Report**

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 608 - Quality Control

Batch: A911801

Prepared: 8/13/2019

Prep Method: EPA 3510C

Analyst: YNV

Matrix Spike (A911801-MS1), Source: A9H1029-01

Endosulfan I	0.027	0.00089	0.020	ug/L	0.038	ND	71	53-151			08/15/19	
Endosulfan II	0.026	0.0018	0.010	ug/L	0.038	ND	68	63-144			08/15/19	
Endosulfan Sulfate	0.027	0.00074	0.050	ug/L	0.038	ND	72	65-145			08/15/19	J
Endrin	0.031	0.00081	0.010	ug/L	0.038	ND	82	55-153			08/15/19	
Endrin Aldehyde	0.027	0.00067	0.010	ug/L	0.038	ND	72	68-128			08/15/19	
Heptachlor	0.025	0.00068	0.010	ug/L	0.038	ND	67	34-147			08/15/19	
Heptachlor Epoxide	0.029	0.00069	0.010	ug/L	0.038	ND	75	57-150			08/15/19	
Lindane	0.026	0.0025	0.020	ug/L	0.038	ND	69	58-148			08/15/19	
Surrogate: TCMX	0.19				0.28		68	26-144			08/15/19	

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.

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*** Amended Report ***

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Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters:

****NA****



A9H1368

Priority Pollutant Subcontract

Certificate of Analysis

Certifications: Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

Fresno

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-011
State of Nevada	CA000792020-2	State of Oregon - NELAP	4021-011
EPA - UCMR4	CA00079	State of Washington	C997-19b

Sacramento

State of California - ELAP 2435

San Bernardino

State of California - ELAP	2993	Los Angeles CSD	9254478
NELAP certified	4119-003	State of Oregon - NELAP	4119-003

Vancouver

NELAP certified	WA100008-012	State of Oregon - NELAP	WA100008-012
State of Washington	C824-18b		

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.

*** Amended Report ***

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Associates
Engineering Laboratories

1414 Stanislaus St., Fresno, CA 93706
(559) 497-2888 • Fax (559) 497-2893
www.bskassociates.com

Turnaround Time Request	
<input checked="" type="checkbox"/>	Standard - 10 business days
<input type="checkbox"/>	Rush (Surcharge may apply)
Date needed:	

A9H1368
Casca 7707
C

08/12/2019
10

Required Fields

Temp: 9.6

Phone:

Fax:

Page 11 of 15

[illegible]



AGRICULTURE &
ENVIRONMENTAL ANALYSIS

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A9H1368
Casca7707

08/12/2019
10



Sub-Contr

PG NO

9965538819-B

Chelan Co. PUD

BSK

Lana Bely 8/6/19
DARA Schultz 2:00pm

19-26188

19-26189

19-26190

Please
attached for
all form
Test Requested
Thank you

8/6/19 9:30

8/6/19 10:15

8/6/19 10:50

SPECIAL SERVICES

Billing & Results to
Cascade Analytical

Sample Integrity

BSK Bottles: Yes NoPage 1 of 1

COC Info	Is temperature within range?	Yes <u>No</u> NA	Are correct containers and preservatives received for the tests requested?	Yes <u>No</u> NA
	Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$	Yes No NA	Bubbles Present in VOA (524.2/TCP/TTHM)?	Yes No <u>NA</u>
	If samples were taken today, is there evidence that chilling has begun?	Yes No <u>NA</u>	TB Received? (Check Method Below)	Yes No <u>NA</u>
	Did all bottles arrive unbroken and intact?	Yes <u>No</u>	Is sufficient amount of sample received?	Yes <u>No</u>
COC Info	Do all bottle labels agree with COC?	Yes <u>No</u>	Do samples have a hold time <72 hours?	Yes <u>No</u>
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes No <u>NA</u>	Has PM been notified of discrepancies?	Yes No <u>NA</u>
Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml(VOA(V) 125ml(D)	Checks	Passed?	<u>1</u>
	Bacti Na ₂ S ₂ O ₃	—	—	—
	None (P) White Cap	—	—	—
	Cr6 (P) LL Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	P F	—
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	P F	—
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	P F	—
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/L Blue Label	—	—	—
	H ₂ SO ₄ (P) or (AG) Yellow Cap/L Label	pH < 2	P F	—
	NaOH (P) Green Cap	Cl, pH > 10	P F	—
	NaOH + ZnAc (P)	pH > 9	P F	—
	Dissolved Oxygen 300ml (g)	—	—	—
	None (AG) 608/6081/8082, 625, 632/8321, 8151, 8270	—	—	<u>3C</u>
	HCl (AG) LL Blue Label O&G, Diesel, TCP	—	—	—
	Ascorbic, EDTA, KH ₂ Cl (AG) Pink Label 525	—	—	—
	Na ₂ SO ₃ 250mL (AG) Neon Green Label 515	—	—	—
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—	—
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524	—	—	—
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547	—	—	—
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531	pH < 3	P F	—
	NH ₄ Cl (AG) Purple Label 552	—	—	—
	EDA (AG) Brown Label DBPs	—	—	—
	HCL (CG) 524.2, BTEX, Gas, MTBE, 8260/624	—	—	—
	Buffer pH 4 (CG)	—	—	—
	H ₃ PO ₄ (CG) Salmon Label	—	—	—
	Trizma - EPA 537.1	—	—	—
	Other:	—	—	—
	Asbestos 1L (P) w/ Foil / LL Metals Bottle	—	—	—
	Bottled Water	—	—	—
Clear Glass 125mL / 250mL / 500mL / 1 Liter	—	—	—	
Solids: Brass / Steel / Plastic Bag	—	—	—	
Split	Container	Preservative	Date/Time/Initials	Container Preservative Date/Time/Initials
	S P			S P
	S P			S P
Comments	✓ Indicates Blanks Received 504 ___ 524.2 ___ TCP ___ TTHM ___ 537 ___ 8260/624 ___			

Scanned: _____

True Lee

From: AndrewSchut@eurofinsUS.com
Sent: Monday, August 12, 2019 2:32 PM
To: True Lee
Subject: RE: A9H1368 and A9H1369 - Chelan Co PUD

True,
I only need 608.3 PCB's. No other analysis is required. These samples originated from my Wenatchee office. Sorry for the confusion.

Best,

Andy Schut
Eurofins--Cascade Analytical
Union Gap WA
509-452-7707 Office

The information transmitted (including attachments) is intended solely for the person(s) or entity/entities to which it is addressed and may contain confidential and/or privileged material. If you are not the intended recipient, you are hereby formally notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited and may be unlawful. If you are not the intended recipient, please inform the sender and delete all copies. Email transmission cannot be guaranteed to be secure or error free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete. The sender therefore is in no way liable for any errors or omissions in the content of this message which may arise as a result of email transmission.

From: True Lee <tlee@bskassociates.com>
Sent: Monday, August 12, 2019 2:04 PM
To: Andrew Schut <AndrewSchut@eurofinsUS.com>
Subject: A9H1368 and A9H1369 - Chelan Co PUD

EXTERNAL EMAIL*

Hi Andy,

We received these today and noticed that all EPA 624, 625, and 608 were checked for analysis. We only received 1Litters non preserved bottles, no VOAs. What methods should be analyzed for them? Was this marked by accident or did they bottles not make it for shipment? Should we be expecting an additional ice chest? Attached are copies of the COCs. Please advise.

Sincerely,

True Lee
Project Manager
BSK Associates
1414 Stanislaus Street
Fresno, CA 93706
P: 559-497-2888 ext119
F: 559-485-6935



True Lee

From: AndrewSchut@eurofinsUS.com
Sent: Tuesday, September 3, 2019 10:27 AM
To: True Lee
Subject: FW: Project: Priority Pollutant Subcontract, A9H1369 *****DO NOT REPLY*****
Attachments: A9H1369_1 Final 08 23 2019 1325.pdf, A9H1368_1 Final 08 26 2019 1022.pdf
Importance: High

True,
Are you able to provide Toxaphene data with the attached results?

Best,

Andy Schut
Eurofins--Cascade Analytical
Union Gap WA
509-452-7707 Office

The information transmitted (including attachments) is intended solely for the person(s) or entity/entities to which it is addressed and may contain confidential and/or privileged material. If you are not the intended recipient, you are hereby formally notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited and may be unlawful. If you are not the intended recipient, please inform the sender and delete all copies. Email transmission cannot be guaranteed to be secure or error free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete. The sender therefore is in no way liable for any errors or omissions in the content of this message which may arise as a result of email transmission.

-----Original Message-----

From: BSK Associates <MessageManager@bskassociates.com>
Sent: Friday, August 23, 2019 1:30 PM
To: Andrew Schut <AndrewSchut@eurofinsUS.com>
Subject: Project: Priority Pollutant Subcontract, A9H1369 *****DO NOT REPLY*****

EXTERNAL EMAIL*

*****DO NOT REPLY*****

Please find attached your results and/or EDD and/or invoice. If you have any questions contact True Lee.

This is an auto-email message from BSK Associates. If you are receiving an EDD, please note that the EDD does not represent our official final report as per the criteria established in the 2009 TNI Standard. If you have any questions about this email or if this email has been sent to you in error, call: (800) 877-8310. You may access your results @ clientconnect.bskassociates.com THIS MESSAGE WAS SENT FROM AN UNMONITORED EMAIL ADDRESS. PLEASE DO NOT REPLY TO THIS MESSAGE.

* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!



**AGRICULTURAL &
ENVIRONMENTAL ANALYSIS**

3019 G.S. Center Rd.
Wenatchee, WA 98801

(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

SPECIAL SERVICE ORDER FORM

ARI

SAMPLE #		1	2	3	4
SEND RESULTS TO					
1) Client 2) Billing 3) Both					
SAMPLE REPRESENTS					
1) Food 2) Water 3) Soil 4) Plant Tissue 5) Other					
SAMPLE BY					
1) Client 2) Field Rep. 3) Quality Control 4) Cascade 5) Other					
SAMPLER'S NAME					

CLIENT NAME/ADDRESS

Chelan Co PUB

PO Box 1231

Wenatchee, WA 98807-1231

PHONE NO.

BILLING NAME/ADDRESS

Same

PHONE NO.

Attn: Jennifer Burns

EMAIL

Jennifer.burns@chelanpub.org

EMAIL

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
<i>[Signature]</i>	8/6/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME

1	SAMPLE I.D.	Unwatering Sump	Sample Date	8/6/19	Sample Time	7:30
	ANALYSIS REQUESTED	EPA 200.8 Priority Pollutant Metals (No Hg)				
	COMMENT	26188				
2	SAMPLE I.D.	Station Sump	Sample Date	8/6/19	Sample Time	10:15
	ANALYSIS REQUESTED	EPA 200.8 Priority Pollutant Metals (No Hg)				
	COMMENT	2619089				
3	SAMPLE I.D.	Intake Water	Sample Date	8/6/19	Sample Time	10:15
	ANALYSIS REQUESTED	EPA 200.8 Priority Pollutant Metals (No Hg)				
	COMMENT	26190				
4	SAMPLE I.D.		Sample Date		Sample Time	
	ANALYSIS REQUESTED	EPA 200.8 Priority Pollutant Metals (No Hg)				
	COMMENT					

Sample container received by client was sealed Yes ☐ No ☐

Sample container received by laboratory was sealed Yes ☐ No ☐

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from use of Cascade Analytical test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are not other oral agreements or warranties collateral to or affecting this agreement. Cascade Analytical, Inc.'s liability to customer as a result of customer's use of Cascade's tests results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

Customer Signature

[Signature]

Date

8/6/19

PACKAGING/SHIPPING INSTRUCTIONS:

Contact Laboratory to establish:

- a) performance of analysis
- b) sampling protocol, if unknown
- c) storage and shipping requirements

Complete order form. Attach chain of custody form if required.

Use container supplied by or approved by the laboratory. Other containers may contaminate sample. Pack in protective material to prevent sample vessel breakage. Ship sample refrigerated if required.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

16 August 2019

Andy Schut

Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee, WA 98801

RE: Chelan County PUD

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.

Associated Work Order(s)
19H0130

Associated SDG ID(s)
N/A

Shelly Fishel

Digitally signed by Shelly Fishel
DN: c=US, st=Washington, l=Tukwila,
o=Analytical Resources, Inc., cn=Shelly
Fishel, email=shelly.fishel@arilabs.com
Date: 2019.08.16 16:42:29 -07'00'

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.



PC # 9965538819-2

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)



ARI Assigned Number: 19-H-0130	Turn-around Requested: Standard			
ARI Client Company: Cascade Analytical Inc. Union Gap	Phone: 509-452-7707			
Client Contact: Andy Schut andys@cascadeanalytical.com				
Client Project Name: Chelan Co PUD				
Client Project #:	Samplers: Michael Darlington			
Sample ID	Date	Time	Matrix	No. Containers
19-C26188	08/06/19	07:30	W	1
19-C26189	08/06/19	10:15	W	1
19-C26190	08/06/19	10:50	W	1
Comments/Special Instructions: NPDES Priority Pollutant Analysis	Relinquished by: (Signature) Printed Name:		Received by: (Signature) Printed Name: Company:	
	[Signature] [Name]		[Signature] [Name] ARI	
	Date & Time: 8/8/19 2:00		Date & Time: 8/8/19	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARJ will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSD/DAP/SEP/SMS protocol will be stored frozen for up to one year and then discarded.



1-800-545-4206

AGRICULTURE &
ENVIRONMENTAL ANALYSIS

(509) 662-1888
Fax: (509) 662-8183
3019 G.S. Center Road
Wenatchee, WA 98801
(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahlstrom Rd.
Union Gap, WA 98903

19H0130

Sub-Contract ORDER FORM

P.O. NO:

9965538819-C

PROJECT NAME
Chelan Co POD

CONTRACT LAB
ARI
ADDRESS
CITY, STATE, ZIP
TELEPHONE

RELINQUISHED BY: Signature [1]	DATE	RELINQUISHED BY: Signature [2]	DATE	RELINQUISHED BY: Signature [3]	DATE
<i>[Signature]</i>	8/6/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
DARA Scholtz	2:00				
RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE
<i>[Signature]</i>	8/7/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
Erin Sallie	11:00				

1	Sample I.D.	19-26188	Sample Date	8/6/19	Sample Time	7:30
	ANALYSIS REQUESTED					
	COMMENT					
2	Sample I.D.	19-26189	Sample Date	8/6/19	Sample Time	10:15
	ANALYSIS REQUESTED					
	COMMENT					
3	Sample I.D.	19-26190	Sample Date	8/6/19	Sample Time	10:30
	ANALYSIS REQUESTED					
	COMMENT					
4	Sample I.D.		Sample Date		Sample Time	
	ANALYSIS REQUESTED					
	COMMENT					

SPECIAL INSTRUCTIONS:

Results & Billing to
Cascade Analytical
VAR



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
19-C26188	19H0130-01	Water	06-Aug-2019 07:30	09-Aug-2019 11:00
19-C26189	19H0130-02	Water	06-Aug-2019 10:15	09-Aug-2019 11:00
19-C26190	19H0130-03	Water	06-Aug-2019 10:50	09-Aug-2019 11:00



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received August 9, 2019 under ARI work order 19H0130. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Total Metals - EPA Method 200.8

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

Initial and continuing calibrations were within method requirements.

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

The LCS percent recoveries were within control limits.



WORK ORDER

19H0130

Client: Cascade Analytical, Inc.-Eurofins

Project Manager: Shelly Fishel

Project: City of Chelan

Project Number: [none]

Preservation Confirmation

Container ID	Container Type	pH	
19H0130-01 A	HDPE NM, 500 mL, 1:1 HNO3	< 2	Pass
19H0130-02 A	HDPE NM, 500 mL, 1:1 HNO3	< 2	Pass
19H0130-03 A	HDPE NM, 500 mL, 1:1 HNO3	< 2	Pass

JBW
Preservation Confirmed By

08/09/19
Date



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Cascade Analytical

Project Name: Chelan Co PLID

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19H0130

Tracking No: 1Z-X347540340152434 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 1057

2.8

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOOZ565

Cooler Accepted by: [Signature]

Date: 8/9/19

Time: 1100

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: JJ Date: 08/09/19 Time: 1237 Labels checked by: JJ

**** 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: _____



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26188

19H0130-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 08/06/2019 07:30

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:29

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-01 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.0180	0.200	0.189	ug/L	J
Beryllium	7440-41-7	1	0.0290	0.200	ND	ug/L	U
Chromium	7440-47-3	1	0.130	0.500	0.797	ug/L	
Lead	7439-92-1	1	0.0680	0.100	52.4	ug/L	
Silver	7440-22-4	1	0.0170	0.200	0.0510	ug/L	J
Thallium	7440-28-0	1	0.00800	0.200	0.0130	ug/L	J



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26188

19H0130-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 08/06/2019 07:30

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:29

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-01 A 01

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Arsenic	7440-38-2	1	0.0220	0.200	0.670	ug/L	
Cadmium	7440-43-9	1	0.0300	0.100	0.289	ug/L	
Copper	7440-50-8	1	0.340	0.500	62.0	ug/L	
Nickel	7440-02-0	1	0.0500	0.500	1.26	ug/L	
Selenium	7782-49-2	1	0.440	0.500	ND	ug/L	U
Zinc	7440-66-6	5	4.70	20.0	1130	ug/L	D



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26189

19H0130-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 08/06/2019 10:15

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:34

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO₃ matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-02 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.0180	0.200	0.120	ug/L	J
Beryllium	7440-41-7	1	0.0290	0.200	ND	ug/L	U
Chromium	7440-47-3	1	0.130	0.500	ND	ug/L	U
Lead	7439-92-1	1	0.0680	0.100	0.262	ug/L	
Silver	7440-22-4	1	0.0170	0.200	ND	ug/L	U
Thallium	7440-28-0	1	0.00800	0.200	ND	ug/L	U



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26189
19H0130-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 08/06/2019 10:15

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:34

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-02 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	0.611	ug/L	
Cadmium	7440-43-9	1	0.0300	0.100	ND	ug/L	U
Copper	7440-50-8	1	0.340	0.500	4.07	ug/L	
Nickel	7440-02-0	1	0.0500	0.500	0.196	ug/L	J
Selenium	7782-49-2	1	0.440	0.500	ND	ug/L	U
Zinc	7440-66-6	1	0.820	4.00	2.89	ug/L	J



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26190

19H0130-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 08/06/2019 10:50

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO₃ matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-03 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.0180	0.200	0.0910	ug/L	J
Beryllium	7440-41-7	1	0.0290	0.200	ND	ug/L	U
Chromium	7440-47-3	1	0.130	0.500	ND	ug/L	U
Lead	7439-92-1	1	0.0680	0.100	0.873	ug/L	
Silver	7440-22-4	1	0.0170	0.200	ND	ug/L	U
Thallium	7440-28-0	1	0.00800	0.200	0.00900	ug/L	J



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

19-C26190

19H0130-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 08/06/2019 10:50

Instrument: ICPMS2 Analyst: MCB

Analyzed: 08/14/2019 18:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO₃ matrix
Preparation Batch: BHH0361 Sample Size: 25 mL
Prepared: 14-Aug-2019 Final Volume: 25 mL

Extract ID: 19H0130-03 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	0.617	ug/L	
Cadmium	7440-43-9	1	0.0300	0.100	ND	ug/L	U
Copper	7440-50-8	1	0.340	0.500	1.15	ug/L	
Nickel	7440-02-0	1	0.0500	0.500	3.64	ug/L	
Selenium	7782-49-2	1	0.440	0.500	ND	ug/L	U
Zinc	7440-66-6	1	0.820	4.00	4.34	ug/L	



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

Metals and Metallic Compounds - Quality Control

Batch BHH0361 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Prepared: 14-Aug-2019 Analyzed: 14-Aug-2019 17:26												
Blank (BHH0361-BLK1)												
Antimony	121	ND	0.0180	0.200	ug/L							U
Beryllium	9	ND	0.0290	0.200	ug/L							U
Chromium	52	ND	0.130	0.500	ug/L							U
Lead	208	ND	0.0680	0.100	ug/L							U
Silver	107	ND	0.0170	0.200	ug/L							U
Thallium	205	0.0120	0.00800	0.200	ug/L							J
Arsenic	75a	ND	0.0220	0.200	ug/L							U
Cadmium	111	ND	0.0300	0.100	ug/L							U
Copper	63	ND	0.340	0.500	ug/L							U
Nickel	60	ND	0.0500	0.500	ug/L							U
Selenium	78	ND	0.440	0.500	ug/L							J
Zinc	66	1.22	0.820	4.00	ug/L							J
Zinc	67	1.37	0.940	4.00	ug/L							J
Prepared: 14-Aug-2019 Analyzed: 14-Aug-2019 17:31												
LCS (BHH0361-BS1)												
Antimony	121	25.0	0.0180	0.200	ug/L	25.0		100	80-120			
Beryllium	9	25.5	0.0290	0.200	ug/L	25.0		102	80-120			
Chromium	52	26.2	0.130	0.500	ug/L	25.0		105	80-120			
Lead	208	25.8	0.0680	0.100	ug/L	25.0		103	80-120			
Silver	107	26.2	0.0170	0.200	ug/L	25.0		105	80-120			
Thallium	205	25.0	0.00800	0.200	ug/L	25.0		99.9	80-120			
Arsenic	75a	24.3	0.0220	0.200	ug/L	25.0		97.0	80-120			
Cadmium	111	25.2	0.0300	0.100	ug/L	25.0		101	80-120			
Copper	63	26.5	0.340	0.500	ug/L	25.0		106	80-120			
Nickel	60	25.2	0.0500	0.500	ug/L	25.0		101	80-120			
Selenium	78	79.7	0.440	0.500	ug/L	80.0		99.6	80-120			
Zinc	66	82.9	0.820	4.00	ug/L	80.0		104	80-120			
Zinc	67	79.7	0.940	4.00	ug/L	80.0		99.6	80-120			



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP
Beryllium-9	NELAP,WADOE,WA-DW,DoD-ELAP
Chromium-52	NELAP,WADOE,WA-DW,DoD-ELAP
Chromium-53	NELAP,WADOE,WA-DW,DoD-ELAP
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Cadmium-111	NELAP,WADOE,WA-DW,DoD-ELAP
Cadmium-114	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-60	NELAP,WADOE,WA-DW,DoD-ELAP
Nickel-62	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019



Cascade Analytical, Inc.-Eurofins
3019 GS Center Rd
Wenatchee WA, 98801

Project: Chelan County PUD
Project Number: [none]
Project Manager: Andy Schut

Reported:
16-Aug-2019 16:39

Notes and Definitions

D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
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.



**AGRICULTURAL &
ENVIRONMENTAL ANALYSIS**

3019 G.S. Center Rd.
Wenatchee, WA 98801

(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

TAL

SPECIAL SERVICE ORDER FORM

SAMPLE #		1	2	3	4
SEND RESULTS TO					
1) Client 2) Billing 3) Both Client					
SAMPLE REPRESENTS					
1) Food 2) Water 3) Soil 4) Plant Tissue 5) Other Water					
SAMPLE BY					
1) Client 2) Field Rep. 3) Quality Control 4) Cascade 5) Other					
SAMPLER'S NAME					

CLIENT NAME/ADDRESS

Chelan Co PUB
PO Box 1231
Wenatchee, WA 98807-1231

PHONE NO. Ann. Jennifer Burns

BILLING NAME/ADDRESS

Same

PHONE NO.

EMAIL Jennifer.burns@ChelanPub.org

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

RELINQUISHED BY: (Signature)	DATE	RELINQUISHED BY: (Signature)	DATE	RELINQUISHED BY: (Signature)	DATE
<i>[Signature]</i>	8/6/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME

1	SAMPLE I.D.	Unwatering Sump	Sample Date	8/6/19	Sample Time	9:30
	ANALYSIS REQUESTED	EPA 1631 Low Level Hg, Surfactants SM 5540 C-2011				
	COMMENT	26188				
2	SAMPLE I.D.	Station Sump	Sample Date		Sample Time	10:15
	ANALYSIS REQUESTED	EPA 1631 Low Level Hg, Surfactants SM 5540 C-2011				
	COMMENT	26189				
3	SAMPLE I.D.	Intake Water	Sample Date		Sample Time	10:50
	ANALYSIS REQUESTED	EPA 1631 Low Level Hg, Surfactants SM 5540 C-2011				
	COMMENT	26190				
4	SAMPLE I.D.		Sample Date		Sample Time	
	ANALYSIS REQUESTED	EPA 1631 Low Level Hg, Surfactants SM 5540 C-2011				
	COMMENT					

Sample container received by client was sealed Yes ☐ No ☐
Sample container received by laboratory was sealed Yes ☐ No ☐

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from use of Cascade Analytical test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are not other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical, Inc.'s liability to customer as a result of customer's use of Cascade's tests results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

Customer Signature

[Signature]

Date

8/6/19



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

August 30, 2019

Analytical Report for Service Request No: K1907357

Andy Schut
Cascade Analytical, Incorporated
1008 W. Ahtanum Rd. STE 2
Union Gap, WA 98903

RE: Chelan Co PUD

Dear Andy,

Enclosed are the results of the sample(s) submitted to our laboratory August 09, 2019
For your reference, these analyses have been assigned our service request number **K1907357**.

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 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy
Project Manager



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Chain of Custody

Subcontract Lab Results

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.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- 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. See case narrative.
- 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.pjlabs.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/bsdwlabservice.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.



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

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ALS Job#

K1907357

PO # 9965538819-A

<http://www.alsglobal.com>

Date 8/8/19 Page Of [illegible]

SIGNATURES Name Company Date *Time:*

1. ReInauglshed By:

Received By:

2. Relinquished By:

Received By:

TURNAROUND REQUESTED in Business Days*

Specify:

Fuels & Hydrocarbon Analysis

Page 1 of 1



1-800-545-4206

AGRICULTURE &
ENVIRONMENTAL ANALYSIS

(509) 662-1888
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3019 G.S. Center Road
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(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahlstrom Rd.
Union Gap, WA 98903

K1907357

Sub-Contract ORDER FORM

P.O. NO:

99655 38819 - A

PROJECT NAME	Chelan Co PUD

CONTRACT LAB	ALS
ADDRESS	
CITY, STATE, ZIP	
TELEPHONE	

RELINQUISHED BY: Signature [1]	DATE	RELINQUISHED BY: Signature [2]	DATE	RELINQUISHED BY: Signature [3]	DATE
<i>[Signature]</i>	8/8/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
DARA Schultz	2:00				
RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE
<i>[Signature]</i>	8/9/19				
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
Edy Caraves	0915				

1	Sample I.D.	19-26188	Sample Date	8/6/19	Sample Time	9:30
	ANALYSIS REQUESTED					
	COMMENT					
2	Sample I.D.	19-26189	Sample Date	8/6/19	Sample Time	10:15
	ANALYSIS REQUESTED					
	COMMENT					
3	Sample I.D.	19-26190	Sample Date	8/6/19	Sample Time	10:50
	ANALYSIS REQUESTED					
	COMMENT					
4	Sample I.D.		Sample Date		Sample Time	
	ANALYSIS REQUESTED					
	COMMENT					

SPECIAL INSTRUCTIONS:

Results & Billing to
Cascade Analytical

PC KL

Cooler Receipt and Preservation Form

Client Cascade Analytical Service Request K19 07357
Received: 8/9/19 Opened: 8/9/19 By: BR Unloaded: 8/9/19 By: BR

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cobler 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

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
<u>1.8</u>	<u>1.8</u>	<u>-</u>	<u>-</u>	<u>0.0</u>	<u>349</u>	<u>NA</u>	<u>17X347340341352396</u>		
<u>0.0</u>	<u>-0.4</u>	<u>-</u>	<u>-</u>	<u>-0.4</u>	<u>393</u>		<u>17X347340340998403</u>		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Plg peanuts
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below.
If applicable, tissue samples were received: Frozen Partially Thawed Thawed NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2.
Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

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

Notes, Discrepancies, & Resolutions: _____



Subcontract Lab Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



August 30, 2019.

Service Request No K1907357

Kelley Lovejoy.
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626

Laboratory Results for: Cascade Analytical, Incorporated.

Dear Kelley,

Enclosed are the results of the samples submitted to our laboratory August 13, 2019.
For your reference these analyses have been assigned our service request number **K1907357**.

Analyses were performed according to our laboratory's NELAP approved quality assurance program. The test results meet requirements of the current TNI standards where applicable and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items samples analyzed as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted

ALS Group USA Corp dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS	Stancliff Rd Suite	Houston TX
PHONE	281 530 5656	
	ALS Group USA Corp dba ALS Environmental	



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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ALS Environmental

Client: Cascade Analytical
Project: Chelan Co PUD
Sample Matrix: Water

Service Request No.: K1907357
Date Received: 08/13/19

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three samples were received for analysis at ALS Environmental in Houston on 08/13/19.

The samples were received at 3.5°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900284: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

Y flags – Cleanup Standard

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits in the batch QC samples. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

13C-2,3,7,8-TCDD labeled standard recovery below QC limits in the Method Blank and DLCS. Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD

Service Request:K1907357

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K1907357-001	19-26188	8/6/2019	0930
K1907357-002	19-26189	8/6/2019	1015
K1907357-003	19-26190	8/6/2019	1050

Service Request Summary

Folder #: K1907357
Client Name: Cascade Analytical, Incorporated
Project Name: Chelan Co PUD
Project Number:

Report To: Andy Schut
 Cascade Analytical, Incorporated
 1008 W. Ahtanum Rd. STE 2
 Union Gap, WA 98903
 USA

Phone Number: 509-452-7707
Cell Number:
Fax Number: 509-452-7773
E-mail: andrewschut@eurofinsus.com

Project Chemist: Kelley Lovejoy

Originating Lab: KELSO

Logged By: CGRAVES

Date Received: 08/09/19

Internal Due Date: 9/5/2019

QAP: LAB QAP

Qualifier Set: Lab Standard

Formset: Lab Standard

Merged?: Y

Report to MDL?: Y

P.O. Number: 9965538819-A

EDD: No EDD Specified

6 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved

Location: EHRMS-WIC 3A, E-Disposed

Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	Dioxins Furans/1613B	HOUST ON
K1907357-001	19-26188	Water	08/06/19 0930	II	
K1907357-002	19-26189	Water	08/06/19 1015	II	
K1907357-003	19-26190	Water	08/06/19 1050	II	

6 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
Location: EHRMS-WIC 3A, E-Disposed
Pressure Gas:

Service Request Summary

Folder #:	K1907357	Project Chemist:	Kelley Lovejoy
Client Name:	Cascade Analytical, Incorporated	Originating Lab:	KELSO
Project Name:	Chelan Co PUD	Logged By:	CGRAVES
Project Number:		Date Received:	08/09/19
Report To:	Andy Schut	Internal Due Date:	9/5/2019
	Cascade Analytical, Incorporated	QAP:	LAB QAP
	1008 W. Ahtanum Rd. STE 2	Qualifier Set:	Lab Standard
	Union Gap, WA 98903	Formset:	Lab Standard
	USA	Merged?:	Y
Phone Number:	509-452-7707	Report to MDL?:	Y
Cell Number:		P.O. Number:	9965538819-A
Fax Number:	509-452-7773	EDD:	No EDD Specified
E-mail:	andrewschut@eurofinsus.com		

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	Dioxins Furans/1613B	3	Extracy 2000ml to meet 1.3pg/L EDL/5 pg/L MRL

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
- i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2019
Hawaii Department of Health	TX02694	4/30/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028	12/31/2019
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1556965	12/31/2019
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2018-156	8/31/2019
Oklahoma Department of Environmental Quality	2019-141	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016	6/30/2020
Texas Commission on Environmental Quality	TX104704231-19-23	4/30/2020
United States Department of Agriculture	P330-18-00368	12/14/2019
Washington Department of Health	C819	11/14/2019
West Virginia Department of Environmental Protection	347	6/30/2020

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID K1907357

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:

Analyst:

Samples:

08/30/19

LKL

001 - 003

Second Level - Data Review – to be filled by person doing peer review

Date:

Analyst:

Samples:

08/20/19

VW

001 - 003



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Kelley Lovejoy

Project Name: Chelan Co PUD

Project Number:

Project Manager: Andy Schut

Company: Cascade Analytical, Incorporated

QAP: LAB QAP

K1907357

Cascade Analytical, Incorporated
Chelan Co PUD

5



Lab Code	Client Sample ID	# of Cont.	Matrix	Sample			Date Received	Time	Date Sent To	Dioxins Furans 1613B
				Date	Date	Time				
K1907357-001	19-26188	2	Water	8/6/19	8/6/19	0930	8/9/19		HOUSTON	II
K1907357-002	19-26189	2	Water	8/6/19	8/6/19	1015	8/9/19		HOUSTON	II
K1907357-003	19-26190	2	Water	8/6/19	8/6/19	1050	8/9/19		HOUSTON	II

Test Comments

Dioxins Furans - 1613B

K1907357-001, 2, 3

✓ 2,3,7,8-TCDD only: 5 pg/L and 1.3 pg/L detection required per permit

Special Instructions/Comments Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKS Data@alsglobal.com	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ✓ STANDARD Requested FAX Date: _____ Requested Report Date: 09/05/19	Report Requirements I. Results Only ✓ II. Results + QC Summaries III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data PQL/MDL/J EDD Y N	Invoice Information
			PO# 51K1907357 Bill to

pH Checked

Relinquished By: *Chelan* 8/12/19 0900

Received By:

8/12/19 0900

Airbill Number:



ALS Environmental

Cooler Receipt Form

Project Chemist

ea

Client/Project

Path-1

Thermometer ID

4 MB-1

Date/Time Received:

8/13/14

Initials:

ea

Date/Time Logged in:

8/13/14

Initials

ea1. Method of delivery: ☐ US Mail ☒ Fed Ex ☐ UPS ☐ DHL ☐ Courier ☐ Client2. Samples received in: ☒ Cooler ☐ Box ☐ Envelope ☐ Other

3. Were custody seals on coolers?

☒ Yes☐ NoIf yes, how many
and where?1 - FRONT

Were they intact?

☒ Yes☐ No☐ N/A

Were they signed and dated?

☒ Yes☐ No☐ N/A4. Packing Material: ☐ Inserts ☐ Baggies ☐ Bubble Wrap ☒ Gel Packs ☐ Wet Ice ☒ Sleeves ☐ Other

5. Foreign or Regulated Soil?

☐ Yes☐ No

Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
<u>4808 3232 3433</u>		<u>8/13/14</u>	<u>09:46</u>	<u>ea</u>	<u>2.1/3.5</u>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

6. Were custody papers properly filled out (ink, signed, dated, etc)?

☒ Yes☐ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)?

☒ Yes☐ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)?

☒ Yes☐ No

9. Were appropriate bottles/containers and volumes received for the requested tests?

☒ Yes☐ No

10. Did sample labels and tags agree with custody documents?

☒ Yes☐ No

Notes, Discrepancies, & Resolutions:

Service request Label:

K1907357

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Cascade Analytical, Incorporated
Chelan Co PUD



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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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Preparation Information Benchsheet

Prep Run#: 342623
Team: Semivao GCMS/JGUIN

Prep WorkFlow: OrgExtAq(365)
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 8/16/19 09:00

#	Lab Code	Client ID	B#	Method /Test	pH	CI	Matrix	Amt. Ext.	Sample Description
1	E1900596-001	001A	.01	1613B/Dioxins Furans	7	x	Water	974mL	Clear
2	E1900597-001	002A	.01	1613B/Dioxins Furans	7	x	Water	957mL	Clear
3	E1900598-001	SLC-8165-005	.01	1613B/Dioxins Furans	7	x	Water	901mL	Clear
4	EQ1900284-01	MB		1613B/Dioxins Furans	5	x	Liquid	1000mL	
5	EQ1900284-02	LCS		1613B/Dioxins Furans	5	x	Liquid	1000mL	
6	EQ1900284-03	DLCS		1613B/Dioxins Furans	5	x	Liquid	1000mL	
7	J1904569-002	Bleach Plant (006)	.01	1613B/Dioxins Furans	2	x	Water	1987mL	Golden
8	J1904626-001	GP-BE-08-06-19-B4GC.A4GC	.01	1613B/Dioxins Furans	3	x	Water	1000mL	Golden
9	K1907056-001	2019-SU-AO-WA-WA-RE-PC/DF/Hg-01	.02	1613B/Dioxins Furans	7	x	Water	1052mL	Clear
10	K1907056-002	2019-SU-SA-WA-WA-RE-PC/DF/Hg-02	.01	1613B/Dioxins Furans	7	x	Water	975mL	Clear
11	K1907056-003	2019-SU-LO-WA-WA-RE-PC/DF/Hg-03	.01	1613B/Dioxins Furans	7	x	Water	719mL	Clear
12	K1907178-001	LEACHATE-HQLF	.03	1613B/Dioxins Furans	7	x	Water	1064mL	Black
13	K1907357-001	19-26188	.01	1613B/Dioxins Furans	6	x	Water	2102mL	Clear
14	K1907357-002	19-26189	.01	1613B/Dioxins Furans	6	x	Water	2103mL	Clear
15	K1907357-003	19-26190	.01	1613B/Dioxins Furans	6	x	Water	2078mL	Clear
16	K1907360-001	19-26651	.01	1613B/Dioxins Furans	6	x	Water	2106mL	Clear
17	K1907360-002	19-26652	.01	1613B/Dioxins Furans	6	x	Water	2098mL	Clear
18	K1907360-003	19-26653	.01	1613B/Dioxins Furans	6	x	Water	2088mL	Clear
19	K1907360-004	19-26654	.01	1613B/Dioxins Furans	6	x	Water	2125mL	Clear
20	K1907368-001	ARS3-19-02417-001	.08	1613B/Dioxins Furans	7	x	Water	501mL	Brown - Had to dilute sample

Spiking Solutions

Name:	1613B Matrix Working Standard	Inventory ID	201735	Logbook Ref.	201735 8/5/19 JG 2-20ng/ml	Expires On:	02/01/2020
EQ1900284-02	100.00µL	EQ1900284-03	100.00µL				
Name:	1613B Labeled Working Standard	Inventory ID	201964	Logbook Ref.	201964 JG 8/12/19 2-4ng/ml	Expires On:	12/17/2019
K1907056-002	1,000.00µL	K1907056-003	1,000.00µL				
K1907360-002	1,000.00µL	K1907360-003	1,000.00µL	K1907357-001	1,000.00µL	K1907357-002	1,000.00µL
Name:	1613B Labeled Working Standard	Inventory ID	201965	Logbook Ref.	201965 JG 8/12/19 2-4ng/ml	Expires On:	12/17/2019
E1900596-001	1,000.00µL	E1900597-001	1,000.00µL				
J1904569-002	1,000.00µL	J1904626-001	1,000.00µL	E1900284-01	1,000.00µL	EQ1900284-02	1,000.00µL
K1907357-001	1,000.00µL	K1907357-002	1,000.00µL	K1907056-001	1,000.00µL	K1907056-003	1,000.00µL
K1907360-004	1,000.00µL	K1907368-001	1,000.00µL	K1907360-001	1,000.00µL	K1907360-002	1,000.00µL

Preparation Information Benchsheet

Prep Run#: 342623
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtAq(365)
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 8/16/19 09:00

Name:	8290/1613B Cleanup Working Standard	Inventory ID	202012	Logbook Ref	202012 JG 8/13/19	Expires On:	09/15/2019
E1900596-001	100.00µL	E1900597-001	100.00µL	E1900598-001	100.00µL	EQ1900284-01	100.00µL
J1904569-002	100.00µL	J1904626-001	100.00µL	K1907056-001	100.00µL	K1907056-002	100.00µL
K1907357-001	100.00µL	K1907357-002	100.00µL	K1907357-003	100.00µL	K1907360-001	100.00µL
K1907360-004	100.00µL	K1907368-001	100.00µL				
Preparation Materials							
Carbon, High Purity	JG 8/14/19 (202061)			Ethyl Acetate 99.9% Minimum	JG 7/16/19 (201129)	Glass Wool	JG 8/1/19 (201624)
Hexanes 99%	JG 7/23/19 (201339)			Chlorine Test Strips	JG 7/30/2019 (201540)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	JG 7/19/19 (201263)
Sodium Chloride 5%	308051706 (202016)			Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 8/14/19 (202064)
ColorpHast pH-Indicator Strips	AL 10/23/18 (194375)			Silica Gel	silica gel 073119 rw (201591)	sulfuric acid	JG 6/18/19 (200325)
Toluene 99.9% Minimum	JG 7/23/19 (201341)						

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	8/16/19 09:00	Started:	8/19/19 09:00	Started:	8/20/19 10:00	Started:	8/20/19 12:00
Finished:	8/16/19 16:00	Finished:	8/19/19 10:00	Finished:	8/20/19 12:00	Finished:	8/20/19 14:20
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments:

Reviewed By: JG

Date: 8/29/2019

Chain of Custody

Relinquished By:

Date:

Received By:

Date:

Extracts Examined

Yes No



Analytical Results

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357
Date Collected: 08/06/19 09:30
Date Received: 08/09/19 09:15

Sample Name: 19-26188
Lab Code: K1907357-001

Units: pg/L
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2102mL

Date Analyzed: 08/28/19 07:03
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P618780

Data File Name: P618789
ICAL Date: 08/01/19

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.934	2.38			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357
Date Collected: 08/06/19 09:30
Date Received: 08/09/19 09:15

Sample Name: 19-26188
Lab Code: K1907357-001

Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2102mL

Date Analyzed: 08/28/19 07:03
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

Data File Name: P618789
ICAL Date: 08/01/19

Blank File Name: P523811
Cal Ver. File Name: P618780

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	968.104	48		31-137	0.78	1.031
37Cl-2,3,7,8-TCDD	800	373.118	47		42-164	NA	1.033

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Sample Name: 19-26189
Lab Code: K1907357-002

Service Request: K1907357
Date Collected: 08/06/19 10:15
Date Received: 08/09/19 09:15

Units: pg/L
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2103mL

Data File Name: P618790
ICAL Date: 08/01/19

Date Analyzed: 08/28/19 07:52
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P618780

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.890	2.38			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Sample Name: 19-26189
Lab Code: K1907357-002

Service Request: K1907357
Date Collected: 08/06/19 10:15
Date Received: 08/09/19 09:15

Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2103mL

Data File Name: P618790
ICAL Date: 08/01/19

Date Analyzed: 08/28/19 07:52
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P618780

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1195.759	60		31-137	0.79	1.031
37Cl-2,3,7,8-TCDD	800	440.762	55		42-164	NA	1.033

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water
Sample Name: 19-26190
Lab Code: K1907357-003

Service Request: K1907357
Date Collected: 08/06/19 10:50
Date Received: 08/09/19 09:15

Units: pg/L
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2078mL
Data File Name: P618791
ICAL Date: 08/01/19

Date Analyzed: 08/28/19 08:41
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P618780

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.827	2.41			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Sample Name: 19-26190
Lab Code: K1907357-003

Service Request: K1907357
Date Collected: 08/06/19 10:50
Date Received: 08/09/19 09:15

Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 2078mL

Data File Name: P618791
ICAL Date: 08/01/19

Date Analyzed: 08/28/19 08:41
Date Extracted: 8/16/19
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P618780

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1117.109	56		31-137	0.79	1.031
37Cl-2,3,7,8-TCDD	800	427.330	53		42-164	NA	1.033

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ1900284-01

Service Request: K1907357
Date Collected: NA
Date Received: NA
Units: pg/L
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL
Data File Name: P523811
ICAL Date: 04/25/19

Date Analyzed: 08/22/19 19:54
Date Extracted: 8/16/19
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P523808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	8.69	8.69			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: EQ1900284-01

Service Request: K1907357
Date Collected: NA
Date Received: NA
Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL
Data File Name: P523811
ICAL Date: 04/25/19

Date Analyzed: 08/22/19 19:54
Date Extracted: 8/16/19
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P523808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	499.559	25	Y	31-137	0.82	1.021
37Cl-2,3,7,8-TCDD	800	237.890	30	Y	42-164	NA	1.021



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357
Date Analyzed: 08/23/19
Date Extracted: 08/16/19

Duplicate Lab Control Sample Summary

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar

Units: pg/L
Basis: NA
Analysis Lot: 648898

Lab Control Sample
EQ1900284-02

Duplicate Lab Control Sample
EQ1900284-03

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD	212	200	106	209	200	104	73-146	2	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Sample Name: Lab Control Sample
Lab Code: EQ1900284-02

Service Request: K1907357
Date Collected: NA
Date Received: NA

Units: pg/L
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL

Data File Name: P523820
ICAL Date: 04/25/19

Date Analyzed: 08/23/19 03:14
Date Extracted: 8/16/19
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P523808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	212		3.37	5.00	0.76	1.001	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1900284-02

Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL

Data File Name: P523820
ICAL Date: 04/25/19

Date Analyzed: 08/23/19 03:14
Date Extracted: 8/16/19
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P523808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	673.134	34		31-137	0.83	1.020
37Cl-2,3,7,8-TCDD	800	309.620	39	Y	42-164	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357

Date Collected: NA

Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1900284-03

Units: pg/L

Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL

Date Analyzed: 08/23/19 04:02

Date Extracted: 8/16/19

Instrument Name: E-HRMS-07

GC Column: DB-5MSUI

Data File Name: P523821

Blank File Name: P523811

ICAL Date: 04/25/19

Cal Ver. File Name: P523808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	209		3.67	5.00	0.78	1.001	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Cascade Analytical, Incorporated
Project: Chelan Co PUD
Sample Matrix: Water

Service Request: K1907357
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1900284-03

Units: Percent
Basis: NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Sep Funnel/Jar
Sample Amount: 1000mL

Data File Name: P523821
ICAL Date: 04/25/19

Date Analyzed: 08/23/19 04:02
Date Extracted: 8/16/19
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P523811
Cal Ver. File Name: P523808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	519.103	26	Y	31-137	0.80	1.021
37Cl-2,3,7,8-TCDD	800	255.405	32	Y	42-164	NA	1.021

BSK



AGRICULTURAL &
ENVIRONMENTAL ANALYSIS

3019 G.S. Center Rd.
Wenatchee, WA 98801

(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

SPECIAL SERVICE ORDER FORM

SEND RESULTS TO	SAMPLE #	1	2	3	4
1) Client 2) Billing 3) Both Client					
SAMPLE REPRESENTS					
1) Food 2) Water 3) Soil 4) Plant Tissue 5) Other Water					
SAMPLE BY					
1) Client 2) Field Rep. 3) Quality Control 4) Cascade 5) Other					
SAMPLER'S NAME					

CLIENT NAME/ADDRESS
Chelan Co PUD
PO Box 1231
Wenatchee, WA 98807-1231
PHONE NO. 509-662-1888

BILLING NAME/ADDRESS
Same
PHONE NO.

EMAIL jennifer.buras@chelanpud.org

EMAIL

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
	8/6/19				
(Printed) Michael D. Hastings	TIME	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME

1	SAMPLE I.D. Unwatering Sump	Sample Date 8/6/19	Sample Time 9:50
	ANALYSIS REQUESTED 608.3 PCB's		
	COMMENT		
2	SAMPLE I.D. Station Sump	Sample Date 8/6/19	Sample Time 12:15
	ANALYSIS REQUESTED 608.3 PCB's		
	COMMENT		
3	SAMPLE I.D. Intake water	Sample Date 8/6/19	Sample Time 10:50
	ANALYSIS REQUESTED 608.3 PCB's		
	COMMENT		
4	SAMPLE I.D. [Signature]	Sample Date	Sample Time
	ANALYSIS REQUESTED 608.3 PCB's		
	COMMENT		

Sample container received by client was sealed Yes ☐ No ☐
Sample container received by laboratory was sealed Yes ☐ No ☐

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from use of Cascade Analytical test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are not other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical, Inc.'s liability to customer as a result of customer's use of Cascade's tests results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

Customer Signature

Date

8/6/19



Water Quality - Drinking & Wastewater

FIELD SERVICES REPORT

DATE 8/6/19 CLIENT: Chelan Co PUD BATCH NUMBER: 996553
Contact Person: Jeanifer Burns Phone: _____ Email: _____
Location/Facility: Rocky Reach Dam Check in/out time: 8:30 - 11:30

On-Site Analyses, Measurements, Observations

Description Water Sampling
Comments: _____

Water System / Identification	On-Site Analyses	Notes
Unwatering Sump	pH=7.73 Temp=18.0°	TRC = <0.05
Station Sump	pH=7.79 Temp=18.2°	TRC = <0.05
Intake Water	pH=7.92 Temp=19.3°	TRC = <0.05

Billable Services

Site Time: 3 hr (sample preparation, sampling, documentation, on-site analysis)
Drive Time: 1 hr
Mileage: 1 hr
Circle one: round trip to/from lab between client facilities
Comments: _____

Cascade Analytical Employee Signature: _____

CSF-01 Revised 3.1.2017



Sample Receipt Form

Date Received: 8/6/19 Time Received: 11:55 Initials: JS

Client Name: Chelan Co. PUD Project Name: _____

Temperature of cooler upon receipt: 11 °C Thermometer ID: 44

Custody seals: Intact Broken None N/A

Chain of Custody Completed:

Client name, address, and phone number;	<u>Yes</u>	No
Date and time of sampling;	<u>Yes</u>	No
Test requests clear;	<u>Yes</u>	No
Completed in ink;	<u>Yes</u>	No
Signed by client;	<u>Yes</u>	No

All samples received: Yes No

All samples intact: Yes No

Sample ID's match COC form: Yes No

Appropriate containers used: Yes No

Sufficient amount of sample for analysis: Yes No

Correct preservative verified: N/A Yes No

Air bubbles in VOC, THM, or HAA5 samples: N/A Yes No

Sample(s) exceed hold time: Yes No

Type of coolant: Ice Blue Ice None Other Comment: _____

Shipping Method: FedEx UPS USPS Brett & Sons Hand Delivered CAI Sampled

Shipping Container: CAI Cooler CAI Cooler Box Client's Cooler None Other _____

Samples accepted for analysis: Yes No

Reason for Rejection: _____

Name of Person Contacted: _____ Date Contacted: _____

Comments: _____